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Dong Yang, Ph.D., D.D.S.
Leilei Zhong, Ph.D.

2019 CLASS OF ASBMR FELLOWS

Bo Abrahamsen, M.D., Ph.D.	Jean Jiang, Ph.D.
Robert Adler, M.D.	Melissa Kacena, Ph.D.
Tamara Alliston, Ph.D.	Frederick Kaplan, M.D.
Mary Barbe, Ph.D.	Stavroula Kousteni, Ph.D.
Douglas Bauer, M.D.	Christopher Kovacs, M.D.
Daniel Bikle, M.D., Ph.D.	Nancy Krieger, Ph.D.
Neil Binkley, M.D.	Nancy Lane, M.D.
Harry Blair, M.D.	Bente Langdahl, DMSc
Susan Bloomfield, Ph.D.	Beate Lanske, Ph.D.
David Burr, Ph.D.	Joseph Lorenzo, M.D.
Thomas Carpenter, M.D.	Michael Mannstadt, M.D.
Jake Chen, D.M.D., M.D.S, Ph.D.	Salvatore Minisola, M.D.
Michael Collins, M.D.	Jeri Nieves, Ph.D.
Felicia Cosman, M.D.	Merry Jo Oursler, Ph.D.
Steven Cummings, M.D.	Allison Pettit, Ph.D.
Jeffrey Curtis, M.D., MPH	Lilian Plotkin, Ph.D.
Cyrus Cooper, Ph.D.	Ling Qin, Ph.D.
David Dempster, Ph.D.	Yi-Xian Qin, Ph.D.
Henry Donahue, Ph.D.	Graham Russell, M.D., Ph.D.
Jian (Jerry) Feng, Ph.D.	Mitchell Schaffler, Ph.D.
James Fleet, Ph.D.	Ernestina Schipani, M.D., Ph.D.
Mark Forwood, Ph.D.	Sue Shapses, Ph.D.
Renny Franceschi, Ph.D.	Gary Stein, Ph.D.
Robyn Fuchs, Ph.D.	Paula Stern, Ph.D.
Deborah Galson, Ph.D.	John Stock, M.D.
Xiangdong (Edward) Guo, Ph.D.	Larry Suva, Ph.D.
Kurt Hankenson, DVM, Ph.D.	Leanne Ward, M.D.
Marian Hannan, Ph.D.	Stuart Warden, PT, Ph.D.
Christopher Hernandez, Ph.D.	Guozhi Xiao, M.D., Ph.D.
Mark Horowitz, Ph.D.	Mone Zaidi, M.D., Ph.D., MACP, FRCP

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GENERAL MEETING INFORMATION

ASBMR 2019 Annual Meeting Location

All ASBMR sessions will take place in the Orange County Convention Center in Orlando, Florida, USA, unless otherwise stated. The Orange County Convention Center is located at 9800 International Dr, Orlando, FL, USA 32819.

Annual Meeting Evaluation

The ASBMR 2019 Annual Meeting Evaluation will be accessible online starting Thursday, September 26. An email will be sent to all meeting attendees who provided their email addresses at the time of registration. The email will provide a hyperlink to the online evaluation site. It will also be accessible via the ASBMR website at www.asbmr2019.org. We strongly encourage and welcome all attendees to provide us with feedback on the meeting. Your input is very important to us.

Registration Hours

Registration desks will be open for new registrants and material pick-up in the Orange County Convention Center in the Registration Hall – Valencia Lobby during the following hours:

Thursday, September 19.....	7:00 am – 6:00 pm
Friday, September 20	7:00 am – 7:00 pm
Saturday, September 21	7:00 am – 5:00 pm
Sunday, September 22.....	7:30 am – 5:00 pm
Monday, September 23	7:30 am – 12:00 pm

Discovery Hall Hours

Exhibits are located in the ASBMR Discovery Hall inside Hall West C of the Orange County Convention Center. Please note that children aged 12 and under are not permitted in Discovery Hall at any time. Lunch will be available for purchase in the hall during Exhibit hours.

Friday, September 20	5:00 pm – 7:00 pm
Saturday, September 21	9:30 am – 4:30 pm
Sunday, September 22.....	9:30 am – 4:30 pm
Monday, September 23	9:30 am – 2:30 pm

ASBMR Press Office

The ASBMR Press Office will be in operation to facilitate press-related activities during the meeting. The Press Office will be located in Room W309A in the Orange County Convention Center.

Thursday, September 19.....	2:00 pm – 5:00 pm
Friday, September 20	8:00 am – 6:00 pm
Saturday, September 21	8:00 am – 6:00 pm
Sunday, September 22.....	8:00 am – 5:00 pm
Monday, September 23	8:00 am – 4:00 pm

Future ASBMR Annual Meeting Dates

ASBMR 2020 Annual Meeting

Washington State Convention Center, Seattle, WA, USA
September 11-14, 2020

ASBMR 2021 Annual Meeting

Metro Toronto Convention Center, Toronto, Ontario, Canada
October 1-4, 2021

ASBMR 2022 Annual Meeting

Austin Convention Center, Austin, TX, USA
September 9 - 12, 2022

ASBMR 2023 Annual Meeting

Vancouver Convention Centre, Vancouver, BC, Canada
October 13 - 16, 2023

ASBMR POLICIES

Re-Use of ASBMR Annual Meeting Material

The ASBMR Annual Meeting is held to facilitate the open, non-commercial dissemination of scientific knowledge in the bone and related fields. Material presented at the ASBMR Annual Meeting is subject to copyright or other re-use restrictions. Information about these restrictions, ASBMR policies regarding re-use of such material, and procedures for obtaining permission are detailed below.

Abstracts

Abstracts submitted to the ASBMR 2019 Annual Meeting are copyrighted by the American Society for Bone and Mineral Research and published in the *Journal of Bone and Mineral Research (JBMR®)*. Reproduction, distribution, or transmission of the abstracts in whole or in part, by electronic, mechanical or other means, or other intended use, is prohibited without the express written permission of the American Society for Bone and Mineral Research. Information about how to obtain permission to re-use ASBMR Annual Meeting abstracts is provided below in the section entitled “Re-Use of ASBMR Annual Meeting Abstracts.”

Other Material

Information presented at the ASBMR 2019 Annual Meeting other than abstracts, including but not limited to posters, on-screen presentations (e.g., PowerPoint), and hand-outs, are the intellectual property of individual presenters or organizations other than the ASBMR. Such material may not be re-used without the written consent of the relevant individual or organization and, in some cases, the ASBMR. Details are provided below in the section entitled “Re-Use of Other ASBMR Meeting Materials.”

Re-Use of ASBMR Annual Meeting Abstracts

Embargo

The Abstracts On-Line, Itinerary Builder, and a printable PDF of the *Abstracts* book are made available to Annual Meeting attendees and to members of the ASBMR in advance but are embargoed – that is, unavailable for public release in written, oral or electronic communications – until the start time of the session in which the presentation is being made at the ASBMR Annual Meeting. ASBMR does not grant permission for reproduction or reuse of any ASBMR Annual Meeting abstract until after that abstract has been presented at the meeting.

The ASBMR is sensitive to issues of commercial confidentiality and relevant aspects of the U.S. Securities and Exchange Commission (SEC) regulations. Therefore, the ASBMR reminds all readers that all must adhere to the U.S. Securities and Exchange Commission regulations and treat all scientific information as confidential until the embargo has been lifted – one hour after the abstract has been presented. Any reader of, or listener to, ASBMR Annual Meeting content may be viewed as an “insider” by the SEC due to knowledge of information included in abstracts, particularly clinical trial abstracts. SEC regulations may call for criminal penalties for using such information.

Permission for Re-Use of Abstracts: Individuals and News Media

Permission requests for individual or news media reproduction or reuse of *JBMR*® material or for reproduction or reuse of *JBMR*® material in a professional work (e.g., a journal or professional reference book) must be made in writing to the Permissions Department, John Wiley & Sons, Inc., 111 River Street MS 4-02, Hoboken, NJ 07030-5774 USA; fax: +1 (201) 748-6008; e-mail: permissionsus@wiley.com, and should include a statement of intended use, as well as explicit specifications of the materials to be reproduced. When submitting your permission request, please include the following information:

- A complete citation of the requested material (title of journal, volume number, issue number, year, author name, article or abstract title, specific page numbers, and, if applicable, abstract number)
- The intended use of the material (for publication, slides, handouts, etc.)
- If for handouts: the number of copies being made
- If for republication: the publisher and the name of the new publication
- How the material will be reproduced and distributed
- Complete contact details (name, institution/company name, address, telephone, fax, email)

Permission for Re-Use of Abstracts: Corporate Purposes

Permission for reproduction or reuse of *JBMR*® material, including abstracts, for corporate purposes (e.g., storage on a corporate intranet, corporately-sponsored distribution to physicians) is subject to approval by the ASBMR. Requests for commercial reprints or similar reuse of *JBMR*® material, including abstracts, must be directed to Beth Ann Rocheleau, Reprints and Eprints Manager, Rockwater, Inc., PO Box 2211, Lexington, SC 29071, USA, phone: +1 (803) 359-4578; email: info@rockwaterinc.com.

Should ASBMR grant permission for abstract reproduction, the following must occur: A disclaimer must be prominently displayed/printed (often this appears on the inside front cover), indicating that the choice of abstracts to reproduce full-text was not made by the ASBMR. *Example: Selection of abstracts was made by {company name} and does not necessarily include all abstracts presented on this subject at the 2019 Annual Meeting of the American Society for Bone and Mineral Research {Orlando, Florida, USA 9/20/2019-9/23/2019}. The compilation does not constitute an endorsement by ASBMR of the product, assay or information contained herein. No responsibility is assumed and responsibility is hereby disclaimed by the American Society for Bone and Mineral Research for any injury and/or damage to persons or property as a matter of product liability, negligence or otherwise, or from any use or operation of methods, products, instructions or ideas presented in the abstracts. Independent verification of diagnosis and drug dosages should be made. Discussions, views and recommendations as to medical procedures, choice of drugs and drug dosages are the responsibilities of the authors.*

Translation of Abstracts

Translation of *JBMR*[®] material, including abstracts, into languages other than English is subject to the approval of the ASBMR. Translations must carry the following disclaimer in English and in the language of the translation: *The American Society for Bone and Mineral Research takes no responsibility for the accuracy of the translation from the published English original and is not liable for any errors which may occur. No responsibility is assumed, and responsibility is hereby disclaimed, by the American Society for Bone and Mineral Research for any injury and/or damage to persons or property as a matter of product liability, negligence or otherwise, or from any use or operation of methods, products, instructions or ideas presented in the Journal. Independent verification of diagnosis and drug dosages should be made. Discussions, views, and recommendations as to medical procedures, choice of drugs and drug dosages are the responsibility of the authors.*

Re-Use of Other ASBMR Annual Meeting Material

Re-Use for Commercial purposes

Organizations may not re-use material presented at the Annual Meeting for commercial purposes without the written consent of the presenter or other appropriate party (e.g., the copyright holder) and the ASBMR. Commercial purposes include but are not limited to symposia, educational programs, and other forms of presentation, whether developed or offered by for-profit or not-for-profit entities, and that involve funding from for-profit firms or a registration fee that is other than nominal. Questions regarding this policy or requests for re-use of Annual Meeting materials may be directed to the ASBMR Business Office at +1 (202) 367-1161 or asbmr@asbmr.org.

Disclaimer

All authored abstracts, findings, conclusions, recommendations, or oral presentations are those of the author(s) and do not reflect the views of the ASBMR or imply any endorsement. No responsibility is assumed, and responsibility is hereby disclaimed, by the American Society for Bone and Mineral Research for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of methods, products, instructions, or ideas presented in the materials herein (2019 Abstracts). Independent verification of diagnosis and drug dosages should be made. Discussions, views, and recommendations as to medical procedures, choice of drugs, and drug dosages are the responsibility of the authors.

Audio, Photo and Video Recording Policy

ASBMR expects that attendees respect each presenter's willingness to provide free exchange of scientific information without the abridgement of his or her rights or privacy and without the unauthorized copying and use of the scientific data shared during his or her presentation. In addition, ASBMR expects that attendees will respect exhibitors' desires not to have their products or booths photographed or video-recorded.

The use of mobile devices, tablets, cameras, audio-recording devices, and video-recording equipment is strictly prohibited within all Scientific Sessions, the Discovery Hall, and Poster Sessions without the express written permission of both the ASBMR and the presenter/exhibitor. Unauthorized use of the recording equipment may result in the confiscation of the equipment or the individual may be asked to leave the session or Discovery Hall. These rules are strictly enforced.

Use of ASBMR Name and Logo

ASBMR reserves the right to approve the use of its name in all materials disseminated to the press, public and professionals. The ASBMR name, meeting name, and meeting logo may not be used without permission. Use of the ASBMR logo is prohibited without the express written permission of the ASBMR Executive Director. All ASBMR corporate supporters and exhibitors should share their media outreach plans with the ASBMR before release.

No abstract presented at the ASBMR 2019 Annual Meeting may be released to the press before its official presentation date and time. Press releases must be embargoed until one hour after the presentation.

CONTINUING MEDICAL EDUCATION CREDITS



This activity has been planned and implemented by Creighton University Health Sciences Continuing Education (HSCE) and The American Society for Bone and Mineral Research (ASBMR) for the advancement of patient care. Creighton University Health Sciences Continuing Education is accredited by the American Nurses Credentialing Center (ANCC), the Accreditation Council for Pharmacy Education (ACPE), and the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing education for the healthcare team.

AMA PRA Statement

Creighton University Health Sciences Continuing Education designates this live activity for a maximum of 25.25 *AMA PRA Category 1 Credit(s)*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

AAPA accepts AMA category 1 credit for the PRA from organizations accredited by ACCME.

Online Evaluation to Receive CME

The online evaluation to receive CME will be available beginning Thursday, September 26. *Please Note:* There is a \$50 fee per application. This fee can be paid when you register for the Annual Meeting or added during the Meeting at the Registration Desk.

Meeting Objectives

Upon returning home from the meeting, participants should be able to:

- Identify and discuss the most current and significant advances in biomedical and clinical research in bone and mineral metabolism and better understand the interrelationship among basic research, clinical research and patient care.
- Improve the ability to treat and care for patients through an enhanced knowledge of osteoporosis, other diseases of bone, basic bone biology and its correlation to mineral metabolism.
- Develop and apply new and enhanced strategies for the assessment, diagnosis and treatment of patients at risk for or with osteoporosis and improve the ability to treat and care for patients.

Target Audience

The program is designed for researchers, physicians and other health and allied health professionals with interests in biomechanics, cell biology, dentistry, endocrinology, epidemiology, genetics, internal medicine, metabolism and musculoskeletal research, molecular biology, molecular genetics, nephrology, orthopaedics, pathology, pharmacology, physiology and rheumatology.

ASBMR Expectations of Authors and Presenters

Through ASBMR meetings, the Society promotes excellence in bone and mineral research. To that end, ASBMR expects that all authors and presenters affiliated with the ASBMR 2019 Annual Meeting and the 2019 Ancillary Program will provide informative and fully accurate content that reflects the highest level of scientific rigor and integrity.

ASBMR depends upon the honesty of the authors and presenters and relies on their assertions that they have had sufficient full access to the data and are convinced of its reliability.

Furthermore, ASBMR expects that:

- Authors and presenters will disclose any conflicts of interest, real or perceived.
- Authors of an abstract describing a study funded by an organization with a proprietary or financial interest must affirm that they had full access to all the data in the study. By so doing, they accept complete responsibility for the integrity of the data and the accuracy of the data analysis.
- The content of abstracts, presentations, slides and reference materials must remain the ultimate responsibility of the author(s) or faculty.
- The planning, content and execution of abstracts, speaker presentations, slides, abstracts and reference materials should be free from corporate influence, bias or control.
- All authors and presenters (invited and abstracts-based oral and poster presenters) should give a balanced view of therapeutic options by providing several treatment options, whenever possible, and by always citing the best available evidence.

In addition, ASBMR's meeting evaluations will seek feedback regarding commercial bias at ASBMR 2019 Annual Meeting sessions, including the 2019 Ancillary Program.

Disclosure Policy

The ASBMR is committed to ensuring the balance, independence, objectivity and scientific rigor of all its individually sponsored or industry-supported educational activities. Accordingly, the ASBMR adheres to the requirement set by ACCME that audiences at jointly-sponsored educational programs be informed of a presenter's (speaker, faculty, author, or planner) academic and professional affiliations, and the disclosure of the existence of any significant financial interest or other relationship a presenter or their spouse has with any proprietary entity over the past 12 months producing, marketing, re-selling or distributing health care goods or services, consumed by, or used on patients, with the exemption of non-profit or government organizations and non-health care related companies. When an unlabeled use of a commercial product, or an investigational use not yet approved for any purpose, is discussed during the presentation, it is required that presenters disclose that the product is not labeled for the use under discussion or that the product is still investigational. This policy allows the listener/attendee to be fully knowledgeable in evaluating the information being presented.

The On-Site Program book will note those speakers who have disclosed relationships, including the nature of the relationship and the associated commercial entity.

Disclosure should include any affiliation that may bias one's presentation or which, if known, could give the perception of bias. This includes relevant financial affiliations of a spouse or partner. If an affiliation exists that could represent or be perceived to represent a conflict of interest, this must be reported in the abstract submission program by listing the name of the commercial entity and selecting the potential conflict(s) by clicking in the box next to the relationship type. Disclosures will be printed in the program materials. These situations may include, but are not limited to: 13. Grant/Research Support; 14. Consultant; 15. Speakers' Bureau; 16. Major Stock Shareholder; 17. Other Financial or Material Support.

ANNUAL MEETING RESOURCE MATERIALS

Abstracts Book

The 2019 Abstracts Book is published as a supplement of the *Journal of Bone and Mineral Research (JBMR®)*. Electronic copies are available on the ASBMR website, free of charge. Printed copies are only available to those who ordered in advance.

Abstracts On-line and Itinerary Builder

Only members and registered Annual Meeting attendees are able to access the 2019 Abstracts On-line Program. This tool can be used to help you search for and review abstract presentations, as well as plan your meeting itinerary. You may access this convenient program via the ASBMR website.

ASBMR Annual Meeting Mobile App

This free smartphone application is a mobile version of the on-site program book and includes the meeting abstracts. The app also features general meeting information, exhibitor listings and detailed maps of the convention center. To download the app, go to the app store on your smartphone or mobile device and search ASBMR 2019.

Meet-the-Professor Handout Booklet

The Meet-the-Professor Handout Booklet contains all the handouts supplied by the professors in one convenient booklet. The Handout Booklet is only available in PDF format, free of charge, on the ASBMR website and in the mobile app.

ADDITIONAL RESOURCES

Special Notices and Safety Tips

- Remove your convention badge outside the meeting sites. Do not wear your badge outside or advertise that you're a visitor and not familiar with your surroundings.
- Walk with another person rather than alone. Avoid alleys, walkways between buildings, and deserted parking lots.
- Remain alert, be aware of your surroundings, and carry your handbag in front of you.

- While in your hotel room, always lock your door. Know where emergency exits are in your hotel.
- Place any valuables in a hotel safety deposit box rather than leaving them in your room or carrying them with you.
- Keep a copy of your passport and travel papers in a safe place.

ASBMR Career Center

The ASBMR Career Center Service is easily accessible year-round online. You can access the most up-to-date job and candidate listings using the ASBMR Career Center Website. Simply submit your resumé or job announcement using the online forms at **www.asbmr.org**. After your forms are submitted and payment is received, you will be able to use your self-assigned login name and password to access the Online Placement Service database anytime you wish.

Employers enrolled in the service will be entitled to display unlimited job announcements online. In addition, employers will have access to candidates' Curricula Vitae and to interview rooms.

Employers and candidates may request further information by accessing the ASBMR Career Center at www.asbmr.org.

NIH Lounge

Representatives from the U.S. National Institutes of Health (NIH) and the Center for Scientific Review (CSR) will be available in the NIH Lounge in the Discovery Hall to discuss grant proposals and ideas. Program staff from the following institutes and centers will be available to talk with you:

- National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
- National Cancer Institute (NCI)
- National Institute of Dental and Craniofacial Research (NIDCR)
- National Institute on Aging (NIA)
- National Institute of Child Health and Human Development (NICHD)
- Center for Scientific Review (CSR)

Early Stage Investigator and Diversity Member Lounge

All early stage and diverse investigator attendees are invited to drop by the Early Stage Investigator and Diversity Member Lounge located in Discovery Hall. Don't miss this opportunity to make new friends and expand your network of colleagues.

The lounge will host informal peer mentoring discussions to give you the opportunity to network with and learn from your peers: ***"Finding your Next Position: Strategies and Challenges"***

- **Saturday, September 21, 11:30AM – 12:30PM**
- **Sunday, September 22, 11:30AM – 12:30PM**

INFORMATION FOR SPEAKERS AND POSTER PRESENTERS

Speaker Ready Room

Speakers must check into the Speaker Ready Room 24 hours in advance of their presentation. At that time, speakers may review their slides. The Speaker Ready Room is located in Room W313 in the Orange County Convention Center. Review of slides must occur at least 24 hours prior to your presentation. The Speaker Ready Room will be open during the following times:

Speaker Ready Room Hours

Thursday, September 19	7:00 am – 5:00 pm
Friday, September 20	7:00 am – 5:00 pm
Saturday, September 21	7:00 am – 6:00 pm
Sunday, September 22	7:00 am – 5:30 pm
Monday, September 23	7:00 am – 2:30 pm

Poster Sessions

All poster sessions will be held in Discover Hall-Exhibit Hall West C in the Orange County Convention Center. Authors must be at their posters for the designated poster sessions on Saturday through Monday and must be available to answer questions during this period. Please adhere to the presentation times to maximize interaction with other attendees.

Presenters should mount their posters on the board bearing their assigned numbers, disregarding the letter prefix. ASBMR accepts no liability for posters or poster materials and will not adjudicate disputes between abstract presenters.

Please note that children 12 years of age and under will not be permitted in the poster area or the Discovery Hall at any time.

Presenter Check-in:

Since only poster presenters are allowed in the ASBMR Discovery Hall during the below poster set-up and dismantle hours, please go to the Poster Presenter Check-in Table at the entrance door to Discovery Hall of the Orange County Convention Center to receive a security pass. To speed the check-in process, please have your poster board number ready.

- **NOTE: Posters remaining after Poster Dismantling times will be discarded.**
- **All posters remain up through Monday, September 23 to 2:30 p.m.**

Please adhere to these scheduled times to maximize interaction for other attendees:

POSTER SESSION PRESENTATION SCHEDULE

Poster Set-Up	Posters Open	Presentation Time	Dismantle Posters
Friday, September 20 Welcome Reception and Plenary Poster Session Orange County Convention Center, Discovery Hall – Hall West C			
3:30 pm – 4:30 pm All Plenary Posters	5:30 pm–7:00 pm	5:30 pm–7:00 pm All Friday Poster Presenters Anyone with a “FRI” poster number	<u>Do not dismantle. All posters remain on the poster boards through 2:30 pm Monday, September 23</u>
Saturday, September 21 Poster Session I Orange County Convention Center, Discovery Hall – Hall West C			
7:30 am–8:30 am All Posters	9:30 am–4:30 pm	12:30 p.m. – 2:30 p.m. All Saturday Poster Presenters Anyone with a “SAT” poster number	<u>Do not dismantle. All posters remain on the poster boards through 2:30 pm Monday, September 23</u>
Sunday, September 22 Poster Session II Orange County Convention Center, Discovery Hall – Hall West C			
	9:30 am–4:30 pm	12:30 p.m. – 2:30 p.m. All Sunday Poster Presenters Anyone with a “SUN” poster number	<u>Do not dismantle. All posters remain on the poster boards through 2:30 pm Monday, September 23</u>
Monday, September 23 Poster Session III Orange County Convention Center, Discovery Hall – Hall West C			
	9:30 am–2:00 pm	12:00 p.m. – 2:00 p.m. All Monday Poster Presenters Anyone with a “MON” poster number	2:00 – 2:30 pm All posters must be removed from the boards at this time

HOW THE PROGRAM WAS SELECTED

The Annual American Society for Bone and Mineral Research (ASBMR) meeting is the premier scientific program in the field of bone, mineral and musculoskeletal research where the best science is presented by investigators from all over the world. It is a time to “come home” to meet with friends and colleagues, build new collaborations and spur creativity with novel scientific insights. With ASBMR in Orlando this year and with your engagement and participation, it is sure to be a “magical” experience for both longtime and first time attendees.

Program Committee

I was honored to be invited by **Bart Clarke MD**, President of the ASBMR, to be the inaugural Program Committee Chair. The new structure of a dedicated Program Chair is to allow the President to focus on strategic initiatives while overseeing the work of the Program Committee but not directly planning the meeting. Bart and I worked closely to identify a team of thoughtful, creative and energetic scientists as co-chairs. We were fortunate that **Dana Gaddy PhD** agreed to serve as basic chair, **Shonni Silverberg MD** agreed to serve as clinical chair and **Hans van Leeuwen PhD** agreed to serve as translational chair. This remarkable group paired with the phenomenal **Angela Belusik** and **Lauren Anderson** composed my annual meeting planning “dream team.” The Program Committee worked diligently to make this program *inclusive* in every sense of the word. In addition to balancing the clinical and basic science content of the program, we paid scrupulous attention to balance in the program with respect to gender, international, and career stage representation. We drew liberally from the members who volunteered to chair sessions and review abstracts. As a result, I am proud of this diverse, creative and cutting edge program.

Program Advisory Committee

To advise the Program Committee, we drafted a representative and inclusive Program Advisory Committee with diverse scientific expertise that was tasked with generating ideas for interesting sessions and speakers. Engaged and responsive, the members of the Program Advisory Committee were major contributors to the program. Members of the Program Advisory Committee are:

- Bo Abrahamsen, M.D.
- Tamara Alliston, Ph.D.
- Clemens Bergwitz, M.D.
- Susan Bukata, M.D.
- Geert Carmeliet, M.D., Ph.D.
- Roberto Civitelli, M.D.
- Janet Crane, M.D.
- Matthew Drake, M.D.
- Peter Ebeling, M.D.
- Claire Edwards, Ph.D.
- Florent Elefteriou, Ph.D.
- Ghada El-Hajj Fuleihan, M.D.
- David Findlay, Ph.D.
- Kurt Hankenson, D.V.M., Ph.D.
- Melissa Kacena, Ph.D.
- Marie Helene Lafage-Proust, M.D., Ph.D.
- Mary Leonard, M.D.
- Eric Orwoll, M.D.
- Alex Robling, Ph.D.

- Dolores Shoback, M.D.
- Eileen Shore, Ph.D.
- Peter Tebben, M.D.
- Andre Van Wijnen, Ph.D.
- Leanne Ward, M.D.
- Nelson Watts, M.D.

Abstract Selection

Abstract selection is one of the most important tasks of the Program Committee because abstracts provide the cutting edge science that is the “backbone” of the meeting. We strive for a process that is fair and objective. The committee relied on peer review to score the abstracts. A robust response to our call for volunteers to review abstracts allowed us to heavily draw from these independent reviewers to score, and therefore place the abstracts into oral and poster sessions. Generally, each abstract was reviewed by six reviewers. The difficult job for the Program Committee was to try to maximize the number of abstracts that could be selected for oral presentation. Of the 1,128 submitted abstracts, 14% were selected for oral presentations. The highest scoring abstracts will be presented in plenary oral sessions. **To highlight the most highly scored abstracts selected for poster presentation, we have added moderated, interactive oral poster presentation sessions** that will take place in the exhibit hall on touch screen monitors.

Similar to last year, we called for late breaking abstract submissions to ensure cutting edge research had a chance to be on the program. The Program Committee reviewed the 130 submissions and we created four late breaking concurrent abstract oral sessions (Clinical and basic/translational).

Plenary Lectures

We are very privileged that **Dr. Richard Lifton, President of Rockefeller University and Carson Family Professor and Head of the Laboratory of Human Genetics and Genomic**, will deliver the Gerald D. Aurbach Lecture entitled, “From Genes to Genomes to Biology to Health.” He has pioneered the use of genetics and genomics to understand fundamental mechanisms underlying human diseases. In his lecture, he will discuss unbiased genetic and genomic approaches in humans and the ability to establish causal relationships between rare genotypes and traits, identifying specific genes and pathways that may be manipulated for health benefit.

Dr. Laurie McCauley, the William K. and Mary Anne Najjar Professor and Dean of the School of Dentistry, and Professor in the Department of Pathology at the University of Michigan, will deliver the Louis V. Avioli Lecture on the “Anabolic Actions of Parathyroid Hormones: Genes, Cells and Models.” In her lecture, she will highlight cutting edge concepts about the mechanisms of the anabolic action of parathyroid hormone. A coalescence of the multitude of parathyroid hormone findings in bone will be presented and will serve to better inform strategy as options for osteoporotic therapeutics with anabolic and anti-resorptive actions grows.

Plenary Symposia

The golden anniversary of the development of the bisphosphonates will be celebrated with a Plenary Symposia, **50th Anniversary of Bisphosphonates: Back to the Future**. Data that highlight new properties and effects of bisphosphonates will be presented. **Dr. Graham Russell** will cover properties of bisphosphonates other than the antiresorptive properties, **Dr. Robert Coleman** will discuss the effect of bisphosphonates on malignancy and **Dr. Ilaria Bellantuona** will address new anti-aging mechanisms of bisphosphonates. The session will be capped off with a lively discussion with an extended panel.

ASBMR- European Calcified Tissue Society (ECTS) Debate

Whether Vitamin D Should Routinely be a Part of Anti-osteoporosis Treatment Regimens. **Dr. Juliet Compston**, the ASBMR representative, will argue against the motion and **Dr. Roger Bouillon**, the ECTS representative, will argue for the motion. No pressure, but, we are counting on Juliet to bring home the Golden Femur Award!

New Program Selections

Moderated Oral Posters: To highlight highly scoring posters, energize the exhibit hall and provide a forum for discussion, there will be **6 moderated, interactive oral poster presentation sessions that will take place in the exhibit hall on touch screen monitors**. There will be one clinical and one basic/translational oral poster session daily.

Encore Meet the Professors: To expand the opportunity for more access to popular MTP sessions, encore MTP sessions have been added on Saturday and Sunday.

Cutting Edge Concepts: To promote presentation of cutting edge topics that extend beyond new technologies, Cutting Edge Technologies sessions have been repurposed to include cutting edge topics, concepts and technologies. Four Cutting Edge Concept sessions will be presented including **“Novel Approaches to Reducing Fractures”**, **“The Role of Immunology in Bone Regeneration”**, **“CRISPR Beyond the Mouse”**, **“Stem Cells in the Skeleton.”**

Highlights of the 2019 ASBMR Annual Meeting: A perennial favorite, **Dr. John Bilizekian** will present the clinical overview and highlights of the meeting and, in her debut, **Dr. Lynda Bonewald** will present the basic overview and highlights of the meeting.

Challenge the Expert: Following on the great popularity and success of this session last year, two Challenge the Expert sessions will address challenging osteoporosis cases and challenging parathyroid cases. Cases are solicited from ASBMR members.

Transgender Medicine: Effect on Bone: This timely symposium explores the physiological effects of sex hormones on the skeleton and the impact of gender affirming medical therapies and cross-sex hormone therapy on peak bone mass and the skeleton.

Welcome to Orlando, welcome to the 2019 ASBMR Annual Meeting—Let the *MAGIC* begin!

Suzanne Jan de Beur, MD
Program Committee Chair

FRIDAY, SEPTEMBER 20, 2019

DAY-AT-A-GLANCE

Time/Event/Location	
6:45 AM - 7:45 AM.....	3
ASBMR Connect: Networking Breakfast with ASBMR Leaders, NIH Representatives and Senior Investigators	
<i>W308</i>	
7:00 AM - 5:00 PM.....	3
Registration Open	
<i>Valencia Ballroom Lobby</i>	
8:00 AM - 9:30 AM.....	3
Gerald D. Aurbach Lecture and Presentation of Esteemed Awards	
<i>Valencia Ballroom B-D</i>	
9:30 AM - 10:00 AM.....	3
Networking Break	
<i>Valencia Foyer</i>	
10:00 AM - 11:30 AM.....	4
Highlights of the ASBMR 2019 Annual Meeting	
<i>Valencia Ballroom B-D</i>	
11:45 AM - 1:00 PM.....	4
Cutting Edge Concepts: Novel Approaches to Reducing Fractures	
<i>W414</i>	
11:45 AM - 1:00 PM.....	5
Cutting Edge Concepts: Role of Immunology in Bone Regeneration	
<i>Valencia Ballroom A</i>	
12:00 PM - 1:00 PM.....	5
Meet the Professor Sessions	
12:00 PM - 1:15 PM.....	7
IFMRS Musculoskeletal Knowledge Portal and Artificial Intelligence in Musculoskeletal Medicine	
<i>W314</i>	
1:00 PM - 1:15 PM.....	7
Networking Break	
<i>Valencia Foyer</i>	
1:15 PM - 2:30 PM.....	7
Concurrent Orals: Musculoskeletal Disorders: Preclinical Studies	
<i>Valencia Ballroom B-D</i>	
1:15 PM - 2:30 PM.....	8
Concurrent Orals: Osteoporosis Pathophysiology	
<i>Valencia Ballroom A</i>	
1:15 PM - 2:30 PM.....	9
Concurrent Orals: Regulators of Musculoskeletal Development	
<i>W414</i>	
1:15 PM - 2:30 PM.....	10
Concurrent Orals: Skeletal Maturation & Other Metabolic Bone Disorders	
<i>W315</i>	

2:30 PM - 2:45 PM	11
Networking Break <i>Valencia Foyer</i>	
2:45 PM - 4:00 PM	12
Concurrent Orals: Bone-Lipid Connection <i>W414</i>	
2:45 PM - 4:00 PM	13
Concurrent Orals: Hormonal Regulation <i>W315</i>	
2:45 PM - 4:00 PM	14
Concurrent Orals: Microarchitecture and Mechanical Loading <i>Valencia Ballroom A</i>	
2:45 PM - 4:00 PM	15
Concurrent Orals: Rare Bone Diseases: Evaluation and Treatment <i>Valencia Ballroom B-D</i>	
4:00 PM - 4:30 PM	16
Networking Break <i>Valencia Foyer</i>	
4:15 PM - 5:30 PM	17
Basic Symposium: Exosomes and Extracellular Vesicles <i>Valencia Ballroom A</i>	
4:30 PM - 5:30 PM	17
ASBMR/ECTS Clinical Debate: Calcium and Vitamin D Should Routinely Be Part of Anti-osteoporosis Treatment Regimens <i>Valencia Ballroom B-D</i>	
5:30 PM - 7:00 PM	18
Welcome Reception and Plenary Poster Session <i>West Hall C</i>	
7:15 PM - 9:45 PM	18
Muscle and Bone Working Group <i>W304 AB</i>	
7:15 PM - 9:30 PM	18
Rare Bone Working Group <i>W304 EFG</i>	
7:15 PM - 8:30 PM	19
ASBMR Connect: Early Career Investigator Networking Happy Hour <i>Hyatt Regency Orlando, Orlando Ballroom</i>	
7:30 PM - 9:30 PM	20
Bone Turnover Markers Working Group <i>W307 B</i>	
8:00 PM - 9:30 PM	20
Women in Bone and Mineral Research Evening Networking Reception <i>Hyatt Regency Orlando, Coral Spring</i>	
8:30 PM - 9:30 PM	20
ASBMR Connect: Early Career Investigator after Hours Happy Hour	

FRIDAY, SEPTEMBER 20, 2019

ASBMR CONNECT: NETWORKING BREAKFAST WITH ASBMR LEADERS, NIH REPRESENTATIVES AND SENIOR INVESTIGATORS

*ASBMR Connect is supported in part by educational grants from
Amgen, Inc. and Ultragenyx Pharmaceutical Inc.*

6:45 am - 7:45 am

Orange County Convention Center
W308

The Networking Breakfast with ASBMR Leaders, NIH Representatives and Senior Investigators is a ticketed event that is part of the ASBMR Connect Program. ASBMR Connect requires advance registration and a separate ticket fee.

REGISTRATION OPEN

7:00 am - 5:00 pm

Orange County Convention Center
Valencia Ballroom Lobby

GERALD D. AURBACH LECTURE AND PRESENTATION OF ESTEEMED AWARDS

8:00 am - 9:30 am

Orange County Convention Center
Valencia Ballroom B-D

Join your colleagues to celebrate the following ASBMR 2019 Esteemed Award Winners: William F. Neuman Award, Paula Stern Achievement Award, Stephen M. Krane Award and Adele L. Boskey Award

8:30 am

From Genes to Genomes to Biology and Health

Richard Lifton, MD, PhD
Rockefeller University, United States
Disclosures: None

NETWORKING BREAK

9:30 am - 10:00 am

Orange County Convention Center
Valencia Foyer

HIGHLIGHTS OF THE ASBMR 2019 ANNUAL MEETING

10:00 am - 11:30 am

Orange County Convention Center
Valencia Ballroom B-D

This special session is of interest to all health professionals, first time meeting attendees, young investigators, individuals new to the field, nurses, clinical research study coordinators, physical therapists and/or those seeking guidance in navigating through the extensive ASBMR program.

Co-Chairs

Dana Gaddy, PhD

College of Veterinary Medicine, Texas A&M University, United States

Shonni Silverberg, MD

Columbia University College of Physicians & Surgeons, United States

Johannes Van Leeuwen, PhD

Erasmus University Medical Center, Netherlands

10:00 am Clinical Science Overview

John Bilezikian, MD

Columbia University College of Physicians and Surgeons, United States

Disclosures: Shire, Consultant

10:45 am Basic Science Overview

Lynda Bonewald, PhD

Indiana University School of Medicine, United States

Disclosures: None

CUTTING EDGE CONCEPTS: NOVEL APPROACHES TO REDUCING FRACTURES

11:45 am - 1:00 pm

Orange County Convention Center
W414

Co-Chairs

Elizabeth Shane, MD

Columbia University College of Physicians and Surgeons, United States

Benjamin Leder, MD

Massachusetts General Hospital Harvard Medical School, United States

11:45 am Bone Health TeleECHO

E. Michael Lewiecki, MD

New Mexico Clinical Research & Osteoporosis Center, United States

Disclosures: None

12:10 pm Implementation Science and the Treatment of Osteoporosis

Kenneth G. Saag, MD

University of Alabama at Birmingham, United States

Disclosures: Gilead, Consultant; Radius, Consultant; Amgen, Grant/research support and consultant

12:35 pm Adherence to Osteoporosis: A Conundrum of Significant Proportions

Deborah Gold, PhD

Duke University Medical Center, United States

Disclosures: Eli Lilly, Consultant; Amgen, Consultant; Radius, Consultant

CUTTING EDGE CONCEPTS: ROLE OF IMMUNOLOGY IN BONE REGENERATION

11:45 am - 1:00 pm

Orange County Convention Center
Valencia Ballroom A

Co-Chairs

Laura Calvi, MD
University of Rochester School of Medicine, United States

Melissa Kacena, PhD
Indiana University School of Medicine, United States

11:45 am Osteoimmunology and the Role of Mast Cells in Fracture Repair

Paul Martineau, MD
McGill University, Canada
Disclosures: None

12:10 pm Role of Macrophage, Immunomodulation, Stem Cells and Bone Repair

Stuart Goodman, MD, PhD
Stanford University, United States
Disclosures: None

12:35 pm Rejuvenation in Fracture Repair: It's All In the Blood

Benjamin Alman, MD
Duke University, United States
Disclosures: None

MEET THE PROFESSOR SESSIONS

12:00 pm - 1:00 pm

Orange County Convention Center

Sequential Drug Therapy for Osteoporosis

W312 AB

Felicia Cosman, MD
Columbia University College of Physicians and Surgeons, United States
*Disclosures: Amgen, Eli Lilly, Radius, Speakers Bureau;
Amgen, Eli Lilly, Radius, Tarsa/Taurus, Consultant;
Amgen, Eli Lilly, Grant/Research Support*

Meet-the-Award Winner: The Puzzle of BMP Signaling in the Skeleton

W311 A

Vicki Rosen, PhD
Harvard School of Dental Medicine, United States
Disclosures: None

Management of Bone in HIV

W311 F

Michael Yin, MD
Columbia University, United States
Disclosures: None

Professional Development: Academic and Industry Career Path Preparation

W311 H

Lorraine Fitzpatrick, MD
Radius Pharm, United States
Disclosures: Radius, Consultant

Renal Bone Disease

W312 C

Thomas Nickolas, MD, MS
Columbia University, United States
Disclosures: None

Epigenetics and Stem Cell Aging

W311 G

Andre Van Wijnen, PhD
Mayo Clinic, United States
Disclosures: None

Mechanical Loading of Bone and Anabolic Response

W311 D

Matthew Silva, Ph.D.
Washington University in St. Louis School of Medicine, United States
Disclosures: Amgen, Inc. - Major Stock Shareholder and Other Financial or Material Support

Senescent Cells and Bone Formation

W311 E

Joshua Farr, PhD
Mayo Clinic, United States
Disclosures: None

Acid-base Balance: Impact on Bone and Muscle

W311 B

Bess Dawson-Hughes, MD
Tufts University, United States
Disclosures: None

Management of Fibrous Dysplasia

W311 C

Alison Boyce, MD
National Institutes of Health, United States
Disclosures: Amgen, Inc, consultant

IFMRS MUSCULOSKELETAL KNOWLEDGE PORTAL AND ARTIFICIAL INTELLIGENCE IN MUSCULOSKELETAL MEDICINE

12:00 pm - 1:15 pm

Orange County Convention Center

W314

Making genetic data more broadly accessible and useful could have a significant impact on our ability to understand and treat musculoskeletal disease. Currently, there are barriers hindering the translation of these data into actionable knowledge. Learn more about the International Federation of Musculoskeletal Research Societies (IFMRS) Musculoskeletal Knowledge Portal currently in development that will aggregate and integrate data and results from large-scale human genetic association studies of musculoskeletal diseases and make them available for query through a public web resource that protects individual level data or patient privacy. Artificial intelligence (AI) research within medicine is growing rapidly. This session will also present the latest advances in AI technology in musculoskeletal medicine.

12:00 pm IFMRS Musculoskeletal Knowledge Portal

Douglas Kiel, MD, MPH

Hinda and Arthur Marcus Institute for Aging Research Hebrew SeniorLife, United States

Disclosures: None

Noel Burt, PhD

Broad Institute of MIT & Harvard, United States

*Disclosures: None***12:40 pm Artificial Intelligence in Musculoskeletal Medicine**

Costas Bekas, PhD

IBM Research, Switzerland

*Disclosures: None***1:00 pm Discussion**

NETWORKING BREAK

1:00 pm - 1:15 pm

Orange County Convention Center

Valencia Foyer

CONCURRENT ORALS: MUSCULOSKELETAL DISORDERS: PRECLINICAL STUDIES

1:15 pm - 2:30 pm

Orange County Convention Center

Valencia Ballroom B-D

Moderators

Abhishek Chandra, PhD

Mayo Clinic, United States

Martine Cohen-Solal, M.D., Ph.D.

Centre Viggo Petersen, France

1:15 pm FGF23 in crosstalk of bone, kidney, and hematopoiesis in sickle cell bone disease**1001***Liping Xiao¹, Sara Tavakoli¹, Donyell Williams¹, Marja Hurley¹. ¹UConn Health, United States*Disclosures: Liping Xiao, None***1:30 pm The Hajdu Cheney Mutation Sensitizes Mice to the Osteolytic Actions of TNF α** **1002***Jungeun Yu¹, Ernesto Canalis¹. ¹UConn Health, United States*Disclosures: Jungeun Yu, None*

- 1:45 pm**
1003 **Guanylyl cyclase-B activation rescues achondroplasia in mice**
*Jerid Robinson¹, Lincoln Potter¹, Siu-Pok Yee², Yuan-Tsong Chen³, Yi-Ching Li³.
¹University of Minnesota, United States, ²University of Connecticut Health Center, United States, ³Academia Sinica, Taiwan, Province of China
Disclosures: Jerid Robinson, None
- 2:00 pm**
1004 **The Fibrodysplasia Ossificans Progressiva-causing ACVR1[R206H] and ACVR1[R258G] mutations exhibit distinct skeletal phenotypes in neonatal mice.**
*John Lees-Shepard¹, Lily Huang¹, Lili Wang¹, Xialing Wen¹, Nanditha Das¹, Qian Zhang¹, Christopher Schoenherr¹, Vincent Idone¹, Kalyan Nannuru¹, Aris Economides¹, Andrew Murphy¹, Sarah Hatsell¹. ¹Regeneron Pharmaceuticals, United States
Disclosures: John Lees-Shepard, Regeneron Pharmaceuticals, Other Financial or Material Support
- 2:15 pm**
1005 **ASBMR 2019 Annual Meeting Young Investigator Award**
Unraveling the mystery behind bone-cartilage crosstalk: Osteoclast-derived exosomal microRNAs deprive the resistance of cartilage to matrix degeneration, angiogenesis and innervation in osteoarthritis
*Jin Liu¹, Lei Dang¹, Xiaohao Wu¹, Jun Lu¹, Huarui Zhang¹, Chuanxin Zhong¹, Aiping Lyu¹, Ge Zhang¹, Chelsea H. DU², Joseph Zhai³. ¹Institute for Advancing Translational Medicine in Bone & Joint Diseases, Hong Kong Baptist University, Hong Kong SAR, China, China, ²Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Hong Kong SAR, China, China, ³Del Norte High School, San Diego, CA, USA, United States
Disclosures: Jin Liu, None

CONCURRENT ORALS: OSTEOPOROSIS PATHOPHYSIOLOGY

1:15 pm - 2:30 pm

**Orange County Convention Center
Valencia Ballroom A**

Moderators

Julia (Julianna) Barsony, MD, PhD
Georgetown University Medical Center, United States

Thomas Andersen, PhD
University of Southern Denmark, Denmark

- 1:15 pm**
1006 **ASBMR 2019 Most Outstanding Translational Abstract**
T cell-derived Dkk1 controls bone homeostasis and contributes to the pathogenesis of estrogen deficiency-induced bone loss
*Juliane Colditz¹, Sylvia Thiele¹, Ulrike Baschant¹, Lorenz Hofbauer¹, Martina Rauner¹, Christof Niehrs². ¹TU Dresden, Germany, ²Uni Heidelberg, Germany
Disclosures: Juliane Colditz, None
- 1:30 pm**
1007 **ASBMR 2019 Annual Meeting Young Investigator Award**
Glucocorticoids Induce Blood Vessel Senescence in Growing Long Bone
*Xiaonan Liu¹, Yu Chai¹, Weiping Su¹, Janet L Crane¹, Xu Cao¹, Mei Wan¹, Alena Shen².
¹Johns Hopkins University, United States, ²River Hill High School, United States
Disclosures: Xiaonan Liu, None
- 1:45 pm**
1008 **Long Interspersed Element-1 (LINE-1) with retroposon activity is necessary for osteoblast differentiation in vitro and is altered in postmenopausal osteoporotic bone**
*Arianna Mangiavacchi¹, Nazerke Atinbayeva¹, Valerio Orlando¹, Sjur Reppe², Kaare M Gautvik³. ¹KAUST, Saudi Arabia, ²Oslo University Hospital, Norway, ³Lovisenberg Diaconal Hospital, Norway
Disclosures: Arianna Mangiavacchi, None

- 2:00 pm
1009** **Sex Differences in Systemic Bone and Muscle Loss After Fracture in Mice**
*Blaine Christiansen¹, Manali Paralkar¹, Benjamin Osipov¹, Priscilla Tjandra¹, Armaun Emami¹, Henning Langer², Keith Baar². ¹University of California Davis Health, Department of Orthopaedic Surgery, United States, ²University of California Davis, Department of Neurobiology, Physiology, and Behavior, United States
Disclosures: Blaine Christiansen, None
- 2:15 pm
1010** **LIGHT/TNFSF14 is involved in estrogen deficiency-induced bone loss**
*Giacomina Brunetti¹, Silvia Colucci¹, Giuseppina Storlino², Graziana Colaianni², Maria Grano², Janne E Reseland³, Monica Celi⁴, Umberto Tarantino⁵, Giovanni Passeri⁶, Carl F Ware⁷. ¹Department of Basic and Medical Sciences, Neurosciences and Sense Organs, Section of Human Anatomy and Histology, University of Bari, Italy, ²Department of Emergency and Organ Transplantation, Section of Human Anatomy and Histology, University of Bari, Italy, ³Department of Biomaterials, Institute for Clinical Dentistry, University of Oslo, Norway, ⁴Department of Orthopedics and Traumatology, Tor Vergata University of Rome, Italy, ⁵Tor Vergata University of Rome, Italy, ⁶Department of Clinical and Experimental Medicine, University of Parma, Italy, ⁷Infectious and Inflammatory Disease Center, Sanford Burnham Prebys Medical Discovery Institute, United States
Disclosures: Giacomina Brunetti, None

CONCURRENT ORALS: REGULATORS OF MUSCULOSKELETAL DEVELOPMENT

1:15 pm - 2:30 pm

Orange County Convention Center

W414

Moderators

Lamya Karim, PhD

University of Massachusetts Dartmouth, United States

Robert Blank, MD, PhD

Medical College of Wisconsin, Division of Endocrinology, United States

- 1:15 pm
1011** **Loss of Glut1 leads to intervertebral disc degeneration through upregulation of Hedgehog pathway**
*Jun Ying¹, Jie Shen¹, Cuicui Wang¹, Regis Okeefe¹, Peijian Tong². ¹Department of Orthopaedic Surgery, Washington University, United States, ²Department of Orthopaedic Surgery, the First Affiliated Hospital of Zhejiang Chinese Medical University, China
Disclosures: Jun Ying, None
- 1:30 pm
1012** **Heterozygous Deletion of Fzd2 Leads to Decreased Craniofacial Mineralization**
*Megan Michalski¹, Alex Zhong¹, Mitchell McDonald¹, Gabrielle Foxa¹, Cassandra Diegel¹, Bart Williams¹. ¹Van Andel Research Institute, United States
Disclosures: Megan Michalski, None
- 1:45 pm
1013** **Investigation of Wnt Receptor Fzd2 in Mouse Limb Development**
*Zhendong Zhong¹, Cassandra Diegel¹, Megan Michalski¹, Mitchell McDonald¹, Gabrielle Foxa¹, Bart Williams¹. ¹Van Andel Institute, United States
Disclosures: Zhendong Zhong, None

**2:00 pm
1014**

Cntnap4 is a Novel Key Regulator for Development and Growth of Cranial Vault and Base

*Pin Ha¹, Xiangyou Luo¹, Chenshuang Li¹, Eric Chen¹, Zhong Zheng¹, Kang Ting¹, Xinli Zhang¹, Samantha Lee², Alan Chien³, Chia Soo⁴. ¹Division of Growth and Development, School of Dentistry, University of California, Los Angeles, United States, ²Department of Ecology and Evolutionary Biology, University of California, Los Angeles, Los Angeles, United States, ³Department of Microbiology, Immunology and Molecular Genetics, University of California, Los Angeles, United States, ⁴Department of Orthopaedic Surgery and the Orthopaedic Hospital Research Center, University of California, Los Angeles, United States

Disclosures: Pin Ha, None

**2:15 pm
1015**

Longitudinal genome-wide association study implicates novel loci and candidate genes for pediatric bone accrual

*Diana Cousminer¹, Andrew Wells¹, Yadav Wagley², Kurt Hankenson², Gregory Way³, Casey Greene³, Benjamin Voight³, Shana McCormack⁴, Alessandra Ches⁴, Jonathan Mitchell⁴, Joseph Kindler⁴, Matthew Johnson⁴, James Pippin⁴, Hakon Hakonarson⁴, Babette Zemel⁴, Struan Grant⁴, Heidi Kalkwarf⁵, Joan Lappe⁶, Vicente Gilsanz⁷, John Shepherd⁸, Sharon Oberfield⁹. ¹Childrens Hospital of Philadelphia, United States, ²University of Michigan, United States, ³University of Pennsylvania, United States, ⁴Children's Hospital of Philadelphia, United States, ⁵Cincinnati Children's Hospital Medical Center, United States, ⁶Creighton University, United States, ⁷Children's Hospital Los Angeles, United States, ⁸University of Hawaii, United States, ⁹Columbia University Medical Center, United States

Disclosures: Diana Cousminer, None

**CONCURRENT ORALS: SKELETAL MATURATION & OTHER
METABOLIC BONE DISORDERS**

1:15 pm - 2:30 pm

**Orange County Convention Center
W315**

Moderators

Aliya Khan, MD
McMaster University, Canada

Peter Tebben, MD
Mayo Clinic, United States

**1:15 pm
1016**

Longitudinal Development of Peak Bone Mass in White U.S. Females: A View through 3 Maturational Lenses

*Jodi Dowthwaite¹, Stephanie Kliethermes², Tamara Scerpella², Tim Cole³. ¹Upstate Medical University; Binghamton University, United States, ²University of Wisconsin - Madison, United States, ³University College London, United Kingdom

Disclosures: Jodi Dowthwaite, None

**1:30 pm
1017**

Predictable Changes in Skeletal Maturation: An Assessment of Individual Trajectories

*Melanie Boeyer¹, Emily Leary¹, Richard Sherwood¹, Dana Duren¹. ¹University of Missouri - Columbia, United States

Disclosures: Melanie Boeyer, None

- 1:45 pm
1018** **ASBMR 2019 Annual Meeting Young Investigator Award**
Effect of Parathyroidectomy on Quality of Life: 10 Year Data from a Prospective Randomized Control Trial on Primary Hyperparathyroidism (the SIPH-study)
*Mikkel Pretorius¹, Karolina Lundstam², Mikael Hellstöm², Ansgar Heck³, Kristin Godang³, Jens Bollerslev³, Kjersti Ringvoll Normann⁴. ¹Section of Specialized Endocrinology, Oslo University Hospital, Norway, ²Department of Radiology, Institute of Clinical Sciences, The Sahlgrenska Academy at the University of Gothenburg, Sahlgrenska University Hospital, Sweden, ³Section of Specialized Endocrinology, Oslo University Hospital, Norway, ⁴Faculty of Medicine, University of Oslo, Norway
Disclosures: Mikkel Pretorius, None
- 2:00 pm
1019** **Six Years' Experience With Recombinant Human Parathyroid Hormone (1-84) in Chronic Hypoparathyroidism: Renal and Skeletal Endpoints and Safety From the RACE Study**
*John P. Bilezikian¹, Henry Bone², Bart L. Clarke³, Douglas Denham⁴, Hak-Myung Lee⁵, Nicole Sherry⁵, Michael A. Levine⁶, Michael Mannstadt⁷, Munro Peacock⁸, Jeffrey Rothman⁹, Dolores M. Shoback¹⁰, Tamara J. Vokes¹¹, Mark L. Warren¹², Nelson B. Watts¹³. ¹Division of Endocrinology, College of Physicians and Surgeons, Columbia University, United States, ²Michigan Bone and Mineral Clinic, PC, United States, ³Mayo Clinic Division of Endocrinology, Diabetes, Metabolism, and Nutrition, United States, ⁴Clinical Trials of Texas, Inc., United States, ⁵Shire Human Genetic Therapies, Inc., a member of the Takeda group of companies, United States, ⁶Division of Endocrinology and Diabetes and Center for Bone Health, Children's Hospital of Philadelphia, United States, ⁷Endocrine Unit, Massachusetts General Hospital and Harvard Medical School, United States, ⁸Department of Medicine, Division of Endocrinology, Indiana University School of Medicine, United States, ⁹University Physicians Group – Research Division, United States, ¹⁰Endocrine Research Unit, San Francisco Veterans Affairs Medical Center, Department of Medicine, University of California, United States, ¹¹Section of Endocrinology, University of Chicago Medicine, United States, ¹²Endocrinology and Metabolism, Physicians East, PA, United States, ¹³Osteoporosis and Bone Health Services, Mercy Health, United States
Disclosures: John P. Bilezikian, Shire, a member of the Takeda group of companies, Grant/Research Support, Shire, a member of the Takeda group of companies, Consultant, Shire, a member of the Takeda group of companies, Other Financial or Material Support
- 2:15 pm
1020** **Aetiology, pathogenesis, and treatment of hypercalcemia after cosmetic paraffin oil injections**
*Martin Blomberg Jensen¹, Christine Hjort Andreassen¹, mette lorenzen¹, Anne Jørgensen¹, Ebbe Eldrup², Simone Theilade². ¹Rigshospitalet, Denmark, ²herlev hospital, Denmark
Disclosures: Martin Blomberg Jensen, None

NETWORKING BREAK

2:30 pm - 2:45 pm

**Orange County Convention Center
Valencia Foyer**

CONCURRENT ORALS: BONE-LIPID CONNECTION

2:45 pm - 4:00 pm

Orange County Convention Center

W414

Moderators

Gustavo Duque, MD, PhD

University of Melbourne, Australia

Elena Ambrogini, MD, PhD

Central Arkansas VA Healthcare System, Univ of Arkansas for Medical Sciences, United States

**2:45 pm
1021**

Shared autonomic pathways connect bone marrow and peripheral adipose tissues across the central neuraxis

*Natalie Wee¹, Madelyn Lorenz², Yusuf Bekirov², Erica Scheller², Mark Jacquin³.

¹Department of Reconstructive Sciences, UConn Health, United States, ²Department of Medicine, Division of Bone and Mineral Diseases, Washington University School of Medicine, United States, ³Department of Neurology, Washington University School of Medicine, United States

Disclosures: Natalie Wee, None

**3:00 pm
1022**

Deletion of SREBF1, a functional bone-muscle pleiotropic gene, alters BMD and lipid signaling in zebrafish

*Chen Shochat¹, David Karasik¹, Zhiying Wang², Chenglin Mo², Jian Huang³, Marco Brotto⁴. ¹Azrieli Faculty of Medicine, Bar-Ilan University, Israel, ²College of Nursing&Health Innovation, University of Texas at Arlington, United States, ³College of Nursing & Health Innovation, University of Texas at Arlington, United States, ⁴College of Nursing&Health Innovation, University of Texas at Arlington, United States

Disclosures: Chen Shochat, None

**3:15 pm
1023**

Bone-derived sclerostin regulates Pdgfra+ adipoprogenitor cell differentiation.

*Soohyun Kim¹, Lei Wang¹, Mei Wan¹, Ryan Riddle¹, Hao Da². ¹Johns Hopkins University School of Medicine, United States, ²Johns Hopkins University, United States

Disclosures: Soohyun Kim, None

**3:30 pm
1024**

Osteoprogenitor glucocorticoid receptor function regulates bone maintenance, marrow fat accumulation, and bone-muscle crosstalk during aging

*Jessica Pierce¹, Kanglun Yu¹, Rachel Roberts¹, Vivek Choudhary¹, Wendy Bollag¹, Xingming Shi¹, Carlos Isales¹, William Hill², Mark Hamrick³, Meghan McGee-Lawrence³. ¹Augusta University, United States, ²Medical University of South Carolina, United States, ³Medical College of Georgia, Augusta University, United States

Disclosures: Jessica Pierce, None

**3:45 pm
1025**

Deletion of PPAR γ in Mesenchymal Lineage Cells Protects Against Aging-Induced Cortical but Not Trabecular Bone Loss in Mice

*Jay Cao¹, Kehong Ding², Raysa Rosario², Yun Su², Yonggang Bao², Meghan McGee Lawrence², Mark Hamrick², Carlos Isales², Xing-Ming Shi³. ¹USDA ARS Grand Forks Human Nutrition Research Center, United States, ²Augusta University, United States, ³Medical College of Georgia, United States

Disclosures: Jay Cao, None

CONCURRENT ORALS: HORMONAL REGULATION

2:45 pm - 4:00 pm**Orange County Convention Center
W315****Moderators**

Fadil Hannan, PhD
University of Oxford, United Kingdom

Beate Lanske, PhD
Radius Health, Inc., United States

**2:45 pm
1026****Glucocorticoids disrupt skeletal angiogenesis through NF- κ B transrepression of preosteoclast PDGF-BB transcription in young mice**

*Yi Peng¹, Janet Crane¹, Xu Cao¹, Yusheng Li², Jianxi Zhu², Shan Lv³, Song Wu⁴. ¹Johns Hopkins University School of Medicine, United States, ²Xiangya Hospital of Central South University, China, ³The First Hospital Affiliated to Nanjing Medical University, China, ⁴The Third Xiangya Hospital of Central South University, China
Disclosures: Yi Peng, None

**3:00 pm
1027****Parathyroid Hormone augments EphrinB2 derived from OCL via increased RANKL expression in OB in Osteoclast/Osteoblast Coupling.**

*Yuki Nagata¹, Yasuo Imanishi¹, Daichi Miyaoka¹, Noriyuki Hayashi¹, Masanori Emoto¹, Masaaki Inaba¹. ¹Osaka City University Graduate School of Medicine, Department of Metabolism, Endocrinology, and Molecular Medicine, Japan
Disclosures: Yuki Nagata, None

**3:15 pm
1028****ASBMR 2019 Annual Meeting Young Investigator Award****Structural Basis of Activation and Sustained Signaling by the PTH Receptor**

*Ieva Sutkeviciute¹, Lisa J. Clark¹, Jean-Pierre Vilardaga¹, Thomas J. Gardella², Ming-Wei Wang³, Yan Zhang⁴, H. Eric Xu⁵. ¹Laboratory for GPCR Biology, Department of Pharmacology and Chemical Biology, School of Medicine, University of Pittsburgh, United States, ²Endocrine Unit, Massachusetts General Hospital, United States, ³The CAS Key Laboratory of Receptor Research, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, China, ⁴Department of Biophysics, and Department of Pathology of Sir Run Run Shaw Hospital, Zhejiang University School of Medicine, China, ⁵Center for Cancer and Cell Biology, Innovation and Integration Program, Van Andel Research Institute, United States
Disclosures: Ieva Sutkeviciute, None

**3:30 pm
1029****Molecular concordance between the skeletal effects of PTH1RH223R overexpression and deletion of salt inducible kinases 2 and 3**

*Christian Castro¹, Maureen Omeara¹, Janaina da Silva Martins¹, Daniel Brooks¹, Michael Bruce¹, Mary Bouxsein¹, Shigeki Nishimori¹, Henry Kronenberg¹, Harald Jueppner¹, Thomas Gardella¹, Marc Wein¹, Hiroshi Noda², Murat Cetinbas³, Ruslan Sadreyev³, Ugur Ayturk⁴, Marc Foretz⁵. ¹MGH Endocrine Unit, United States, ²Chugai Pharmaceuticals, Japan, ³MGH Department of Molecular Biology, United States, ⁴Hospital for Special Surgery, United States, ⁵Institut Cochin, Inserm, France
Disclosures: Christian Castro, None

3:45 pm
1030

Vitamin D receptor signaling prevents the adverse actions of glucocorticoid excess in bone, skeletal muscle, and the heart, by interfering with the atrogene pathway.

*Amy Y Sato¹, Meloney Cregor¹, David L Halladay¹, Karyn A Esser², Munro Peacock³, Monte S Willis⁴, Teresita M Bellido⁵. ¹Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, ²Department of Physiology and Functional Genomics, University of Florida College of Medicine, United States, ³Department of Medicine, Division of Endocrinology, Indiana University School of Medicine, United States, ⁴Indiana Center for Musculoskeletal Health, University of Indiana School of Medicine, United States, ⁵Department of Anatomy and Cell Biology; Department of Medicine, Division of Endocrinology, Indiana University School of Medicine; Roudebush Veterans Administration Medical Center, United States

Disclosures: Amy Y Sato, None

CONCURRENT ORALS: MICROARCHITECTURE AND MECHANICAL LOADING

2:45 pm - 4:00 pm

Orange County Convention Center
Valencia Ballroom A

Moderators

Julia Hum, PhD

Marian University, United States

Jose Ferretti, PhD

National University of Rosario,

2:45 pm
1031

Fatigue Failure of Cancellous Bone is Sensitive to an Unexpected Aspect of Microarchitecture: A Study with Bone Biomechanics and 3D Printing

*Christopher Hernandez¹, Ashley Torres¹, Cameron Aubin¹, Floor Lambers¹, Marysol Luna¹, Adwait Trikanad², Pablo Zavattieri², Clare Rinnac³. ¹Cornell University, United States, ²Purdue University, United States, ³Case Western Reserve University, United States

Disclosures: Christopher Hernandez, None

3:00 pm
1032

Differential Transcriptomic Response to Unloading in Bones from Diversity Outbred Mouse Founder Strains

*Michael Friedman¹, Yue Zhang¹, Camilla Reina Maroni¹, Henry Donahue¹, Abdullah Abood², Charles Farber². ¹Virginia Commonwealth University, United States, ²University of Virginia, United States

Disclosures: Michael Friedman, None

3:15 pm
1033

Transcription differs between cancellous and cortical bone with location and time after in vivo tibial loading

*Carolyn Chlebek¹, F. Patrick Ross², Marjolein van der Meulen³. ¹Cornell University, United States, ²Hospital for Special Surgery, United States, ³Cornell University & Hospital for Special Surgery, United States

Disclosures: Carolyn Chlebek, None

3:30 pm
1034

Osteoclast-Derived Igf1 Is Required for Formation of Pagetic Bone Lesions In Vivo

*Kazuaki Miyagawa¹, Noriyoshi Kurihara¹, Jolene J. Windle², G. David Roodman³. ¹Medicine/Hematology-Oncology; Indiana University, United States, ²Human and Molecular Genetics, Virginia Commonwealth University, United States, ³Medicine/Hematology-Oncology; Indiana University, Roudebush VA Medical Center, United States

Disclosures: Kazuaki Miyagawa, None

3:45 pm
1035

ASBMR 2019 Annual Meeting Young Investigator Award

Lrp4 mediates bone mass and mechanotransduction through interaction with sclerostin in vivo

*Whitney Bullock¹, April Hoggatt¹, Daniel Horan¹, Andrew Elmendorf¹, Amy Sato¹, Teresita Bellido¹, Fredrick Pavalko¹, Alexander Robling¹, Gabriela Loots². ¹Indiana University, United States, ²Lawrence Livermore National Laboratory, United States

Disclosures: Whitney Bullock, None

CONCURRENT ORALS: RARE BONE DISEASES: EVALUATION AND TREATMENT

2:45 pm - 4:00 pm

Orange County Convention Center
Valencia Ballroom B-D

Moderators

Michael Econs, MD

Indiana University School of Medicine, United States

Rachel Gafni, MD

National Institutes of Health, United States

2:45 pm
1036

Burosumab resulted in better clinical outcomes than continuation with conventional therapy in younger and older children with X-linked hypophosphatemia

*Erik Imel¹, Michael P. Whyte², Craig Munns³, Anthony A. Portale⁴, Leanne Ward⁵, Ola Nilsson⁶, Jill H. Simmons⁷, Raja Padidela⁸, Noriyuki Namba⁹, Hae Il Cheong¹⁰, Wolfgang Högl¹¹, Meng Mao¹², Chao-Yin Chen¹², Alison Skrinar¹², Javier San Martin¹², Francis Glorieux¹³. ¹Indiana University School of Medicine, United States, ²Shriners Hospitals for Children, United States, ³The Children's Hospital at Westmead, Australia, ⁴University of California, San Francisco, United States, ⁵University of Ottawa, Canada, ⁶Karolinska Institutet, Sweden, ⁷Vanderbilt University School of Medicine, United States, ⁸Royal Manchester Children's Hospital, United Kingdom, ⁹Osaka Hospital, Japan Community, Healthcare Organization and Osaka University Graduate School of Medicine, Japan, ¹⁰Seoul National University Children's Hospital, Republic of Korea, ¹¹Johannes Kepler University Linz, Austria, ¹²Ultragenyx Pharmaceutical Inc., United States, ¹³Shriners Hospitals for Children-Canada, McGill University, Canada

Disclosures: Erik Imel, Ultragenyx Pharmaceutical Inc., Grant/Research Support, Ultragenyx Pharmaceutical Inc., Consultant, Ultragenyx Pharmaceutical Inc., Other Financial or Material Support

3:00 pm
1037

Continued Improvement in Clinical Outcomes with Long-term Burosumab, a Fully Human Anti-FGF23 Monoclonal Antibody: Results from a 3-year, Phase 2, Clinical Trial in Children with X-Linked Hypophosphatemia (XLH)

*Thomas O. Carpenter¹, Wolfgang Högl², Erik A. Imel³, Anthony A. Portale⁴, Annemieke Boot⁵, Agnès Linglart⁶, Raja Padidela⁷, William Van't Hoff⁸, Meng Mao⁹, Alison Skrinar⁹, Mary Scott Roberts⁹, Javier San Martin⁹, Michael P. Whyte¹⁰. ¹Yale University School of Medicine, United States, ²Johannes Kepler University Linz, Austria, ³Indiana University School of Medicine, United States, ⁴University of California, San Francisco, United States, ⁵University of Groningen, Netherlands, ⁶APHU Hôpital Bicêtre Paris Sud, France, ⁷Royal Manchester Children's Hospital, United Kingdom, ⁸Great Ormond Street Hospital, United Kingdom, ⁹Ultragenyx Pharmaceutical Inc., United States, ¹⁰Shriners Hospitals for Children and Washington University School of Medicine, United States

Disclosures: Thomas O. Carpenter, Nutricia, Consultant, Ultragenyx Pharmaceutical Inc., Grant/Research Support, Inozyme, Consultant, Clementia, Consultant, Amgen, Grant/Research Support, Nutricia, Grant/Research Support, Ultragenyx Pharmaceutical Inc., Consultant

**3:15 pm
1038**

ASBMR 2019 Annual Meeting Young Investigator Award
18F-NaF PET/CT in Forty-four Patients with Fibrodysplasia Ossificans Progressiva Uncovers Highly-prevalent, Multifocal, Metabolically-Active Heterotopic Ossification, Largely Disassociated from Flare-ups

*Esmée Botman¹, J. Coen Netelenbos¹, E. Marelise W. Eekhoff¹, Eduardo Forleo Neto², Gary Herman², Scott J. Mellis², Melissa Simek-Lemos², Andrew J. Rankin², Dinko González Trotter², Pieter G.H.M. Raijmakers³, Maqsood Yaqub³, Adriaan A. Lammertsma³, Aris N. Economides⁴, Eduardo Forleo Neto⁵, Gary Herman⁵, Scott J. Mellis⁵, Melissa Simek-Lemos⁵, Andrew J. Rankin⁵, Dinko González Trotter⁵. ¹Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Internal Medicine section Endocrinology, Amsterdam Bone Center, Amsterdam Movement Sciences, the Netherlands, Netherlands, ²Regeneron Pharmaceuticals, Inc., New York, United States of America, United States, ³Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Radiology and Nuclear Medicine, the Netherlands, Netherlands, ⁴Regeneron Pharmaceuticals, Inc., New York, United States of America, United States, ⁵Regeneron Pharmaceuticals, Inc., New York, United States of America, Netherlands

Disclosures: Esmée Botman, None

**3:30 pm
1039**

ASBMR 2019 Fund for Research and Education Young Investigator Award
Evolution of early Paget's disease in SQSTM1 mutation carriers: baseline analysis of the ZiPP study

*Owen Cronin¹, Deepak Subedi¹, Laura Forsyth¹, Kirsteen Goodman¹, Steff Lewis¹, Catriona Keerie¹, Allan Walker¹, Mary Porteous¹, Stuart Ralston¹, Roseanne Cetnarskyj², Ranganath Lakshminarayan³, Peter Selby⁴, Geeta Hampson⁵, Rama Chandra⁶, Shu Ho⁷, Jon Tobias⁸, Stephen Young-MIn⁹, Malachi McKenna¹⁰, Rachel Crowley¹⁰, William Fraser¹¹, Jonathan Tang¹¹, Luigi Gennari¹², Rannuccio Nuti¹², Maria Luisa Brandi¹³, Javier Del Pino Montes¹⁴, Jean-Pierre Devogelaer¹⁵, Anna Durnez¹⁶, Giancarlo Isaia¹⁷, Marco di Stefano¹⁷, Nuria Guanabens¹⁸, Josep Blanch¹⁹, Markus Seibel²⁰, John Walsh²¹, Mark Kotowitz²², Geoffrey Nicholson²³, Emma Duncan²³, Gabor Major²⁴, Anne Horne²⁵, Nigel Gilchrist²⁶. ¹University of Edinburgh, United Kingdom, ²University of Dundee, United Kingdom, ³University of Liverpool, United Kingdom, ⁴University of Manchester, United Kingdom, ⁵St Thomas Hospital, United Kingdom, ⁶King's College Hospital, United Kingdom, ⁷Robert Jones and Agnes Hunt Orthopaedic Hospital, United Kingdom, ⁸University of Bristol, United Kingdom, ⁹Queen Alexandra Hospital, United Kingdom, ¹⁰University College Dublin, Ireland, ¹¹University of East Anglia, United Kingdom, ¹²University of Siena, Italy, ¹³University Hospital of Careggi, Italy, ¹⁴University of Salamanca, Spain, ¹⁵Clinic Universitaire Saint-Luc, Belgium, ¹⁶Clinic Universitaires Saint-Luc, Belgium, ¹⁷University of Turin, Italy, ¹⁸University of Barcelona, Spain, ¹⁹Hospital del Mar, Spain, ²⁰Concord Hospital, Australia, ²¹University of Western Australia, Australia, ²²Barwon Health, Australia, ²³University of Queensland, Australia, ²⁴Royal Newcastle Centre, Australia, ²⁵University of Auckland, New Zealand, ²⁶Princess Margaret Hospital, Australia

Disclosures: Owen Cronin, None

**3:45 pm
1040**

Setrusumab for the Treatment of Adults with Osteogenesis Imperfecta: 6-Month Data from the Open-Label Treatment Arm of the Phase 2b ASTEROID Study

*Bettina M Willie¹, Elizabeth A Zimmermann¹, Francis H Glorieux¹, Ian Hodgson², Anthony Hall², Alistair MacKinnon², Muhammed K Javaid³, Jay Shapiro⁴. ¹Shriners Hospital for Children, Canada, ²Mereo BioPharma Group plc, United Kingdom, ³Medical Sciences Division, University of Oxford, United Kingdom, ⁴Kennedy Krieger Institute, United States

Disclosures: Bettina M Willie, Mereo BioPharma, Grant/Research Support, Mereo BioPharma, Novartis, Amgen, Other Financial or Material Support, Mereo BioPharma, Consultant

NETWORKING BREAK

4:00 pm - 4:30 pm

**Orange County Convention Center
Valencia Foyer**

BASIC SYMPOSIUM: EXOSOMES AND EXTRACELLULAR VESICLES
4:15 pm - 5:30 pm
**Orange County Convention Center
Valencia Ballroom A**

Co-Chairs

Anna Teti, PhD
University of L'Aquila, Italy

Sarah Dallas, PhD
University of Missouri - Kansas City, United States

4:15 pm Therapeutic and Diagnostic Options

Jan Lötvald, PhD
University of Gothenburg, Sweden
Disclosures: None

4:40 pm Heparanase Regulation of Exosome Biogenesis and Function in Cancer

Ralph Sanderson, PhD
University of Alabama School of Medicine, United States
Disclosures: None

5:05 pm Extracellular Vesicles in the Bone Context

Jeroen van de Peppel, PhD
Erasmus Medical Center, Netherlands
Disclosures: None

**ASBMR/ECTS CLINICAL DEBATE: CALCIUM AND VITAMIN
D SHOULD ROUTINELY BE PART OF ANTI-OSTEOPOROSIS
TREATMENT REGIMENS**

4:30 pm - 5:30 pm
**Orange County Convention Center
Valencia Ballroom B-D**

Co-Chairs

Ian Reid, MD
University of Auckland, New Zealand

Claus-C Glueer, PhD
Christian Albrechts Universität zu Kiel, Germany

4:30 pm For the Motion (ECTS)

Roger Bouillon, MD, PhD
Katholieke Universiteit Leuven, Belgium
Disclosures: None

5:00 pm Against the Motion (ASBMR)

Juliet Compston, MD
University of Cambridge School of Clinical Medicine, United Kingdom
Disclosures: None

WELCOME RECEPTION AND PLENARY POSTER SESSION

5:30 pm - 7:00 pm

Orange County Convention Center
West Hall C

Attendees and registered guests are invited to celebrate the ASBMR 2019 Annual Meeting during our Welcome Reception and Plenary Poster Session in the ASBMR Discovery Hall. Simply display your badge for admission. Guests may purchase a badge for \$50 at the ASBMR Registration Counter for entrance to the Welcome Reception.

For a full listing of Plenary Posters, please refer to the Plenary Poster section starting on page 75.

MUSCLE AND BONE WORKING GROUP

Supported by educational grants from Novotec Medical and Stratec Medizintechnik

7:15 pm - 9:45 pm

Orange County Convention Center
W304 AB

- | | |
|----------------|---|
| 7:30 pm | Opening Remarks and Dinner |
| 8:00 pm | Overcoming challenges of analyzing musculoskeletal pQCT images of limbs with severe, chronic unloading
*Vanessa Sherk, PhD. University of Colorado - Anschutz Medical Campus, United States |
| 8:30 pm | Adaptive bone formation during UK military training
*Julie Greeves, OBE, PhD. Army Personnel Research Capability (APRC), UK |
| 9:00 pm | Relevance of Muscle Function Assessment in Sarcopenia Diagnostics
*Rainer Rawer, DR. Ing., Novotec Medical, Germany |
| 9:30 pm | Concluding Remarks |
-

RARE BONE WORKING GROUP

*Supported by The Rare Bone Disease Alliance and
unrestricted educational grants from Alexion Pharmaceuticals, Clementia, an IPSEN Company,
Regeneron Pharmaceuticals and Ultragenyx Pharmaceutical, Inc.*

7:15 pm - 9:30 pm

Orange County Convention Center
W304 EFG

Chairperson

Laura Tosi, MD
Children's National Health System, United States

- | | |
|----------------|--|
| 7:15 pm | Dinner and Welcome
*Laura Tosi, MD. Children's National Health System, United States
<i>Disclosures:</i> Laura Tosi, MD, Ultragenyx 2, OI Foundation, 2 |
| 7:35 pm | Keynote Address: From Phenotype to Genotype: The Changing Taxonomy of Rare Bone Disease
*Leslie Biesecker, MD, PhD. National Institutes of Health, United States
<i>Disclosures:</i> Leslie Biesecker, MD, PhD, NIH, 3, ArQule, Inc. 2, Illumina, 6, Genentech, 7, Cold Spring Harbor Laboratory, 3 |

- 8:05 pm Management Pearls to Enhance the Care of Patients with Rare Bone Diseases**
 Fibrous Dysplasia
 *Alison Boyce, MD, National Institutes of Health
 Pulmonary and Cardiac Issues in Osteogenesis Imperfecta
 *Catherine Raggio, MD. Hospital for Special Surgery
 Hypophosphatasia
 *Michael Whyte, MD. Shriners Hospital for Children, St. Louis, MO
Disclosures: Alison Boyce, MD, Amgen, 2, Ultragenyx, 2; Cathleen Raggio, MD, OIFoundation 2, 6, Biomarin 5,8, Alexion, 8; Michael Whyte,MD, Diichi Sankyo,Inc, 5, Ultragenyx, 2
- 8:40 pm New Disease Models**
 Vanishing Act: Animal Models of Disappearing Bone Disease
 *Michael Dellinger, PhD. UT Southwestern
- 8:50 pm Rare Bone Disease Clinical Trial Updates**
 Iron Therapy for Autosomal Dominant Hypophosphatemic Rickets (ADHR)
 *Erik Imel, MD. Indiana University
 Fibrodysplasia Ossificans Progressiva and Multiple Hereditary Exostoses
 *Maurizio Pacifici, PhD. Children's Hospital of Philadelphia
 Fibrodysplasia Ossificans Progressiva
 *Eduardo Forleo Neto, MD, MSc. Regeneron Pharmaceuticals
 Fibrodysplasia Ossificans Progressiva
 *Tim LaBranche, DVM, PhD. BlueprintMedicines
Disclosures: Erik Imel, MD, Ultragenyx 2,5, Pharmacosmos, 5; Maurizio Pacifici, PhD Clementia, 1; Eduardo Forleo Neto, MD,MSc,Regeneron 1,3; Timothy Paul LaBranche, DVM, PhD, Blueprint Medicines, 1,3
- 9:30 pm Questions and Final Discussion**

ASBMR CONNECT: EARLY CAREER INVESTIGATOR NETWORKING HAPPY HOUR

*ASBMR Connect is supported in part by educational grants from
Amgen, Inc. and Ultragenyx Pharmaceutical Inc.*

7:15 pm - 8:30 pm

**Hyatt Regency Orlando
Orlando Ballroom**

Early Stage Investigators who wish to continue building connections with peers in a fun and informal setting are invited to attend this event. Participants are encouraged to participate in Networking Bingo and will get a chance to win drink tickets and be entered in a raffle drawing for a free ASBMR In-Training Membership.

BONE TURNOVER MARKERS WORKING GROUP

7:30 pm - 9:30 pm

Orange County Convention Center
W307 B

Chairpersons

Kristina Akesson, MD, PhD
Lund University, Malmö, Sweden

William D Fraser, MD, PhD
Norwich Medical School, University of East Anglia, Norwich, UK

This year the Working Group Meeting will address the associations of the bone turnover rate with metabolic bone diseases and inflammatory diseases. These subjects will be presented both from the point of view of clinical and experimental studies. The utility of bone markers for better understanding of bone disease in these pathologies will be discussed. A lively debate on these topics is expected.

7:30 pm **Welcome and Introduction**

7:40 pm **Bone Metabolism in Anorexia Nervosa**

*Pouneh K. Fazeli, MD, MPH, Harvard Medical School, Neuroendocrine Unit,
Massachusetts General Hospital, Boston, United States

8:10 pm **Endocrine Actions of Sclerostin**

*Ryan C Riddle, OBE, PhD, John Hopkins School of Medicine, Baltimore, United States

8:40 pm **Bone Turnover Markers in the Inflammatory Diseases**

*Núria Guanabens, MD, PhD, University of Barcelona, Barcelona, Spain

9:10 pm **Closing remarks**

WOMEN IN BONE AND MINERAL RESEARCH EVENING NETWORKING RECEPTION

This program is supported in part by Ultragenyx Pharmaceutical Inc.

8:00 pm - 9:30 pm

Hyatt Regency Orlando
Coral Spring

The Women in Bone and Mineral Research Committee invites all colleagues to attend its Networking & Dessert Reception at the ASBMR 2019 Annual Meeting. Moderated by the ASBMR Women's Committee Chair, Michaela Reagan, Ph.D., panelists including Kate Ward, Ph.D., Christopher Hernandez, Ph.D., John Eisman, FRACP, MBBS, Ph.D., and Melissa Kacena, Ph.D., will discuss this year's topic: "Bridging the Gender Gap: Continuing the Conversation." With time for networking before and after, the panelists' discussion will focus on what individual labs are doing to help make the work environment more open and equal for women in science. This event is free to all registered Annual Meeting attendees.

ASBMR CONNECT: EARLY CAREER INVESTIGATOR AFTER HOURS HAPPY HOUR

*ASBMR Connect is supported in part by educational grants from
Amgen, Inc. and Ultragenyx Pharmaceutical Inc.*

8:30 pm - 9:30 pm

Early Stage Investigators are invited to continue networking at an off-site location in Orlando. Join your peers to build a network of career-long contacts in a relaxed and fun environment.

SATURDAY, SEPTEMBER 21, 2019

DAY-AT-A-GLANCE

Saturday

Time/Event/Location

6:00 AM - 7:45 AM.....	23
Industry Supported Symposium: Addressing Bone Manifestations in Gaucher Disease <i>W308</i>	
7:00 AM - 5:00 PM	24
Registration Open <i>Valencia Ballroom Lobby</i>	
8:00 AM - 9:30 AM.....	24
Louis V. Avioli Lecture and Presentation of Esteemed Awards <i>Valencia Ballroom B-D</i>	
9:30 AM - 9:45 AM.....	24
Networking Break <i>West Hall C</i>	
9:30 AM - 4:30 PM	24
Discovery Hall Open <i>West Hall C</i>	
9:30 AM - 4:30 PM	24
Posters Open <i>West Hall C</i>	
9:45 AM - 11:00 AM.....	25
Plenary Orals: Cell Regulators of Bone Disease <i>Valencia Ballroom A</i>	
9:45 AM - 11:00 AM.....	26
Plenary Orals: John H. Carstens Memorial Session: Osteoporosis Treatment <i>Valencia Ballroom B-D</i>	
11:00 AM - 12:30 PM	27
Hands-on Workshop: Histomorphometry: An Interactive Introduction <i>W304 AB</i>	
11:00 AM - 12:00 PM	27
Meet the Professor Sessions	
11:00 AM - 12:00 PM	29
Challenge the Experts: Osteoporosis <i>W414</i>	
11:00 AM - 12:00 PM	29
Cutting Edge Concepts: CRISPR Beyond the Mouse <i>W315</i>	
12:00 PM - 12:30 PM	29
Networking Break <i>West Hall C</i>	
12:30 PM - 2:30 PM	30
Poster Session I <i>West Hall C</i>	

12:30 PM - 2:30 PM	30
Late-Breaking Posters I	
<i>West Hall C</i>	
12:45 PM - 1:35 PM	30
Oral Poster Session I	
<i>West Hall C</i>	
2:45 PM - 4:00 PM	30
Symposium: Genetics in the Bone Clinic: From Rare to Complex	
<i>Valencia Ballroom A</i>	
2:45 PM - 4:00 PM	31
Symposium: Mineralization Gone Awry	
<i>Valencia Ballroom B-D</i>	
4:00 PM - 4:15 PM	31
Networking Break	
<i>West Hall C</i>	
4:15 PM - 5:45 PM	31
Concurrent Orals: Energy Metabolism: Bone, Muscle and Fat	
<i>Valencia Ballroom A</i>	
4:15 PM - 5:45 PM	33
Concurrent Orals: Nutrition and Exercise	
<i>Valencia Ballroom B-D</i>	
4:15 PM - 5:45 PM	34
Concurrent Orals: Osteoblasts	
<i>W315</i>	
4:15 PM - 5:45 PM	35
Concurrent Orals: Systemic Diseases: Effects on Bone	
<i>W414</i>	
5:00 PM - 6:30 PM	36
Publications Networking Reception	
<i>Barrel Springs I, Hyatt Regency Orlando</i>	
8:00 PM - 11:00 PM.....	36
Social Event	
<i>Main Event Entertainment</i>	

SATURDAY, SEPTEMBER 21, 2019

**INDUSTRY SUPPORTED SYMPOSIUM: ADDRESSING BONE
MANIFESTATIONS IN GAUCHER DISEASE**

Supported by an educational grant from SANOFI-GENZYME Pharmaceuticals

6:00 am - 7:45 am

Orange County Convention Center

W308

Saturday

Faculty

Paige Kaplan, MBBCh

Perelman School of Medicine at the University of Pennsylvania, Children's Hospital of Philadelphia, Philadelphia, United States

Disclosures: Honoraria as an advisor, ICGC Registry Board member, and lecturer from Sanofi Genzyme, honoraria as chairperson, DSMB, and TALIAS registry from Pfizer, and honoraria as chairperson for DSMB from Aeglea

- | | |
|----------------|---|
| 6:00 am | Registration and Breakfast Buffet |
| 6:15 am | Introductions, Disclosures |
| 6:30 am | Overview of Gaucher Disease (GD) <ul style="list-style-type: none">• Skeletal Involvement of GD including sample cases• Bone Symptoms• Available Treatment Options |
| 7:20 am | Closing Comments, Q&A |
| 7:30 am | Adjourn |

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EXCEL staff and peer reviewer have no relevant information to disclose.

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This Industry-Supported Symposium will be held in conjunction with the ASBMR 2019 Annual Meeting and is not a part of the official program of the American Society for Bone and Mineral Research. EXCEL Continuing Education is responsible for the organization and scientific content of this event in accordance with the Essential Areas and Policies of the ACCME as well as with FDA guidelines.

REGISTRATION OPEN

7:00 am - 5:00 pm

Orange County Convention Center
Valencia Ballroom Lobby

LOUIS V. AVIOLI LECTURE AND PRESENTATION OF ESTEEMED AWARDS

8:00 am - 9:30 am

Orange County Convention Center
Valencia Ballroom B-D

Join your colleagues to celebrate the following ASBMR 2019 Esteemed Award Winners: Louis V. Avioli Founders Award, Frederic C. Bartter Award, Fuller Albright Award, Gideon A. Rodan Award and Lawrence G. Raisz Award

8:30 am

Anabolic Actions of Parathyroid Hormones: Genes, Cells, and Models

Laurie McCauley, DDS, PhD

University of Michigan School of Dentistry, United States

Disclosures: None

NETWORKING BREAK

9:30 am - 9:45 am

Orange County Convention Center
West Hall C

DISCOVERY HALL OPEN

9:30 am - 4:30 pm

Orange County Convention Center
West Hall C

POSTERS OPEN

9:30 am - 4:30 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23. For a full listing of oral poster, poster and late-breaking poster presentations, please refer to the poster section starting on page 105.

PLENARY ORALS: CELL REGULATORS OF BONE DISEASE

9:45 am - 11:00 am

Orange County Convention Center
Valencia Ballroom A

Saturday

Moderators

Clemens Bergwitz, MD
Yale School of Medicine, United States

Marie-Helene Lafage-Proust, MD, PhD
INSERM U1059- Universite de Lyon-CHU-saint-etienne, France

ASBMR 2019 President's Award

9:45 am
1041

Lipocalin-2 Regulates FGF23 Production in Chronic Kidney Disease

*Guillaume Courbon¹, Connor Francis¹, Claire Gerber¹, Samantha Neuburg¹, Maralee Capella¹, Xueyan Wang¹, Aline Martin¹, Valentin David¹. ¹Division of Nephrology and Hypertension and Center for Translational Metabolism and Health, Northwestern University, United States

Disclosures: Guillaume Courbon, None

ASBMR 2019 Most Outstanding Basic Abstract

10:00 am
1042

Stimulation of Piezo1 by Mechanical Loading Promotes Bone Anabolism

*Xuehua Li¹, Li Han¹, Intawat Nookaew¹, Erin Mannen¹, Maria Almeida¹, Jinhu Xiong¹, Matthew Silva². ¹University of Arkansas for Medical Sciences, United States, ²Department of Orthopaedics Washington University, United States

Disclosures: Xuehua Li, None

ASBMR 2019 Felix Bronner Award

10:15 am
1043

Lipocalin 2: a possible target in DMD-induced bone loss.

*Marco Ponzetti¹, Argia Ucci¹, Antonio Maurizi¹, Annamaria Teti¹, Nadia Rucci¹.

¹University of L'Aquila, Department of biotechnological and applied clinical sciences, Italy

Disclosures: Marco Ponzetti, None

ASBMR 2019 Annual Meeting Young Investigator Award

10:30 am
1044

EPO and HIF-PHDⁱ in treating CKD-related anemia and control of circulating FGF23

*Megan L. Noonan¹, Erica L. Clinkenbeard¹, Pu Ni¹, Samantha P. Tippen¹, William R. Thompson¹, Matthew R. Allen¹, Kenneth E. White¹. ¹Indiana University School of Medicine, United States

Disclosures: Megan L. Noonan, None

ASBMR 2019 Annual Meeting Young Investigator Award

10:45 am
1045

DAB, An FDA-approved Drug, Protects against Osteoarthritis through BIG2 Mediated Regulation of TNF α and IL-1 β Signaling

*Wenyu Fu¹, Shuya Wang¹, Ronghan Liu¹, Wenhao Song¹, Chuanju Liu¹. ¹New York University Medical Center, United States

Disclosures: Wenyu Fu, None

PLENARY ORALS: JOHN H. CARSTENS MEMORIAL SESSION: OSTEOPOROSIS TREATMENT

9:45 am - 11:00 am

Orange County Convention Center
Valencia Ballroom B-D

Moderators

Felicia Cosman, MD

Columbia University College of Physicians and Surgeons, United States

Roland Chapurlat, MD, PhD

E. Herriot Hospital, France

9:45 am 1046 **VITamin D and Omega-3 Trial (VITAL): Effects of Vitamin D on Bone Density, Turnover and Structure**

*Meryl LeBoff¹, Sharon Chou¹, Elle Murata¹, Nancy Cook¹, Samia Mora¹, I-Min Lee¹, Julie Buring¹, JoAnn Manson¹. ¹Brigham & Women's Hospital, United States

Disclosures: Meryl LeBoff, None

10:00 am 1047 **Subject Characteristics and Changes in Bone Mineral Density After Transitioning From Denosumab to Alendronate in the Denosumab Adherence Preference Satisfaction (DAPS) Study**

*David Kendler¹, Arkadi Chines², Shuang Huang², Robert Kees Stad², Patricia Clark³, Peter R Ebeling⁴, Michael McClung⁵, Yumie Rhee⁶, Arkadi Chines⁷, Shuang Huang⁷, Robert Kees Stad⁷, Nick Freemantle⁸. ¹University of British Columbia, Canada, ²Amgen Inc., United States, ³Hospital Infantil de Mexico Federico Gómez and National University of Mexico, Mexico, ⁴Monash University, Australia, ⁵Oregon Osteoporosis Center, United States, ⁶Yonsei University College of Medicine, Republic of Korea, ⁷Amgen Inc., Switzerland, ⁸University College London, United Kingdom

Disclosures: David Kendler, Amgen, Eli Lilly, Speakers' Bureau, Amgen, Eli Lilly, Pfizer, Consultant, Amgen, Eli Lilly, Grant/Research Support

10:15 am 1048 **Zoledronic Acid Maintains Bone Mineral Density after Denosumab Administration (DATA-HD Extension)**

*Joy Tsai¹, Natalie David¹, Grace Sassana¹, Benjamin Leder¹. ¹Massachusetts General Hospital, United States

Disclosures: Joy Tsai, None

10:30 am 1049 **Extensive Modeling-Based Bone Formation After 2 Months of Romosozumab Treatment: Results From the FRAME Clinical Trial**

*Erik F. Eriksen¹, Roland Chapurlat², Pascale Chavassieux², Rogely Boyce³, Stephane Horlait³, Yifei Shi³, Rachel B. Wagman³, Jacques P. Brown⁴, Rogely Boyce⁵, Stephane Horlait⁵, Yifei Shi⁵, Rachel B. Wagman⁵, Cesar Libanati⁶. ¹Department of Clinical Endocrinology, Oslo University Hospital and Institute of Clinical Medicine Oslo University, Norway, ²INSERM UMR 1033, Université de Lyon, France, ³Amgen Inc., United States, ⁴CHU de Quebec Research Centre and Laval University, Canada, ⁵Amgen Inc., France, ⁶UCB Pharma, Belgium

Disclosures: Erik F. Eriksen, Eli Lilly, Takeda, Mylan, Merck, Speakers' Bureau, Amgen, Takeda, Eli Lilly, Ascendis, Merck, Consultant, Amgen, Takeda, Grant/Research Support, Speaking fees, Ad Board honoraria, Other Financial or Material Support

**10:45 am
1050** **Romosozumab Improves Lumbar Spine Bone Mineral Density and Bone Strength Greater Than Alendronate as Assessed by Quantitative Computed Tomography and Finite Element Analysis in the ARCH Trial**

*Jacques P Brown¹, Arkadi Chines², Wenjing Yang², Roland Chapurlat³, Joseph Foldes⁴, Xavier Nogues⁵, Roberto Civitelli⁶, Tobias De Villiers⁷, Fabio Massari⁸, Cristiano Zerbini⁹, Chris Recknor¹⁰, Cesar Libanati¹¹. ¹Laval University, Canada, ²Amgen Inc., United States, ³INSERM UMR 1033, University of Lyon, France, ⁴Hadassah Hebrew University Medical Center, Israel, ⁵SIMIM Institut Hospital del Mar d'Investigacions Mèdiques, Spain, ⁶Washington University School of Medicine, United States, ⁷Stellenbosch University, South Africa, ⁸Instituto de Investigaciones Metabólicas, Argentina, ⁹Centro Paulista de Investigação Clínica, Brazil, ¹⁰United Osteoporosis Centers, United States, ¹¹UCB Pharma, Belgium
Disclosures: Jacques P Brown, Mereo, Radius, Servier, Grant/Research Support, Amgen, Eli Lilly, Servier, Consultant, Amgen, Eli Lilly, Speakers' Bureau

HANDS-ON WORKSHOP: HISTOMORPHOMETRY: AN INTERACTIVE INTRODUCTION

11:00 am - 12:30 pm

**Orange County Convention Center
W304 AB**

Hands-on Workshops are ticketed events and require advance registration. Registration is not available onsite.

MEET THE PROFESSOR SESSIONS

11:00 am - 12:00 pm

**Orange County Convention Center
W311 D**

**Maintaining Skeletal Health During the Mission to Mars
W311 D**

Jean Sibonga, PhD
NASA Johnson Space Center, United States
Disclosures: None

**Bisphosphonate Drug Holidays
W312 AB**

Dolores Shoback, MD
VA Medical Center, United States
Disclosures: None

**iPS Cells and Organoids as Human Experimental Disease Models
W311 H**

Edward Hsiao, MD, PhD
University of California, San Francisco, United States
Disclosures: Clementia Pharmaceuticals - grant/research support

**Gut Microbiome in Bone Density
W311 C**

Claes Ohlsson, MD, PhD
Center for Bone and Arthritis Research at the Sahlgrenska Academy, Sweden
Disclosures: Probi AB, consultant

Meet-the-Award Winner: How I Started Looking at the Microbiome and Bone

W311 B

Christopher Hernandez, PhD
Cornell University, United States
Disclosures: None

Therapeutic Options for XLH with Availability of Burosumab

W311 G

Thomas Carpenter, MD
Yale University School of Medicine, United States
Disclosures: Ultragenyx, consultant

Treatment to Prevent Fracture in Postmenopausal Women with Osteopenia

W312 C

Richard Eastell, MD
University of Sheffield, United Kingdom
Disclosures: Amgen Inc. - Consultant and Grant/Research Support

Matrix Vesicles-mediated Initiation of Skeletal and Dental Mineralization: Molecules and Pathways

W311 E

Jose Luis Millan, PhD
Sanford Burnham Prebys Medical Discovery Institute, United States
Disclosures: None

Vitamin D and Immunity

W311 A

John Adams, MD
University of California, Los Angeles, United States
Disclosures: None

Incentivizing Diversity and Gender in Bone

W311 F

Kristy Nicks, Ph.D.
NIAMS, NIH- Kelly Solutions, United States
Disclosures: None

Anna Teti, Ph.D.
University of L'Aquila, Italy
Disclosures: None

Nicola Partridge, Ph.D.
New York University College of Dentistry, United States
Disclosures: None

CHALLENGE THE EXPERTS: OSTEOPOROSIS

11:00 am - 12:00 pm

Orange County Convention Center
W414

Chair

Peter Ebeling AO, FRACP, MD, MBBS
School of Clinical Sciences, Monash University, Australia

Speakers

Nelson Watts, M.D.

Mercy Health Osteoporosis and Bone Health Services, United States

Disclosures: Shire, a member of the Takeda group of companies - Speakers' Bureau and Grant/Research Support

Felicia Cosman, M.D.

Columbia University College of Physicians and Surgeons, United States

Disclosures: Amgen, Eli Lilly, Radius - Speakers' Bureau;

Amgen, Eli Lilly, Radius, Tarsa/Taurus - Consultant;

Amgen, Eli Lilly - Grant/Research Support

Michael R. McClung, M.D.

Oregon Osteoporosis Center, United States

Disclosures: Amgen - Consultant and Speakers' Bureau

CUTTING EDGE CONCEPTS: CRISPR BEYOND THE MOUSE

11:00 am - 12:00 pm

Orange County Convention Center
W315

Co-Chairs

Bart Williams, PhD

Van Andel Research Institute, United States

Ernestina Schipani, MD, PhD

University of Michigan, United States

11:00 am Opportunities and Challenges of Gene Editing (CRISPR/TALEN) in Production Animals

Charles Long, PhD

Texas Veterinary Medical Center, United States

Disclosures: None

11:30 am Beyond the Mouse: Practicalities of Using CRISPR to Generate Bone Disease in Osteonal Bone Remodeling Models

Larry Suva, PhD

Texas Veterinary Medical Center, United States

Disclosures: None

NETWORKING BREAK

12:00 pm - 12:30 pm

Orange County Convention Center
West Hall C

POSTER SESSION I

12:30 pm - 2:30 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23. For a full listing of Poster Session I presentations, please see page 105.

LATE-BREAKING POSTERS I

12:30 pm - 2:30 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23. For a full listing of Late-Breaking Posters I presentations, please see page 153.

ORAL POSTER SESSION I

12:45 pm - 1:35 pm

Orange County Convention Center
West Hall C

New this year! Come hear a select number of plenary poster presenters give an overview of their poster on digital touch screen displays. Following the oral poster presentations, visit their poster board to ask questions and continue the discussion.

For a full listing of Oral Poster Session I presentations, please see page 159.

SYMPOSIUM: GENETICS IN THE BONE CLINIC: FROM RARE TO COMPLEX

2:45 pm - 4:00 pm

Orange County Convention Center
Valencia Ballroom A

Co-Chairs

Stuart Ralston, MD
University of Edinburgh, United Kingdom

Andre Uitterlinden, PhD
Rm Ee 575, Genetic Laboratory, Netherlands

2:45 pm **Rare and Complex Genetics in the Bone Clinic**

Brent Richards, MD
McGill University, Canada
Disclosures: None

3:10 pm **Clinical Applications Through Genome Interrogation in BioVU**

Nancy Cox, PhD
Vanderbilt University Medical Center, United States
Disclosures: None

3:35 pm **Mendelian Diseases in the Bone Clinic**

Outi Makitie, MD, PhD
Children s Hospital, University of Helsinki, Finland
Disclosures: None

SYMPOSIUM: MINERALIZATION GONE AWRY

This activity is supported by educational funding provided by Ipsen Biopharmaceuticals, Inc.

2:45 pm - 4:00 pm

Orange County Convention Center

Valencia Ballroom B-D

Co-Chairs

Carolyn Macica, PhD

Frank H. Netter School of Medicine Quinnipiac University, United States

Maurizio Pacifici, PhD

Children's Hospital of Philadelphia, United States

2:45 pm Mineralization Mechanisms in the Extracellular Matrix in Health and Disease

Marc McKee, PhD

McGill University, Canada

Disclosures: None

3:10 pm Heterotopic Ossification in FOP

Eileen Shore, PhD

University of Pennsylvania, United States

Disclosures: None

3:35 pm Vascular Calcification

Linda Demer, MD, PhD

David Geffen School of Medicine At University of California Los Angeles, United States

Disclosures: None

NETWORKING BREAK

4:00 pm - 4:15 pm

Orange County Convention Center

West Hall C

CONCURRENT ORALS: ENERGY METABOLISM: BONE, MUSCLE AND FAT

4:15 pm - 5:45 pm

Orange County Convention Center

Valencia Ballroom A

Moderators

Anyonya Guntur, PhD

Maine medical center research institute, United States

Christa Maes, PhD

KU Leuven, Belgium

4:15 pm Identification of novel factors involved in the coupling of bone resorption and bone formation in humans reveals RANKL/DPP4 as a new link between bone remodeling and energy metabolism

*Megan Weivoda¹, Chee Kian Chew², David Monroe³, Elizabeth Atkinson³, Josh Farr³, Brianne Thicke³, Ming Ruan³, Amanda Tweed³, Brittany Eckhardt³, Louise McCready³, Jennifer Geske³, Robert Rizza³, Adrian Vella³, Aleksey Matveyenko³, Matthew Drake³, Bart Clarke³, Merry Jo Oursler³, Sundeep Khosla³, Moustapha Kassem⁴, Thomas Andersen⁴.

¹University of Michigan, United States, ²Tan Tock Seng Hospital, Singapore, ³Mayo Clinic, United States, ⁴University of Southern Denmark, Denmark

Disclosures: Megan Weivoda, None

4:30 pm
1052

Dual Role of Carboxypeptidase E (CPE) in Regulation of Energy Metabolism and Bone Mass

*Amit Chougule¹, Sudipta Baroi¹, Piotr Czernik¹, Beata Lecka-Czernik¹, Vipula Kolli², Peng Loh². ¹University of Toledo College of Medicine and Life Sciences, United States, ²Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, United States

Disclosures: Amit Chougule, None

4:45 pm
1053

Resistance to Lrp5 Inhibitors Protects Bone Mass and Improves Glucose Metabolism in Type 1 Diabetes

*Giulia Leanza¹, Francesca Fontana², Yael Alippe², Seung-Yon Lee², Maria Remedi², Nicola Napoli², Roberto Civitelli², Rocky Strollo³, Paolo Pozzilli³. ¹Campus Bio-Medico University of Rome, Italy/ Washington University in St Louis, Italy, ²WASHINGTON UNIVERSITY IN ST. LOUIS, United States, ³Campus Bio-Medico University of Rome, Italy, Italy

Disclosures: Giulia Leanza, None

5:00 pm
1054

Lipocalin2 promotes b-cell function to prevent glucose intolerance in obesity in humans and mice

*Steven Shikhel¹, Ioanna Mosialou¹, Ery Petropoulou¹, Na Luo¹, Nyanza Rothman¹, Stavroula Kousteni¹, Mishaela Rubin², Bertrand Cariou³, Mathieu Wargny³, Elisabeth Rendu⁴, Cyrille Confavreux⁴. ¹Department of Physiology and Cellular Biophysics, Columbia University Medical Center, United States, ²Department of Medicine-Endocrinology, Columbia University Medical Center, New York, NY, United States, United States, ³Institut du thorax, INSERM UMR 1087/CNRS UMR 6291, CHU de Nantes, Université de Nantes, France, ⁴INSERM UMR1033-Université de Lyon, France

Disclosures: Steven Shikhel, None

5:15 pm
1055

Lipocalin-2 is anorexigenic in humans and in non-human primates

*Peristera-Ioanna Petropoulou¹, Steven Shikhel¹, Ioanna Mosialou¹, Stavroula Kousteni¹, Lihong Hao², Sue Shapses², Fabiana Bahna³, Lawrence Shapiro³, Jongho Kim⁴, Patrick Carberry⁴, Akiva Mintz⁴, J. John Mann⁴, Norman Simpson⁵, Mihran Bakalian⁵, Suham Kassir⁶, Mark D. Underwood⁶, Christina M. May⁷, Matthew J. Jorgensen⁷, Kiran Kumar Solingapuram Sai⁸, Cyrille B. Confavreux⁹, Blandine Laferrere¹⁰, Mishaela Rubin¹¹. ¹Department of Physiology and Cellular Biophysics, Columbia University Medical Center, United States, ²The Rutgers Center for Lipid Research, New Jersey Institute for Food, Nutrition, and Health, Rutgers University, United States, ³Department of Biochemistry and Molecular Biophysics, Columbia University, United States, ⁴Department of Radiology, Columbia University Medical Center, United States, ⁵Department of Psychiatry, Columbia University Medical Center, United States, ⁶Molecular Imaging and Neuropathology Division, New York State Psychiatric Institute, United States, ⁷Department of Pathology, Section on Comparative Medicine, Wake Forest School of Medicine, United States, ⁸Department of Radiology, Wake Forest School of Medicine, United States, ⁹INSERM UMR1033-Université de Lyon, France, ¹⁰New York Obesity Nutrition Research Center, Columbia University, United States, ¹¹Department of Medicine-Endocrinology, Columbia University Medical Center, New York, NY, United States, United States

Disclosures: Peristera-Ioanna Petropoulou, None

5:30 pm
1056

PTH receptor signaling in the adipocyte improves glucose homeostasis and is required for skeletal anabolism

*Priyanka Kushwaha¹, Ryan C Riddle¹, Soohyun P Kim², Conor Beil². ¹Johns Hopkins University, School of Medicine, United States, ²Johns Hopkins, United States

Disclosures: Priyanka Kushwaha, None

CONCURRENT ORALS: NUTRITION AND EXERCISE

4:15 pm - 5:45 pm

Orange County Convention Center
Valencia Ballroom B-D

Moderator

Sue Shapses, PhD
Rutgers University, United States

Deb Sellmeyer, MD
Stanford University, School of Medicine, United States

4:15 pm 1057 **Effects of Vitamin D on the Risk of Falls in the VITamin D and Omega-3 Trial (VITAL)**

*Meryl LeBoff¹, Sharon Chou¹, Elle Murata¹, Nancy Cook¹, Samia Mora¹, I-min Lee¹, Julie Buring¹, JoAnn Manson¹, Peggy Cawthon². ¹Brigham and Women's Hospital, United States, ²UCSF, United States
Disclosures: Meryl LeBoff, None

4:30 pm 1058 **Effect of Dietary Protein Intake on Bone Mineral Density and Fracture Incidence in Older Adults in the Health, Aging, and Body Composition Study**

*Ashley Weaver¹, Janet Tooze¹, Stephen Kritchevsky¹, Denise Houston¹, Jane Cauley², Douglas Bauer³, Fran Tykavsky⁴. ¹Wake Forest University School of Medicine, United States, ²University of Pittsburgh, United States, ³University of California San Francisco, United States, ⁴University of Tennessee Health Science Center, United States
Disclosures: Ashley Weaver, None

4:45 pm 1059 **Changes in Distal Tibial Bone Microarchitecture in Response to 8 Weeks of US Army Basic Combat Training in Men and Women**

*Julie Hughes¹, Kristin Popp¹, Katelyn Guerriere¹, Kathryn Taylor¹, Ronald Matheny¹, Stephen Foulis¹, Mary Boussein². ¹Military Performance Division, United States Army Research Institute of Environmental Medicine, United States, ²Center for Advanced Orthopedic Studies, Beth Israel Deaconess Medical Center, United States
Disclosures: Julie Hughes, None

5:00 pm 1060 **Indicators of Energetic Status are Predictive of Bone Turnover Markers in Exercising Women with Menstrual Disturbances**

*Kristen J. Koltun¹, Emily A. Southmayd¹, Rebecca Mallinson¹, Nancy I. Williams¹, Mary Jane De Souza¹. ¹Pennsylvania State University, United States
Disclosures: Kristen J. Koltun, None

5:15 pm 1061 **Loss in DXA-Estimated Total Body Lean Mass but not Fat Mass Predicts Incident Major Osteoporotic Fracture and Hip Fracture Independently from FRAX: A Registry-Based Cohort Study**

*William Leslie¹, John Schousboe², Suzanne Morin³, Patrick Martineau⁴, Lisa Lix⁵, Helena Johansson⁶, Eugene McCloskey⁷, Nicholas Harvey⁸, John Kanis⁹. ¹University of Manitoba, Canada, ²Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US; ³University of Minnesota, Minneapolis, US, United States, ⁴McGill University, Montreal, Canada, Canada, ⁵University of Manitoba, Winnipeg, Canada; ⁶Harvard Medical School, Boston, US, Canada, ⁷University of Manitoba, Winnipeg, Canada, Canada, ⁸Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK; ⁹Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, ⁷Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, ⁸MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK; ⁹NIHR Southampton Biomedical Research Centre, University of Southampton and University Hospital Southampton NHS Foundation Trust, Southampton, UK, United Kingdom, ⁹Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK; ⁹Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, United Kingdom
Disclosures: William Leslie, None

Saturday

5:30 pm
1062 **Increases in Visceral Adipose Tissue Over Six Years Result in Lower Paraspinal Muscle Density in Men and Women: the Framingham Study**
*Douglas P. Kiel¹, Timothy Tsai¹, Ilean Isaza¹, Marian T. Hannan¹, Thomas Travison¹, Brett Allaire², Mary Boussein², Ching-Ti Liu³. ¹Marcus Institute for Aging Research, United States, ²Beth Israel Deaconess Medical Center, United States, ³Boston University School of Public Health, United States
Disclosures: Douglas P. Kiel, None

CONCURRENT ORALS: OSTEOLASTS

4:15 pm - 5:45 pm

**Orange County Convention Center
W315**

Moderator

Cheryl Ackert-Bicknell, PhD
Center for Musculoskeletal Research University of Rochester, United States
Meghan McGee-Lawrence, PhD
Augusta University, United States

4:15 pm
1063 **ASBMR 2019 Annual Meeting Young Investigator Award**
YAP and TAZ mediate osteoprogenitor mobilization for primary ossification center development
*Joseph Collins¹, Nathaniel Dymant¹, Joel Boerckel¹. ¹University of Pennsylvania, United States
Disclosures: Joseph Collins, None

4:30 pm
1064 **Fip200, an Essential Autophagy Gene, Mediates the Anabolic Action of PTH in Bone**
*Shuqun Qi¹, Li Wang¹, Han Kyoung Choi¹, Laurie McCauley¹, Fei Liu¹, Jian Pan², Jun-Lin Guan³. ¹University of Michigan School of Dentistry, United States, ²West China College of Stomatology, Sichuan University, China, ³University of Cincinnati College of Medicine, United States
Disclosures: Shuqun Qi, None

4:45 pm
1065 **Discoidin domain receptor 2 functions in skeletal progenitor cells and chondrocytes to control cartilage growth and postnatal bone formation**
*Fatma Mohamed¹, Chunxi Ge¹, Abdul-Aziz Binreyes¹, Renny Franceschi¹. ¹UNIVERSITY OF MICHIGAN, United States
Disclosures: Fatma Mohamed, None

5:00 pm
1066 **Cell-type-distinct regulatory action of Runx2 on the genome underlies its distinct roles in osteoblasts and chondrocytes**
*Hironori Hojo¹, Shinsuke Ohba¹, Akira Yamakawa², Ung-il Chung², Qiuyu Guo³, Xinjun He³, Andrew McMahon³, Taku Saito⁴, Shoko Onodera⁵, Toshifumi Azuma⁵. ¹Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, The University of Tokyo, Japan, ²Department of Bioengineering, Graduate School of Engineering, The University of Tokyo, Japan, ³Department of Stem Cell Biology and Regenerative Medicine, Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research, United States, ⁴Orthopaedic Surgery, Graduate School of Medicine, The University of Tokyo, Japan, ⁵Department of Biochemistry, Tokyo Dental College, Japan
Disclosures: Hironori Hojo, None

5:15 pm
1067 **ASBMR 2019 Annual Meeting Young Investigator Award**
Mitochondrial long-chain fatty acid β -oxidation is required for Wnt-mediated increases in bone volume
*Megan C. Moorer¹, Conor Beil¹, Soohyun Kim¹, Priyanka Kushwaha¹, Ryan Riddle¹. ¹Johns Hopkins University, United States
Disclosures: Megan C. Moorer, None

ASBMR 2019 Annual Meeting Young Investigator Award**5:30 pm
1068****Cells targeted by Dmp1-Cre, but not Sost-Cre or CD19-Cre, are a major source of the OPG controlling osteoclast formation in young mice**

*Keisha Cawley¹, Jinhu Xiong¹, Ryan Macleod¹, Igor Gubrij¹, Yu Liu¹, Robin Mulkey¹, Michela Palmieri¹, Joseph Goellner¹, Charles O'Brien¹. ¹University of Arkansas for Medical Sciences, United States

Disclosures: Keisha Cawley, None

CONCURRENT ORALS: SYSTEMIC DISEASES: EFFECTS ON BONE**4:15 pm - 5:45 pm****Orange County Convention Center****W414****Moderators**

Elaine Yu, MD

Massachusetts General Hospital, United States

Salvatore Minisola, MD

Sapienza , University of Rome, Italy

**4:15 pm
1069****Red Cell Distribution Width (RDW), A Widely Available Simple Measure of Cell Aging, Strongly Predicts Hip Fracture**

*Kyoung Min Kim¹, Li-Yung Lui², Jane Cauley³, Kristine Ensrud⁴, Eric Orwoll⁵, Marcia Stefanick⁶, Steve Cummings⁷. ¹San Francisco Coordinating Center, Research Institute, CPMC, San Francisco, CA, USA/ Department of Endocrinology and Metabolism. Seoul National University Bundang Hospital and Seoul National University College of Medicine, Seongnam, Korea, United States, ²San Francisco Coordinating Center, Research Institute, CPMC, CA, USA, United States, ³Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA, USA, United States, ⁴Center for Chronic Disease Outcomes Research, Veterans Affairs Health Care System, Department of Medicine, University of Minnesota, Division of Epidemiology and Community Health, School of Public Health, University of Minnesota, Minneapolis, MN, USA, United States, ⁵Oregon Health & Science University, Portland, OR, USA, United States, ⁶Stanford Prevention Research Center, School of Medicine, Stanford University, Palo Alto, CA, USA, United States, ⁷San Francisco Coordinating Center, Research Institute, CPMC/ Department of Epidemiology and Biostatistics, University of California, San Francisco, CA, USA, United States

Disclosures: Kyoung Min Kim, None

**4:30 pm
1070****Anemic Women Have Poorer Cortical Bone Microstructure and Increased Fracture Risk Independent of Bone Mineral Density and Clinical Risk Factors**

*Anna Nilsson¹, Daniel Sundh¹, Lisa Johansson¹, Dan Mellström¹, Mattias Lorentzon¹.

¹Geriatric Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden

Disclosures: Anna Nilsson, None

ASBMR 2019 Annual Meeting Young Investigator Award**4:45 pm
1071****The Risk of Hip and Non-Vertebral Fractures in Chronic Kidney Disease: A Systematic Review and Meta-Analysis**

*Tatiane Vilaca¹, Syazrah Salam¹, Richard Eastell¹, Marian Schini², Sue Harnan³, Anthea Sutton⁴, Edith Poku⁵, Steve Cummings⁶. ¹Academic Unit of Bone Metabolism The University of Sheffield , United Kingdom, ²Academic Unit of Bone Metabolism The University of Sheffield , United Kingdom, ³Health Economics and Decision Science School of Health and Related Research (SchHARR) The University of Sheffield, United Kingdom, ⁴Health Economics and Decision Science School of Health and Related Research (SchHARR) The University of Sheffield , United Kingdom, ⁵Health Economics and Related Research School of Health and Related Research (SchHARR) The University of Sheffield , United Kingdom, ⁶University of California, United States

Disclosures: Tatiane Vilaca, None

- 5:00 pm
1072** **Lumbar Spine Quantitative Computed Tomography (QCT) Is A Better Predictor of Vertebral Fracture in Boys with Duchenne Muscular Dystrophy (DMD) Than either DXA or Peripheral QCT**
*Nicola Crabtree¹, Michael Machin², Eleni Kariki², Raja Padidela³, Imelda Hughes³, Zulf Mughal³, Michael Machin⁴, Eleni Kariki⁴, Nicholas Shaw⁵. ¹Birmingham Women's and Children's Hospital NHS Foundation Trust, United Kingdom, ²Central Manchester University Hospitals NHS Foundation Trust, United Kingdom, ³Royal Manchester Children's Hospital, United Kingdom, ⁴Central Manchester University Hospitals NHS Foundation Trust, United Arab Emirates, ⁵Birmingham Women's and Children's NHS Foundation Trust, United Kingdom
Disclosures: Nicola Crabtree, None
- 5:15 pm
1073** **ASBMR 2019 Annual Meeting Young Investigator Award Multiple Sclerosis and Fracture Risk: A Mendelian Randomization Study**
*Sohyun Jeong¹, Yi-Hsiang Hsu². ¹Marcus Institute at Hebrew SeniorLife and Harvard Medical School, United States, ²1.Marcus Institute at Hebrew SeniorLife and Harvard Medical School,2.Harvard School of Public Health 3.Broad Institute of MIT and Harvard , United States
Disclosures: Sohyun Jeong, None
- 5:30 pm
1074** **Cholinesterase Inhibitor use is Associated with Lower Fracture Risk in Men with Dementia**
*Abayomi Obunwale¹, Richard Sloane¹, Carl Pieper¹, Richaree Lee¹, Kenneth Lyles¹, Colon-Emeric Cathleen¹, Robert Adler². ¹Duke University, United States, ²Hunter Holmes McGuire VAMC, United States
Disclosures: Abayomi Obunwale, None

PUBLICATIONS NETWORKING RECEPTION

5:00 pm - 6:30 pm

**Hyatt Regency Orlando
Barrel Springs 1**

New this year!

The 2019 Publications Reception will feature food, drinks, and a short panel discussion with JBMR® and JBMR® Plus Editors, including JBMR® Editor-in-Chief Roberto Civitelli and JBMR® Plus Editor-in-Chief Peter Ebeling. The panel will be moderated by Publications Committee Chair Michael Mannstadt, and topics will cover data presentation and figure preparation, navigating the submission process, maximizing visibility for your paper, questions of integrity and ethical practices, getting selected as a new reviewer, and many others. Don't miss this unique opportunity to eat, drink, and mingle with your ASBMR journal Editors and our publishing partners.

SOCIAL EVENT

8:00 pm - 11:00 pm

**Main Event Entertainment
9101 International Dr., Suite 1032**

SUNDAY, SEPTEMBER 22, 2019

DAY-AT-A-GLANCE

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SUNDAY, SEPTEMBER 22, 2019

**INDUSTRY SUPPORTED SYMPOSIUM: A CLOSER LOOK AT X-LINKED
HYPOPHOSPHATEMIA: APPLICATIONS FOR CLINICAL PRACTICE**

Supported by an educational grant from Ultragenyx Pharmaceuticals

6:00 am - 7:45 am

Orange County Convention Center

W308

Co-Chairs

Aliya Khan, MD, FRCPC, FACP, FACE

Divisions Endocrinology and Geriatrics, McMaster University, Bone Research & Education Centre, Oakville, Ontario, Canada

Disclosures: research grant support from Alexion, Amgen, Ascendis, Radius, Shire, and Takeda

Erik Allen Imel, MS, MD

Indiana University School of Medicine, Indiana Center for Musculoskeletal Health, Indianapolis, United States

Disclosures: information will be provided on site

6:00 am	Registration and Breakfast Buffet
6:15 am	Introductions, Disclosures
6:20 am	Clinical Presentation, Pathophysiology, and Complications
6:45 am	Diagnostic Evaluation of XLH
7:10 am	Treatment Strategies: Pharmacologic and Nonpharmacologic Therapies
7:35 am	Closing Comments / Q&A
7:45 am	Adjourn

Accreditation and Designation Statement

EXCEL Continuing Education is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

EXCEL Continuing Education designates this live activity for a maximum of 1.50 *AMA PRA Category 1 Credit(s)*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

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EXCEL staff and peer reviewer have no relevant information to disclose.

ASBMR Disclaimer

This Industry-Supported Symposium will be held in conjunction with the ASBMR 2019 Annual Meeting and is not a part of the official program of the American Society for Bone and Mineral Research. EXCEL Continuing Education is responsible for the organization and scientific content of this event in accordance with the Essential Areas and Policies of the ACCME as well as with FDA guidelines.

Sunday

REGISTRATION OPEN

7:00 am - 5:00 pm

Orange County Convention Center
Valencia Ballroom Lobby

PLENARY SYMPOSIUM: 50TH ANNIVERSARY OF BISPHOSPHONATES: BACK TO THE FUTURE

8:00 am - 9:15 am

Orange County Convention Center
Valencia Ballroom B-D

Co-Chairs

Richard Eastell, MD
University of Sheffield, United Kingdom

Jose Luis Millan, PhD
Sanford Burnham Prebys Medical Discovery Institute, United States

8:00 am Historical Highlights and Future Directions

R Graham Russell, MD, PhD
University of Oxford, United Kingdom
Disclosures: None

8:20 am Impact of Bisphosphonates on Progression and Spread of Malignancy

Robert Coleman, MD, FRCP, MBBS
The University of Sheffield, United Kingdom
Disclosures: Scancell,14;Genomic Health,17;Eisai,17;Astellas,14;Inbiomotion,14;Amgen,17

8:40 am Zoledronate: A New Geroprotector

Ilaria Bellantuono, MD, PhD
The University of Sheffield, United Kingdom
Disclosures: None

9:00 am Panel Discussion

NETWORKING BREAK

9:15 am - 9:45 am

Orange County Convention Center
West Hall C

POSTERS OPEN

9:30 am - 4:30 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23. For a full listing of oral poster, poster and late-breaking poster presentations, please refer to the poster section starting on page 105.

DISCOVERY HALL OPEN

9:30 am - 4:30 pm

Orange County Convention Center
West Hall C

PLENARY ORALS: CLINICAL HIGHLIGHTS

9:45 am - 11:00 am

Orange County Convention Center
Valencia Ballroom B-D

Moderators

Bente Langdahl, MD, PhD
Aarhus University Hospital, Denmark

Steven Harris, MD
University of California, San Francisco, United States

ASBMR 2019 Most Outstanding Clinical Abstract

9:45 am 1075 **A Randomized Clinical Trial on the Effect of Dietary Calcium Intake as Compared to Calcium Supplement on Vascular Health in Postmenopausal Women**

*Suzanne N Morin¹, Angel M Ong¹, Hope A Weiler¹, Elham Rahme¹, David Goltzman¹, Styliani S Daskalopoulou¹, Michelle Wall², Claudie Berger², Shubhabrata Das³, Angela M Cheung³. ¹McGill University, Canada, ²Research Institute of the McGill University Health Centre, Canada, ³University of Toronto, Canada

Disclosures: Suzanne N Morin, Dairy Farmers of Canada, Grant/Research Support

10:00 am 1076 **Effects of Supplementation with Vitamin D3 400, 4000 or 10000 IU Daily for Three Years on Vascular Calcification in The Calgary Vitamin D Study: Secondary Analysis of a Randomized Controlled Trial**

*Emma Billington¹, Lauren Burt¹, Ryan Plett¹, Steven Boyd¹, David Hanley¹, Marianne S Rose². ¹University of Calgary, Canada, ²Alberta Health Services, Canada

Disclosures: Emma Billington, Eli Lilly, Consultant, Amgen, Consultant, Amgen, Grant/Research Support

10:15 am 1077 **Long-term Safety and Improvement in Clinical Outcomes in the Phase 3 Randomized, Double-Blind, Placebo-Controlled Study of Burosumab, an Anti-FGF23 Antibody, in Adults with X-Linked Hypophosphatemia (XLH)**

*Karl L. Insogna¹, Anthony A. Portale², Farzana Perwad², Karine Briot³, Erik A. Imel⁴, Peter Kamenický⁵, Thomas Weber⁶, Pisit Pitukcheewanont⁷, Hae Il Cheong⁸, Suzanne Jan de Beur⁹, Yasuo Imanishi¹⁰, Nobuaki Ito¹¹, Robin Lachmann¹², Hiroyuki Tanaka¹³, Lin Zhang¹⁴, Alison Skrinar¹⁴, Linda Rees¹⁴, Javier San Martin¹⁴, Thomas O. Carpenter¹⁵. ¹Yale School of Medicine, United States, ²University of California, San Francisco, United States, ³Centre d'Evaluation des Maladies Osseuses, Hôpital Cochin, France, ⁴Indiana University School of Medicine, United States, ⁵Université Paris-Sud, Le Kremlin Bicêtre, France, United States, ⁶Duke University Medical Center, United States, ⁷Children's Hospital Los Angeles, University of Southern California Keck School of Medicine, United States, ⁸Seoul National University Children's Hospital, Republic of Korea, ⁹Johns Hopkins University, United States, ¹⁰Osaka City University Graduate School of Medicine, Japan, ¹¹The Tokyo University Hospital, Japan, ¹²University College London Hospitals, United Kingdom, ¹³Okayama Saiseikai General Hospital, Japan, ¹⁴Ultragenyx Pharmaceutical Inc., United States, ¹⁵Yale University School of Medicine, United States

Disclosures: Karl L. Insogna, Ultragenyx Pharmaceutical Inc., Other Financial or Material Support, Ultragenyx Pharmaceutical Inc., Grant/Research Support, Ultragenyx Pharmaceutical Inc., Consultant

10:30 am 1078 **Identification and Validation of Targets for Osteoporosis: Evidence from Whole exome Sequencing in 42,263 individuals, CRISPR-Cas9 and murine models**

*Laetitia Laurent¹, Sirui Zhou¹, Vincenzo Forgetta¹, J. Brent Richards¹, John P. Kemp², David M. Evans², Albenia Pramatarova³, Peter I. Croucher⁴, Graham R. Williams⁵, J. H. Duncan Bassett⁵, David Goltzman⁶. ¹Lady Davis Institute, Jewish General Hospital, McGill University, Canada, ²University of Queensland Diamantina Institute, Translational Research Institute, Australia, ³McGill University and Genome Quebec Innovation Centre, Canada, ⁴Garvan Institute of Medical Research, Australia, ⁵Molecular Endocrinology Laboratory, Department of Medicine, Imperial College London, United Kingdom, ⁶Research Institute of the McGill University Health Centre, Canada

Disclosures: Laetitia Laurent, None

Sunday

10:45 am **The Burden of Osteoporosis in the United States – A US Bone and Joint Initiative Report**
1079
*Nicole Wright¹, Kenneth Saag², Toby King³, Silvia Watkins-Castillo⁴, Ed Yelin⁵, Marc Hochberg⁶. ¹Department of Epidemiology, University of Alabama at Birmingham, United States, ²Division of Clinical Immunology and Rheumatology, University of Alabama at Birmingham, United States, ³United States Bone and Joint Initiative, United States, ⁴United States Bone and Joint Initiative, United States, ⁵Division of Rheumatology and Institute for Health Policy Studies, University of California, San Francisco, United States, ⁶Department of Medicine, University of Maryland School of Medicine, United States
Disclosures: Nicole Wright, Amgen, Grant/Research Support

PLENARY ORALS: MUSCULOSKELETAL AGING

9:45 am - 11:00 am **Orange County Convention Center**
Valencia Ballroom A

Moderators
Hyun-Mo Ryoo, DDS, PhD
Seoul National University School of Dentistry, Republic of Korea

Maria Almeida, Ph.D.
Central Arkansas VA Healthcare System, University of Arkansas for Medical Services, United States

9:45 am **An Antibody against Oxidized Phospholipids Prevents Age Related Bone Loss and Improves Glucose Metabolism in Mice**
1080
*Michela Palmieri¹, Teenamol Joseph¹, Stavros C Manolagas¹, Elena Ambrogini¹, Horacio Gomez-acevedo², Joseph L Witztum³. ¹Center for Osteoporosis and Metabolic Bone Diseases, Center for Osteoporosis and Metabolic Bone Diseases, University of Arkansas for Medical Sciences and the Central Arkansas Veterans Healthcare System, United States, ²Department of Biomedical Informatics, University of Arkansas for Medical Sciences, United States, ³Department of Medicine, University of California San Diego, United States
Disclosures: Michela Palmieri, None

10:00 am **Deletion of the Mitochondrial Deacetylase Sirt3 Suppresses Osteoclast Fusion and Increases Bone Mass in Old Mice**
1081
*Kimberly Krager¹, Aaron Warren¹, Nukhet Aykin-Burns¹, Maria Almeida², Ha-Neui Kim². ¹University of Arkansas for Medical Sciences, United States, ²University of Arkansas for Medical Sciences and Central Arkansas Veterans Healthcare System, United States
Disclosures: Kimberly Krager, None

10:15 am **Old mice attenuate compression-induced intervertebral disc degeneration by suppressing Serpina1 via Wnt signaling**
1082
*Marina Ziegler Ziegler¹, Christian Mueller¹, Nilsson Holguin². ¹University of Massachusetts, United States, ²IUPUI, United States
Disclosures: Marina Ziegler Ziegler, None

10:30 am **Immune Evasion, Apoptosis Resistance and Cellular Senescence in Tendon Aging and Pathology**
1083
*Anne Gingery¹, Yuki Saito¹, Takako Chikenji-Saito¹, Alyssa Vrieze¹, James Kirkland¹, Peter Amadio¹. ¹Mayo Clinic, United States
Disclosures: Anne Gingery, None

10:45 am **TRAF3 degradation in mesenchymal stem cells during aging promotes accumulation of RANKL- and TGFβ-expressing immune cells in bone marrow and causes bone loss**
1084
*Jinbo Li¹, Zhenqiang Yao¹, Xiangjiao Yi¹, Akram Ayoub¹, Rong Duan¹, Lianping Xing¹, Brendan Boyce¹. ¹Department of Pathology, University of Rochester Medical Center, United States
Disclosures: Jinbo Li, None

MEET THE PROFESSOR SESSIONS

11:00 am - 12:00 pm

Orange County Convention Center
W311 A

Targeting Drugs to the Bone

W311 A

Frank Ebetino, PhD
University of Rochester, United States
Disclosures: None

R Graham Russell, MD, PhD
University of Oxford, United Kingdom
Disclosures: None

Treatment to Prevent Fracture in Postmenopausal Women with Osteopenia (Repeat)

W312 C

Richard Eastell, MD
University of Sheffield, United Kingdom
Disclosures: Amgen, Inc. - Consultant and Grant/Research Support

How Can Your DXA System Detect Incomplete AFF?

W311 F

Malachi McKenna, MD
St. Vincent's University Hospital, Ireland
Disclosures: Mylan,15; Ultragenyx,13; UCB Pharma,14

Effects of OA on Subchondral Bone

W311 D

Tamara Alliston, PhD
University of California, San Francisco, United States
Disclosures: None

Recurrent Fractures in Children and Adolescents: Assessment & Management

W311 H

Leanne Ward, MD
Children's Hospital of Eastern Ontario, Canada
Disclosures: Amgen,13; Novartis,14; Novartis,13; Amgen,14

How to Manage Diabetics at High Risk of Fracture

W311 B

William Leslie, MD
University of Manitoba, Canada
Disclosures: None

Skeletal Actions of Calcium Sensing Receptor and Its Pharmaceutical Potential

W311 E

Wenhan Chang, PhD
Endocrine Unit, VA Medical Center, University of California, San Francisco, United States
Disclosures: None

Sunday

Bone Loss Associated with Dismobility
W311 C

Yumie Rhee, MD, PhD
Yonsei University College of Medicine, Republic of Korea
Disclosures: Amgen - Speakers' Bureau and Grant/Research Support

Sequential Drug Therapy for Osteoporosis (Repeat)
W312 AB

Felicia Cosman, MD
Columbia University College of Physicians and Surgeons, United States
Disclosures: Amgen, Eli Lilly, Radius - Speakers' Bureau;
Amgen, Eli Lilly, Radius, Tarsa/Taurus - Consultant;
Amgen, Eli Lilly - Grant/Research Support

**FROM WASHINGTON TO YOU—ADVOCACY 101: HOW THE U.S.
FEDERAL BUDGET IMPACTS YOUR SCIENCE**

Sponsored by the ASBMR Advocacy and Science Policy Committee

11:00 am - 12:00 pm

**Orange County Convention Center
W307 C**

This session will provide an overview of the U.S. federal budget process and how it impacts the funding for biomedical research. Also, a panel of ASBMR members will share tips and testimonials on how they have successfully engaged their elected representatives and community with the goal of educating them on the impact that biomedical research plays in their own backyard.

**NATIONAL INSTITUTES OF HEALTH PATHWAYS TO PREVENTION
WORKSHOP: RESEARCH GAPS FOR LONG-TERM DRUG THERAPIES
FOR OSTEOPOROTIC FRACTURE PREVENTION**

11:00 am - 12:00 pm

**Orange County Convention Center
W314**

Co-Chairs

Faye Chen, PhD
NIH/NIAMS, United States

Lyndon Joseph, PhD
National Institutes Of Health,

11:00 am The NIH Pathways to Prevention Program

Keisha Shropshire , MPH
NIH, United States
Disclosures: None

11:05 am Current State of Science on Drug Therapies for Osteoporotic Fracture Prevention

Sundeep Khosla, MD
Mayo Clinic College of Medicine, United States
Disclosures: None

11:10 am Report on Systematic Evidence Review for the P2P Workshop

Howard Fink, MD, MPH
GRECC, Minneapolis VA Medical Center, United States
Disclosures: None

- 11:20 am

Workshop Panel Report on Evidence Gaps and Research Opportunities

Carolyn Crandall, MD, MS
University of California, Los Angeles, United States

Disclosures: None
- 11:30 am

NIH Activities Following the P2P Workshop

Faye Chen, PhD
NIH/NIAMS, United States

Disclosures: None
- 11:35 am

ASBMR Perspective

Benjamin Leder, MD
Massachusetts General Hospital Harvard Medical School, United States

Disclosures: Amgen - Consultant

Douglas Kiel, MD, MPH
Institute for Aging Research Hebrew SeniorLife, United States

Disclosures: None
- 11:50 am

Discussion

CUTTING EDGE CONCEPTS: STEM CELLS IN THE SKELETON

11:00 am - 12:00 pm

Orange County Convention Center
W315

Co-Chairs
 Geert Carmeliet, MD, PhD
 KU Leuven, Belgium

Kurt Hankenson, PhD, DVM
 University of Michigan, United States

- 11:00 am

Periosteal Stem Cells in Skeletal Regeneration

Celine Colnot, PhD
INSERM, France

Disclosures: None
- 11:30 am

Skeletal Stem Cells

Charles Chan, PhD
Stanford University, United States

Disclosures: None

CHALLENGE-THE-EXPERT - PARATHYROID DISEASE AND OTHER DISORDERS OF MINERAL METABOLISM

This activity is supported by educational funding provided by Takeda

11:00 am - 12:00 pm

Orange County Convention Center
W414

Co-Chairs

Dolores Shoback, MD
VA Medical Center, United States

Polly Fu
University of California, San Francisco, United States

Panelist #1

Michael Mannstadt, MD
Massachusetts General Hospital Harvard Medical School, United States
Disclosures: Shire, a member of the Takeda group of companies - Consultant and other financial or material support

Panelist #2

Ghada El-Hajj Fuleihan, MD, MPH
American University of Beirut-Medical Center, Lebanon
Disclosures: None

Panelist #3

Mishaela Rubin, MD
Columbia University, United States
Disclosures: Shire/Takeda - Grant/Research Support

NETWORKING BREAK

12:00 pm - 12:30 pm

Orange County Convention Center
West Hall C

POSTER SESSION II

12:30 pm - 2:30 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23. For a full listing of Poster Session II presentations, please see page 162.

LATE-BREAKING POSTERS II

12:30 pm - 2:30 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23. For a full listing of Late-Breaking Poster Session II presentations, please see page 208.

ORAL POSTER SESSION II

12:45 pm - 1:35 pm

Orange County Convention Center
West Hall C

New this year! Come hear a select number of plenary poster presenters give an overview of their poster on digital touch screen displays. Following the oral poster presentations, visit their poster board to ask questions and continue the discussion.

For a full listing of Oral Poster Session II presentations, please see page 215.

CONCURRENT ORALS: ADVANCES IN OSTEOPOROSIS TREATMENT

2:45 pm - 4:15 pm

Orange County Convention Center
Valencia Ballroom B-D

Moderators

Kristina Akesson, MD, PhD
Skane University Hospital, Malmo, Lund University, Sweden

E. Michael Lewiecki, MD
New Mexico Clinical Research & Osteoporosis Center, United States

- 2:45 pm
1085** **Efficacy and Safety of Romosozumab vs Placebo Among Patients With Mild-to-Moderate Chronic Kidney Disease (CKD)**
*Paul Miller¹, Arkadi Chines², Cassandra E. Milmont², Judy Maddox², Ben-Hur Albergaria³, Evelien Gielen⁴, Bente Langdahl⁵, Akimitsu Miyauchi⁶, Mark Vanderkelen⁷, Jonathan Adachi⁸. ¹Colorado Center for Bone Research at Panorama Orthopedics and Spine Center, United States, ²Amgen Inc., United States, ³Federal University of Espirito Santo, Brazil, ⁴Gerontology and Geriatrics, Department of Chronic Diseases, Metabolism and Aging, KU Leuven & Center for Metabolic Bone Diseases, UZ Leuven, Belgium, ⁵Aarhus University Hospital, Denmark, ⁶Miyauchi Medical Center, Japan, ⁷UCB Pharma, Belgium, ⁸McMaster University and St. Joseph's Healthcare Hamilton, Canada
Disclosures: Paul Miller, Amgen, Radius Pharma, Grant/Research Support, Amgen, Alexion, Radius Pharma, Consultant
- 3:00 pm
1086** **Sclerostin expression is down-regulated in advanced atherosclerotic plaques and is not associated with coronary artery disease or peripheral artery disease prior to, or major cardiovascular events in the 3-year period following, surgical endarterectomy**
*Gill Holdsworth¹, Peter Hall¹, Remi Okoye¹, Alison Wolfreys¹, Ian van Koeven², Petra van der Kraak², Gerard Pasterkamp², Rogely Boyce³, James Turk³. ¹UCB Pharma, United Kingdom, ²UMC Utrecht, Netherlands, ³Amgen Inc, United States
Disclosures: Gill Holdsworth, UCB Pharma, Other Financial or Material Support
- 3:15 pm
1087** **Altered Bone Quality in Long-Term Bisphosphonate Users with Atypical Femur Fracture (AFF)**
*Delphine Farlay¹, Sébastien Rizzo¹, Louis-Georges Ste-Marie², Laëtitia Michou³, Suzanne Morin⁴, Shijing Qiu⁵, Sudhaker D. Rao⁵, Jacques P. Brown⁶, Georges Boivin⁷. ¹INSERM UMR 1033, Univ Lyon, Université Claude Bernard Lyon 1, France, ²Université de Montreal, Canada, ³Division of Rheumatology, Department of Medicine, CHU de Québec-Université Laval, Canada, ⁴McGill University, Canada, ⁵Bone & Mineral Research Laboratory, Henry Ford Health System, United States, ⁶Division of Rheumatology, Department of Medicine, CHU de Québec-Université Laval, , Canada, ⁷INSERM, UMR 1033, Univ Lyon, Université Claude Bernard Lyon 1, France
Disclosures: Delphine FARLAY, AMGEN, Grant/Research Support
- 3:30 pm
1088** **Bone Quality and Long-Term Bisphosphonate Use in Women with Osteoporosis**
*David Pienkowski¹, Connie Wood¹, Hartmut Malluche¹. ¹University of Kentucky, United States
Disclosures: David Pienkowski, None

Sunday

- 3:45 pm
1089** **Predicting Fracture Risk During a Bisphosphonate Holiday in the FIT Long-term Extension (FLEX) Study: Comparison of a Custom Risk Tool vs FRAX**
 *Dennis Black¹, Ann Schwartz¹, Douglas Bauer¹, Jane Cauley², Kristine Ensrud³, Nicola Napoli⁴. ¹University of California, San Francisco, United States, ²University of Pittsburgh, United States, ³Department of Medicine and Epidemiology & Community Health, University of Minnesota, United States, ⁴Unit of Endocrinology and Diabetes, University Campus Bio-Medico, Rome, Italy, and Division of Bone and Mineral Diseases, Washington University in St Louis, St Louis, Missouri, USA, Italy
Disclosures: Dennis Black, None
- 4:00 pm
1090** **Surrogate threshold effect: a novel approach for potential approval of new osteoporosis treatments using change in BMD. Study-level analysis from the FNIH Bone Quality Project**
 *Richard Eastell¹, Eric Vittinghoff², Charles McCulloch², Douglas Bauer², Dennis Black², Li-Yung Liu³, Fernando Marin⁴, Anne de Papp⁵, Rachel Wagman⁶, Sundeep Khosla⁷, Jane Cauley⁸, Mary Bouxsein⁹. ¹University of Sheffield, United Kingdom, ²University of California, San Francisco, United States, ³California Pacific Medical Center, United States, ⁴Eli Lilly and Company, United States, ⁵Merck & Co., Inc., Kenilworth, NJ USA, United States, ⁶Amgen Inc., Thousand Oaks, CA, United States, ⁷Mayo Clinic Center for Clinical and Translational Science, United States, ⁸Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, United States, ⁹Center for Advanced Orthopedic Studies, Beth Israel Deaconess Medical Center and Harvard Medical School, United States
Disclosures: Richard Eastell, Amgen Inc., Consultant, Amgen Inc., Grant/Research Support

CONCURRENT ORALS: GREG MUNDY MEMORIAL SESSION: BONE TUMORS AND METASTASIS

2:45 pm - 4:15 pm

**Orange County Convention Center
Valencia Ballroom A**

Moderators

James Edwards, PhD
 University of Oxford, United Kingdom

Jean Jiang, PhD
 University of Texas Health Science Center at San Antonio, United States

- 2:45 pm
1091** **ASBMR 2019 Annual Meeting Young Investigator Award**
Bone-Targeted Inhibition of Notch Signaling Blocks Tumor Growth and Prevents Bone Loss Without Inducing Gut Toxicity In Immunodeficient and Immunocompetent Murine Models of Established Multiple Myeloma
 *Adam Ferrari¹, Kevin McAndrews¹, Jessica Nelson¹, James Bell¹, G. David Roodman¹, Teresita Bellido¹, Jesus Delgado-Calle¹, Venkatesan Srinivasan², Frank H. Ebetino², Robert K. Boeckman Jr². ¹Indiana University School of Medicine, United States, ²University of Rochester, United States
Disclosures: Adam Ferrari, None
- 3:00 pm
1092** **ASBMR 2019 Annual Meeting Young Investigator Award**
Epigenetic activation of LIFR and stimulation of pro-dormancy genes by HDAC inhibitors promotes tumor dormancy in breast cancer cells that home to bone
 *Miranda E. Clements¹, Lauren D. Holtslander¹, Courtney M. Edwards¹, Vera Todd¹, Samuel Dooyema¹, Rachelle W. Johnson². ¹Vanderbilt University, United States, ²Vanderbilt University Medical Center, United States
Disclosures: Miranda E. Clements, None
- 3:15 pm
1093** **RGS12 is a potential tumor suppressor of osteosarcoma and lung metastasis via negatively regulating YAP-TEAD1-ezrin signaling**
 *Yang Li¹, Shuying Yang¹. ¹University of Pennsylvania, United States
Disclosures: Yang Li, None

ASBMR 2019 Annual Meeting Young Investigator Award

3:30 pm
1094

PTH-induced bone anabolism promotes systemic breast cancer growth and metastasis

*Yetki Aslan¹, Lea Hanna Doumit Sakr¹, Judith Luce¹, Rafailia Vakasiri¹, Claire-Sophie Devignes¹, Sylvain Provot¹, *Yetki Aslan², Lea Hanna Doumit Sakr², Judith Luce², Rafailia Vakasiri², Claire-Sophie Devignes², Sylvain Provot². ¹INSERM U1132 And Paris Diderot University, France, ²Inserm U1132 and Paris Diderot University, Belgium

Disclosures: Yetki Aslan, None

3:45 pm
1095

Ectopic Osterix (OSX) positive stromal cells in the tumor microenvironment enhance tumor growth and express CD45

*Biancamaria Ricci¹, Sahil Mahajan¹, Roberta Faccio¹, Francesca Fontana², Roberto Civitelli², Danielle Ketterer³. ¹Washington University in St Louis - Orthopaedic Surgery, United States, ²Washington University in St Louis - Internal Medicine, United States, ³Washington University in St Louis - Medical Oncology, United States

Disclosures: Biancamaria Ricci, None

4:00 pm
1096

JAB1 Promotes Osteosarcoma and Chondrosarcoma Pathogenesis and Is a Novel Target for Clinical Intervention

*William Samsa¹, Murali Mamida¹, Lindsay Bashur¹, Robin Elliott¹, Ricky Chan¹, David Danielpour¹, Guang Zhou¹. ¹Case Western Reserve University, United States

Disclosures: William Samsa, None

CONCURRENT ORALS: MUSCULOSKELETAL PROGENITORS AND LINEAGE DETERMINATION

2:45 pm - 4:15 pm

Orange County Convention Center
W315

Moderators

Brya Matthews, PhD

University of Auckland, New Zealand

Jonathan Rios, PhD

Texas Scottish Rite Hospital for Children, United States

2:45 pm
1097

Smad-dependent BMP signaling in cranial neural crest cells directs their cell fate towards chondrogenic lineage to cause midline craniosynostosis

*Jingwen Yang¹, Haichun Pan¹, Masako Toda¹, Fei Liu¹, Yuji Mishina¹, Megumi Kitami², Mamoru Ishii³, Robert Maxson³, Yoshihiro Komatsu⁴. ¹Department of Biologic and Materials Sciences, School of Dentistry, University of Michigan, United States, ²Department of Pediatrics, The University of Texas Medical School at Houston, United States, ³Department of Biochemistry and Molecular Biology, Keck School of Medicine, University of Southern California, United States, ⁴Department of Pediatrics, The University of Texas Medical School at Houston, Houston, TX 77030, United States

Disclosures: Jingwen Yang, None

ASBMR 2019 Annual Meeting Young Investigator Award

3:00 pm
1098

Presence of Lgr6, an Adult Stem Cell Marker and Auxiliary Wnt receptor, in the Periosteum

*Laura Doherty¹, Archana Sanjay¹, Sanja Novak¹, Ivo Kalajzic¹, Jessica Lehoczy². ¹UConn Health, United States, ²Brigham and Women's Hospital, United States

Disclosures: Laura Doherty, None

3:15 pm
1099

Diabetes reduces regenerative capacity of periosteal progenitors

*Laura Doherty¹, Archana Sanjay¹, Ivo Kalajzic¹. ¹UConn Health, United States

Disclosures: Laura Doherty, None

- 3:30 pm
1100** **PDGFR β Signaling Drives the Expansion, Recruitment and Blood Vessel Affinity of Skeletal Stem and Progenitor Cells for Bone Repair**
 *Anna-Marei Böhm¹, Naomi Dirckx¹, Robert J. Tower¹, Nicolas Peredo¹, Elena Nefyodova¹, Ruben Cardoen¹, Matthias Van Hul¹, Christa Maes¹, Sebastiaan Vanuytven², Koen Theunis², Thierry Voet², Volkhard Lindner³. ¹Laboratory of Skeletal Cell Biology and Physiology (SCEBP), Skeletal Biology and Engineering Research Center (SBE), KU Leuven, Belgium, ²Laboratory of Reproductive Genomics, Department of Human Genetics, KU Leuven, Belgium, ³Center for Molecular Medicine, Maine Medical Center Research Institute, United States
Disclosures: Anna-Marei Böhm, None
- 3:45 pm
1101** **Macrophage Lineage Hdac3 Deletion Enhances Bone Healing and Limits Osteoclast Fusion via Pmepal**
 *David Molstad¹, Margaret Meyer¹, Jennifer Westendorf¹, Elizabeth Bradley¹. ¹Mayo Clinic, United States
Disclosures: David Molstad, None
- 4:00 pm
1102** **Single-cell analysis unveils cellular plasticity of perisinusoidal marrow stromal cells in bone regeneration**
 *Yuki Matsushita¹, Noriaki Ono¹. ¹University of Michigan, United States
Disclosures: Yuki Matsushita, None

CONCURRENT ORALS: OSTEOCYTES

2:45 pm - 4:15 pm

Orange County Convention Center
W414

Moderators

Mitchell Schaffler, PhD
 City College of New York, United States

Paola Divieti Pajevic, MD, PhD
 Goldman School of Dental Medicine, Boston University, United States

- 2:45 pm
1103** **ASBMR 2019 Annual Meeting Young Investigator Award**
Pinch1/2 regulate bone homeostasis through control of sclerostin expression and bone formation
 *Yishu Wang¹, Qinnan Yan¹, Yiran Zhao¹, Simin Lin¹, Chuanyue Wu¹, Huiling Cao¹, Yumei Lai². ¹Department of Biology and Guangdong Provincial Key Laboratory of Cell Microenvironment and Disease Research, Southern University of Science and Technology, Shenzhen 518055, China, ²Department of Orthopedic Surgery, Rush University Medical Center, Chicago, IL 60612, USA, United States
Disclosures: Yishu Wang, None
- 3:00 pm
1104** **ASBMR 2019 Annual Meeting Young Investigator Award**
Diminished Mechanosensing of Murine Osteocytes in Newly Formed Cortical Bone Following Short-Term Sclerostin Antibody Treatment is Restored Following Long-Term Treatment
 *Andrea Morrell¹, X. Edward Guo¹, Samuel Robinson², Hua Zhu Ke³, Gill Holdsworth⁴. ¹Columbia University, United States, ²Columbia University, United States, ³Angitia Biopharmaceuticals, China, ⁴UCB Pharma, United Kingdom
Disclosures: Andrea Morrell, UCB and Amgen, Grant/Research Support

- 3:15 pm
1105** **A Novel SP7/OSTN Axis Controls Osteocyte Morphology and Function**
*Jialiang S. Wang¹, Fatemeh Mirzamohammadi¹, Daniel Rotter¹, Christian D. Castro Andrade¹, Henry M. Kronenberg¹, Marc N. Wein¹, Hironori Hojo², Melissa Fisceletti³, Craig Munns⁴. ¹Center for Skeletal Research, Endocrine Unit, Department of Medicine, Massachusetts General Hospital, Harvard Medical School, United States, ²Center for Disease Biology and Integrative Medicine, The University of Tokyo Graduate School of Medicine, Japan, ³Pediatric Department, Sainte-Justine University Hospital Centre, Canada, ⁴Institute of Endocrinology and Diabetes, The Children's Hospital at Westmead, Australia
Disclosures: Jialiang S. Wang, None
- 3:30 pm
1106** **A FAK/class IIa HDAC signaling axis controls osteocyte mechanotransduction**
*Tadatoshi Sato¹, Shiv Verma¹, Marc Wein¹, David Lagares². ¹Endocrine Unit, Massachusetts General Hospital and Harvard Medical School, United States, ²Center for Immunology and Inflammatory Diseases, Massachusetts General Hospital and Harvard Medical School, United States
Disclosures: Tadatoshi Sato, None
- 3:45 pm
1107** **ASBMR 2019 Annual Meeting Young Investigator Award**
Rapid lysosomal degradation of sclerostin in osteocytes following mechanical load
*Katrina Williams¹, Humberto Joca¹, James Lyons¹, Manasa Srikanth¹, Nicole Gould¹, Ricardo Feldman¹, Joseph Stains¹, Ramzi Khairallah², Christopher Ward³. ¹University of Maryland School of Medicine, United States, ²Myologica, LLC, United States, ³University of Maryland School of Nursing, United States
Disclosures: Katrina Williams, None
- 4:00 pm
1108** **Conditional Deletion of CaMKK2 from Osteocytes Elicits Sex-Divergent Effects on Bone Remodeling by modulating Osteoclasts**
*Justin Williams¹, Uma Sankar¹, Anuradha Valiya Kambrath¹, Mavis Irwin¹, Nicholas Clough¹. ¹Indiana University School of Medicine, United States
Disclosures: Justin Williams, None

NETWORKING BREAK

4:15 pm - 4:30 pm

Orange County Convention Center
West Hall C

CONCURRENT ORALS: CHONDROCYTES

4:30 pm - 5:45 pm

Orange County Convention Center
W314

Moderators

Sylvain PROVOT, PhD
INSERM, France

Eileen Shore, PhD
University of Pennsylvania, United States

**4:30 pm
1109** **Glut1 is required for growth plate and articular chondrocyte homeostasis during postnatal growth**

*Cuicui Wang¹, Jie Shen¹, Jun Ying¹, Regis O'Keefe¹. ¹Washington University in St Louis, United States

Disclosures: Cuicui Wang, None

- 4:45 pm
1110** **Calcium-sensing Receptors in Chondrocytes Are Required for Post-natal Bone Growth, Callus Maturation, and Fracture Healing in Mice**
*Zhiqiang Cheng¹, Alfred Li¹, Chia-Ling Tu¹, Christian Santa Maria¹, Amanda Herberger¹, Fuqing Song¹, Dolores Shoback¹, Wenhan Chang¹. ¹Endocrine Research Unit, SFVAMC, UCSF, United States
Disclosures: Zhiqiang Cheng, None
- 5:00 pm
1111** **The Transcriptional Cofactor Jab1 Is Crucial for BMP-Mediated Mouse Chondrogenesis by Repressing p53 Activity.**
*Murali Mamidi¹, William Samsa², Ricky Chan³, Guang Zhou⁴. ¹Department of Orthopaedics, Case Western Reserve University., United States, ²Department of Orthopaedics, Case Comprehensive Cancer, Case Western Reserve University., United States, ³Institute for Computational Biology, Case Western Reserve University. , United States, ⁴Department of Orthopaedics, Department of Genetics and Genome Sciences, Case Comprehensive Cancer, Case Western Reserve University. , United States
Disclosures: Murali Mamidi, None
- 5:15 pm
1112** **Oleanolic acid, a natural triterpenoid and inhibitor of Notch pathway as a potential treatment for knee osteoarthritis**
*Hao Zhang¹, Zhengliang Luo¹, Patrick Massey¹, Barton Shane¹, Yufeng Dong¹, Bing Shu², Yongjun Wang². ¹LSUHSC Orthopedics, United States, ²Shanghai University of Traditional Chinese Medicine, China
Disclosures: Hao Zhang, None
- 5:30 pm
1113** **Lin28a reactivation during OA induces chondrocyte reprogramming by HMGA2**
*Yohan Jouan¹, Benoît Bardèche-Trystram¹, Joanna Sanna¹, Eric Hay¹, Augustin Latourte², Pascal Richette², Hang-Korgn Ea², Martine Cohen-Solal². ¹Paris Diderot University, Inserm 1132, France, ²Paris Diderot University, Inserm 1132, Hôpital Lariboisière, France
Disclosures: Yohan Jouan, None

CONCURRENT ORALS: CUTTING EDGE TECHNOLOGIES IN THE CLINIC

4:30 pm - 5:45 pm

**Orange County Convention Center
W414**

Moderators

Marcella Walker, MD
Columbia University, United States

Lorraine Fitzpatrick, MD
Radius Pharm, United States

- 4:30 pm
1114** **Exploring whole exomes in young women with pregnancy and lactation associated osteoporosis**
*Su Jin Lee¹, Sun Yong Song¹, Yumie Rhee¹, Jeessoo Chae². ¹Yonsei University College of Medicine, Republic of Korea, ²Department of Biomedical Sciences, Seoul National University Graduate School, Republic of Korea
Disclosures: Su Jin Lee, None

4:45 pm
1115

Towards personalized medicine using combinations of different BMD-related genetic risk scores for separate prediction of hip, wrist and vertebral fractures as well as of trabecular and cortical bone

*Nethander Maria¹, Liesbeth Vandenput¹, Claes Ohlsson¹, Ulrika Pettersson-Kymmer², Mattias Lorentzon³, Dan Mellström³, Magnus Karlsson⁴. ¹Centre for Bone and Arthritis Research, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, Sweden, ²Clinical Pharmacology, Department of Pharmacology and Clinical Neuroscience, Umea University, Umea, Sweden, Sweden, ³Geriatric Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, Sweden, ⁴Clinical and Molecular Osteoporosis Research Unit, Department of Orthopedics and Clinical Sciences, Lund University, Skåne University Hospital, Sweden, Sweden

Disclosures: Nethander Maria, None

5:00 pm
1116

Gene expression imputation identifies candidate genes associated with osteoporosis

*Yong Liu¹, Hong Wen Deng¹, Hui Shen², Greenbaum Jonathan², Kuan-Jui Su², Anqi Liu². ¹Department of Biostatistics and Bioinformatics, Tulane University, New Orleans 70112, LA, USA, United States, ²Department of Biostatistics and Bioinformatics, Tulane University, United States

Disclosures: Yong Liu, None

5:15 pm
1117

ASBMR 2019 Annual Meeting Young Investigator Award

A Novel Fracture Prediction Model Using Machine Learning in Community-Based Cohort Study

*Sung Hye Kong¹, Jung Hee Kim¹, Chan Soo Shin¹, Daehwan Ahn², Buomsoo (Raymond) Kim³, Karthik Srinivasan³, Sudha Ram³, Nam H. Cho⁴. ¹Department of Internal Medicine, Seoul National University College of Medicine, Republic of Korea, ²Department of Operations, Information and Decisions, Wharton School, University of Pennsylvania, United States, ³Department of Management Information Systems, Eller College of Management, University of Arizona, United States, ⁴Department of Preventive Medicine, Ajou University School of Medicine, Republic of Korea

Disclosures: Sung Hye Kong, None

5:30 pm
1118

Do machine learning techniques improve prediction of bone mineral density? A comparative analysis of genomic data from 5,103 Individuals with 1,103 SNPs in Mr.OS Study

*Qing Wu¹, Bibek Bhattacharai², Fatma Nasoz². ¹Department of Environmental & Occupational Health School of Public Health University of Nevada, Las Vegas, United States, ²Department of Computer Science, University of Nevada, Las Vegas, United States

Disclosures: Qing Wu, None

CONCURRENT ORALS: NUTRITION AND PHARMACOLOGY OF BONE

4:30 pm - 5:45 pm

Orange County Convention Center

W315

Moderators

Richard Prince, FRACP, MD, MBBS
University of Western Australia, Australia

Xiaowei Liu, PhD
University of Pennsylvania, United States

4:30 pm
1119

Microbiota Produced Butyrate Is Required for the Anabolic Effects of PTH in Bone

*Jau-Yi Li¹, Mingcan Yu¹, Abdul Malik Tyagi¹, Jonathan Adam¹, Rheinalt M. Jones¹, Roberto Pacifici¹. ¹School of Medicine, Emory University, United States

Disclosures: Jau-Yi Li, None

ASBMR 2019 Annual Meeting Young Investigator Award

Named in Memory of Robert Heaney

4:45 pm
1120

1,25(OH)2D Plays an Important Role in the Prevention of Mandibular Osteoporosis via the Deacetylase Sirtuin-1 (Sirt1)

*Haiyun Chen¹, Xiaoqing Hu¹, Guoping Wu¹, Dengshun Miao¹, David Goltzman². ¹Nanjing Medical University, China, ²McGill University, Canada

Disclosures: Haiyun Chen, None

5:00 pm
1121

S-Allylmercapto-N-Acetylcysteine (ASSNAC) Attenuates Alendronate-Induced Oxidative Stress in the Bone Marrow and Improves Bone Morphometry in Ovariectomized Mice

*Itay Bleichman¹, Naphtali Savion¹, Shlomo Kotev-Emeth¹, Yankel Gabet². ¹Department of Human Molecular Genetics and Biochemistry, Sackler Faculty of Medicine, Tel Aviv University, Israel, ²Department of Anatomy and Anthropology, Sackler Faculty of Medicine, Tel Aviv University, , Israel

Disclosures: Itay Bleichman, None

5:15 pm
1122

Engineering Abaloparatide to Accumulate Locally in Fracture Calluses Following Systemic Administration

*Stewart Low¹, Jeffery Nielsen², Gert Breur², Yava Jones-Hall², Cheyanne Woolwine², Jonathan Hicks², Philip Low². ¹Purdue University, United States, ²Purdue, United States

Disclosures: Stewart Low, Novosteo INC, Major Stock Shareholder

5:30 pm
1123

Involvement of the gut microbiota and barrier function in glucocorticoid induced osteoporosis.

*Jonathan Schepper¹, Fraser Collins¹, Naomy Rios-Arce¹, Narayanan Parameswaran¹, Laura McCabe¹, Laura Schafer², Rob Britton², Joseph Gardinier³. ¹Michigan State University, United States, ²Baylor College of Medicine, United States, ³Henry Ford Health System Bone and Joint Center, United States

Disclosures: Jonathan Schepper, None

CONCURRENT ORALS: OSTEOPOROSIS OUTCOMES

4:30 pm - 5:45 pm

Orange County Convention Center
Valencia Ballroom A

Moderators

Willem Lems, Ph.D.

Vrije Universiteit Medical Centre, Netherlands

Suzanne Morin, MD, MS

McGill University, Canada

4:30 pm
1124

The association of bone turnover during the menopause transition and subsequent fracture: results from the Study of Women's Health Across the Nation

*Albert Shieh¹, Gail Greendale¹, Arun Karlamangla¹, Jane Cauley². ¹UCLA, United States, ²University of Pittsburgh, United States

Disclosures: Albert Shieh, None

4:45 pm
1125

Racial Disparities Exist in Outcomes Post Major Fragility Fractures

*Nicole Wright¹, Ligong Chen¹, Jeffrey Curtis², Kenneth Saag², Cynthia Brown³, James Shikany⁴. ¹Department of Epidemiology, University of Alabama at Birmingham, United States, ²Division of Clinical Immunology and Rheumatology, University of Alabama at Birmingham, United States, ³Division of Gerontology, Geriatrics, and Palliative Care, University of Alabama at Birmingham, United States, ⁴Division of Preventive Medicine, University of Alabama at Birmingham, United States

Disclosures: Nicole Wright, Amgen, Grant/Research Support

5:00 pm 1126	ASBMR 2019 Annual Meeting Young Investigator Award Implementation of Fracture Liaison Services in two Swedish hospitals was associated with reduced risk of recurrent clinical fractures in patients with osteoporotic fracture *Kristian Axelsson ¹ , Mattias Lorentzon ² , Dan Lundh ³ , Helena Johansson ⁴ , Michael Möller ⁵ . ¹ Institute of Medicine, Sahlgrenska Academy, Gothenburg University and Skaraborgs Sjukhus Skövde, Sweden, Sweden, ² Institute of Medicine, Sahlgrenska Academy, Gothenburg University and Sahlgrenska University Hospital, Mölndal, Sweden, Sweden, ³ Jönköping University, Sweden, ⁴ Institute for Health and Aging, Australian Catholic University, Australia, ⁵ Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg and Sahlgrenska University Hospital, Sweden, Sweden <i>Disclosures:</i> Kristian Axelsson, None
5:15 pm 1127	ASBMR 2019 Annual Meeting Young Investigator Award Associations Between Health Service Use and Quality of Life 4-months After Osteoporotic Fracture in Older Adults: An Analysis of Data from the Australian Arm of the International Cost and Utility Related to Osteoporotic Fractures Study (AusICUROS) *Jason Talevski ¹ , Kerrie Sanders ¹ , Gustavo Duque ¹ , Alison Beauchamp ¹ , Sara Vogrin ¹ , Sharon Brennan-Olsen ¹ , Catherine Connaughton ² , Karen Lim ² , Amanda Stuart ³ . ¹ Australian Institute for Musculoskeletal Science (AIMSS), Australia, ² Australian Catholic University, Australia, ³ Deakin University, Australia <i>Disclosures:</i> Jason Talevski, None
5:30 pm 1128	The Distribution of Increases in Hip Cortical Volumetric BMD in Patients Treated with Denosumab and Bisphosphonates by 3D Modeling of Hip DXA *Mohammed Almohaya ¹ , Renaud Winzenrieth ² , David Kendler ³ . ¹ King Fahad Medical City, Saudi Arabia, ² Galgo Medical, Spain, ³ University of British Columbia, Canada <i>Disclosures:</i> Mohammed Almohaya, None

ASBMR TOWN HALL MEETING

6:00 pm - 7:00 pm	Orange County Convention Center W308
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ADULT BONE AND MINERAL WORKING GROUP

7:15 pm - 10:00 pm	Orange County Convention Center W304 AB
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Co-Chairs

Suzanne Jan de Beur, MD
Johns Hopkins, United States

Michael Collins, MD
National Institute of Health, United States

Anne Schafer, MD
University of California, San Francisco, United States

7:15	Opening Remarks, Dinner, and Introduction of Co-Chairs
7:30	Historical Vignette “Causes and Treatment of Bone Fragility in Secondary Osteoporosis: An Unexpected, but Rewarding Journey” Peter Ebeling, MBBS, MD, FRACP. Monash University, Australia
8:00	The Evolving Story of FGF23 and Erythropoietin Hartley IR, Kamilaris CD, Collins MT. NIDCR. National Institutes of Health. Bethesda, United States

- 8:15 X-linked Hypophosphatemia and Hypoparathyroidism: Correction of Renal Phosphate Wasting Despite Markedly Elevated C-terminal and Intact FGF23**
McKenna MJ^{1,3}, Crowley R^{1,3}, Twomey PJ^{2,3}, Kilbane MT^{2,3}, Departments of ¹Endocrinology and ²Clinical Chemistry, St. Vincent's University Hospital, Dublin, and ³UCD School of Medicine and Medical Science, University College Dublin, Ireland.
- 8:30 Continuous Subcutaneous Delivery of rhPTH(1-84) by Pump in Adults with Hypoparathyroidism.**
Bove-Fenderson E¹, Wong D², Cusano N³, Mannstadt M^{1,4}, ¹Endocrine Unit, Massachusetts General Hospital, United States; ²Sutter Health, United States; ³Department of Medicine, Lenox Hill Hospital, United States; ⁴Harvard Medical School, United States
- 8:45 Raine Syndrome as a Rare Cause of Hypophosphatemia and Osteosclerosis in an Adult.**
Mamedova EO, Davtyan DA, Przhivalkovskaya EG, Vasilyev EV, Tiulpakov AN, Belaya ZE. The National Medical Research Centre for Endocrinology, Russia.
- 9:00 A Case of Multiple, Recurrent Vertebral Compression Fractures with Two Heterozygous Mutations of the LUNATIC FRINGE (LFNG) gene.**
Hong N¹, Rhee Y¹. ¹ Department of Internal Medicine, Severance Hospital, Endocrine Research Institute, Yonsei University College of Medicine, Korea.
- 9:15 Novel Use of Burosumab in Refractory Iron-induced FGF23 Mediated Hypophosphataemic Osteomalacia.**
Amarnani R¹, Pinedo-Villanueva R¹, Shine B², Partington K³, Keshav S⁴, Travis S⁴, Javaid MK¹. ¹ Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, The University of Oxford, United Kingdom, ² Department of Clinical Biochemistry, Oxford University Hospitals NHS Trust, United Kingdom, ³ Department of Radiology, Oxford University Hospitals NHS Trust, Oxford, United Kingdom, ⁴ Translational Gastroenterology Unit, NIHR Oxford Biomedical Research Centre, Oxford University Hospitals NHS Foundation Trust, United Kingdom.
- 9:30 Pain in the Neck – An Unusual Presentation of Myositis Ossificans.**
Gruber L, Wermers R. Department of Medicine, Mayo Clinic, United States
- 9:45 Postsurgical Hypoparathyroidism and Hungry Bone Syndrome after Total Parathyroidectomy for Renal Hyperparathyroidism in a Patient with Possible Nail Patella Syndrome.**
Folick A¹, Fu P¹, Schafer AL^{1,2}, Shoback DM^{1,2}. ¹Division of Endocrinology and Metabolism, University of California, San Francisco, CA; ²Endocrine Research Unit, Department of Veterans Affairs Medical Center, San Francisco, CA.
- 10:00 Presentation of the Boy Frame Award to Dr Peter Ebeling**

PEDIATRIC BONE AND MINERAL WORKING GROUP

Supported by educational grants from Biomarin, Regeneron, Ultrasgenyx and QED therapeutics

7:15 pm - 9:30 pm

**Orange County Convention Center
W304 EFG**

- 7:15 pm Opening Remarks and Dinner**
- 7:20 pm Presentation of the First Annual Pediatric Working Group Award for Contributions to Children's Bone health**
- 7:20 pm My Journey Through Science and Pediatrics**
*Francis Glorieux, OC, MD, PhD. Emeritus Director of Research, Shriners Hospital for Children, Canada; Emeritus Professor of Surgery, Pediatrics and Human Genetics, McGill University, Canada

8:05 pm	Practical and Ethical Challenges in Pediatric Rare Disease Clinical Trials *Emil Kakkis, MD, PhD. President and Chief Executive Officer, Ultragenyx Pharmaceutical Inc., United States; Founder, EveryLife Foundation for Rare Diseases, United States
	Scientific Abstract Presentations
8:45 pm	Low dose, daily or intermittent administration of infigratinib (BGJ398), a selective FGFR inhibitor, as treatment for achondroplasia in a preclinical mouse model *Laurence Legeai-Mallet, PhD. INSERM U1163, Imagine Institute, Paris University
8:55 pm	Molecular Mechanisms for Pamidronate Rescue of Post-burn Muscle Loss in Children *Gordon Klein, MD, MPH. Department of Orthopaedic Surgery, University of Texas Medical Branch
9:05 pm	Detection of GNAS Mutations in Circulating Cell Free DNA in Patients with Fibrous Dysplasia of bone/McCune Albright Syndrome *Kelly Roszko, MD, PhD. NIDCR, National Institutes of Health
9:15 pm	Intact mouse model to determine bioavailability of phosphorus from amino-acid based formulas with different mineral sources Sampada Chande, Ph.D. Yale University School of Medicine
9:25 pm	Closing Remarks

WORKING GROUP ON AGING

7:15 pm - 9:30 pm	Orange County Convention Center W307 A
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Moderators
Lynda Bonewald, PhD
Indiana University School of Medicine, United States

Deborah Kado, MD, MS
University of California San Diego, United States

7:15 pm	Opening Remarks and Dinner
7:30 pm	Longitudinal trajectories of change in the mouse frailty index as a biomarker of lifespan and healthspan *Rafa de Cabo, PhD. Translational Gerontology Branch, NIH NIA
8:00 pm	Leveraging a Sex-Dependent Brain-Bone Circuit to Build Dense, Strong Bones During Aging *Holly Ingraham, PhD. University of California, San Francisco, United States
8:30 pm	Biomarkers for Human Aging *Steve Cummings, MD, FACP. University of California, San Francisco, United States
9:00 pm	Open Discussion

DIVERSITY IN BONE AND MINERAL RESEARCH NETWORKING RECEPTION

7:30 pm - 9:00 pm

**Hyatt Regency Orlando
Manatee Springs Ballroom**

This reception provides attendees the opportunity to meet other attendees and ASBMR leadership, including the ASBMR Diversity in Bone and Mineral Research Subcommittee, in an interactive environment. Come to network, celebrate diverse members of ASBMR, and learn how the Diversity in Bone and Mineral Research Subcommittee is working to promote inclusiveness and participation of the Society's diverse members, particularly focusing on individuals from underrepresented racial and ethnic groups and individuals with disabilities.

MONDAY, SEPTEMBER 23, 2019

DAY-AT-A-GLANCE

Time/Event/Location

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Industry Supported Symposium: Hypoparathyroidism - Diagnosis and Management in 2019 <i>W308</i>	
7:30 AM - 2:00 PM.....	61
Registration Open <i>Valencia Ballroom Lobby</i>	
8:00 AM - 9:15 AM.....	62
Plenary Orals: Bone Cell Development and Function <i>W414</i>	
8:00 AM - 9:15 AM.....	63
Plenary Orals: Rare Bone Diseases: Translational Studies <i>Valencia Ballroom A</i>	
9:30 AM - 2:00 PM.....	64
Posters Open <i>West Hall C</i>	
9:30 AM - 9:45 AM.....	64
Networking Break <i>West Hall C</i>	
9:30 AM - 2:30 PM.....	64
Discovery Hall Open <i>West Hall C</i>	
9:45 AM - 11:00 AM.....	64
Symposium: Bone Pain <i>W414</i>	
9:45 AM - 11:00 AM.....	65
Symposium: Transgender Medicine and Bone <i>Valencia Ballroom A</i>	
11:00 AM - 11:15 AM.....	65
Networking Break <i>West Hall C</i>	
11:15 AM - 12:00 PM.....	66
Late-Breaking Concurrent Orals: Basic and Translational I <i>W314</i>	
11:15 AM - 12:00 PM.....	66
Late-Breaking Concurrent Orals: Basic and Translational II <i>W315</i>	
11:15 AM - 12:00 PM.....	67
Late-Breaking Concurrent Orals: Clinical I <i>Valencia Ballroom A</i>	
11:15 AM - 12:00 PM.....	68
Late-Breaking Concurrent Orals: Clinical II <i>W414</i>	

Monday

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Poster Session III <i>West Hall C</i>	
12:00 PM - 2:00 PM	68
Late-Breaking Posters III <i>West Hall C</i>	
12:15 PM - 1:05 PM	69
Oral Poster Session III <i>West Hall C</i>	
2:00 PM - 3:15 PM	69
Concurrent Orals: Clock and Cytokines Regulation <i>W314</i>	
2:00 PM - 3:15 PM	70
Concurrent Orals: Mechanobiology and Muscle Interactions <i>W315</i>	
2:00 PM - 3:15 PM	71
Concurrent Orals: Osteoclasts <i>W414</i>	
2:00 PM - 3:15 PM	72
Concurrent Orals: Osteoporotic Fracture Prediction <i>Valencia Ballroom A</i>	
3:15 PM - 4:00 PM	74
Closing Reception <i>Valencia Foyer</i>	

MONDAY, SEPTEMBER 23, 2019

INDUSTRY SUPPORTED SYMPOSIUM: HYPOPARATHYROIDISM - DIAGNOSIS AND MANAGEMENT IN 2019

Supported by an educational grant from Takeda

6:00 am - 7:45 am

Orange County Convention Center
W308

- | | |
|----------------|--|
| 6:00 am | Registration and Breakfast Buffet |
| 6:15 am | Introductions, Disclosures |
| 6:20 am | Current Diagnosis and Management Recommendations
Lars Rejnmark, MD, PhD, DMSc
Aarhus University, Consultant at the Aarhus University Hospital, Aarhus, Denmark
<i>Disclosures:</i> Speaker fees, research contracts/grants and/or consulting from: Amgen, Eli Lilly, Novo Nordisk, Shire/Takeda Pharmaceuticals, Boehringer Ingelheim Denmark, Alexion, Ultragenyx, Ascendis Pharma, Kyowa Kirin |
| 6:35 am | Long Term Complications
Maria Luisa Brandi, MD, PhD
University of Florence Medical School, Florence, Italy
<i>Disclosures:</i> Will disclose relevant financial information on site |
| 6:50 am | Hypoparathyroidism and Pregnancy
Aliya Khan, MD, FRCPC, FACP, FACE
McMaster University, Oakville, Ontario, Canada
<i>Disclosures:</i> Research grants as a researcher and speaker honoraria from Amgen, Alexion, and Shire |
| 7:05 am | PTH Replacement Therapy
Natalie Cusano, MD
Zucker School of Medicine at Hofstra/Northwell, Lenox Hill Hospital, New York, United States
<i>Disclosures:</i> Honoraria from Shire/Takeda as a speaker and consulting fees from Shire/Takeda and Radius |
| 7:20 am | Panel Discussion, Q&A |
| 7:45 am | Adjourn |
-

REGISTRATION OPEN

7:30 am - 2:00 pm

Orange County Convention Center
Valencia Ballroom Lobby

Monday

PLENARY ORALS: BONE CELL DEVELOPMENT AND FUNCTION

8:00 am - 9:15 am

Orange County Convention Center

W414

Moderators

Mary Farach-Carson, PhD

University of Texas Health Science Center at Houston, School of Dentistry, United States

Kent Soe, PhD, MS

Odense University Hospital, University of Southern Denmark, Denmark

8:00 am 1129 **Intravital imaging of osteoclasts in vivo reveals novel osteoclast fate which may underlie the therapeutic response to Denosumab withdrawal**

*Michelle McDonald¹, Weng Hua Khoo¹, Sindhu Mohanty¹, Rachael Terry¹, Ryan Chai¹, Julian Quinn¹, Jessica Pettitt¹, Ya Xiao¹, Paul Baldock¹, Michael Rogers¹, Peter Croucher¹, Tri Phan¹, Pei Ying Ng², Nathan Pavlos², Mate Biro³. ¹Garvan Institute, Australia, ²University of Western Australia, Australia, ³UNSW, Australia

Disclosures: Michelle McDonald, None

8:15 am 1130 **ASBMR 2019 Annual Meeting Young Investigator Award Glycosaminoglycans are Critical Regulators for Limb Bud Outgrowth**

*Tianyu Sun¹, Dong Yang¹, Jingyi Wu¹, Robert Linhardt¹, Xiaofang Wang¹, Yanlei Yu², Fuming Zhang². ¹Department of Biomedical Sciences, Texas A&M University College of Dentistry, United States, ²Department of Chemistry and Chemical Biology, Rensselaer Polytechnic Institute, Japan

Disclosures: Tianyu Sun, None

8:30 am 1131 **ASBMR 2019 Annual Meeting Young Investigator Award Smoc1 and Smoc2 Regulate Bone Formation as the Novel Downstream Molecules of Runx2**

*Yoshifumi Takahata¹, Kanta Wakamori¹, Chika Fujiwara¹, Eriko Nakamura¹, Mitsuki Urushizaki¹, Ayaka Kimura¹, Kayon Yu¹, Kenji Hata¹, Tomohiko Murakami¹, Riko Nishimura¹. ¹Osaka University Graduate School of Dentistry, Department of Molecular and Cellular Biochemistry, Japan

Disclosures: Yoshifumi Takahata, None

8:45 am 1132 **ASBMR 2019 Annual Meeting Young Investigator Award Single cell transcriptomics identifies a unique adipocyte population that regulates bone marrow environment**

*Leilei Zhong¹, Robert J Tower¹, Lutian Yao¹, Yulong Wei¹, Jihwan Park¹, Zhen Miao¹, Rojeshi Shrestha¹, Luqiang Wang¹, Wei Yu¹, Yeja Zhang¹, Yanqing Gong¹, Jaimo Ahn¹, Patrick Seale¹, Katalin Susztak¹, Mingyao Li¹, Chider Chen¹, Ling Qin¹, Nicholas Holdreith², Wei Tong³, Fanxin Long⁴. ¹University of Pennsylvania, United States, ²Children's Hospital of Philadelphia and University of Pennsylvania, United States, ³Children's Hospital of Philadelphia and University of Pennsylvania, United States, ⁴The Children's Hospital of Philadelphia, United States

Disclosures: Leilei Zhong, None

ASBMR 2019 Annual Meeting Young Investigator Award

9:00 am
1133

Osteocyte-specific deletion of the auxiliary $\alpha 2\delta 1$ voltage sensitive calcium channel subunit impairs skeletal strength and decreases both lean and fat masses.

*Christian S. Wright¹, Xin Yi¹, William R. Thompson¹, Artur Schneider², Molly Pederson³, Mary C. Farach-Carson⁴, Alexander G. Robling⁵. ¹Department of Physical Therapy, School of Health and Rehabilitation Sciences, Indiana University, United States, ²Department of Physiology, College of Osteopathic Medicine, Marian University, United States, ³School of Science, Indiana University-Purdue University, United States, ⁴Department of Diagnostic and Biomedical Sciences, School of Dentistry, University of Texas, Health Science Center, United States, ⁵Department of Anatomy & Cell Biology, School of Medicine, Indiana University, United States

Disclosures: Christian S. Wright, None

PLENARY ORALS: RARE BONE DISEASES: TRANSLATIONAL STUDIES

8:00 am - 9:15 am

Orange County Convention Center
Valencia Ballroom A

Moderators

Michael Collins, MD

National Institutes of Health, United States

Josephine Tauer, PhD, MS

Shriners Hospital for Children and McGill University, Canada

8:00 am
1134

SMAD3 Somatic Activating Mutations Cause Melorheostosis with an Endosteal Radiographic Pattern by Upregulating the TGF- β /SMAD Pathway

*Heeseog Kang¹, Wayne A. Cabral¹, Joan C. Marini¹, Aleksandra Ivovic², Richard M. Siegel³, Smita Jha³, Nadja Fratzl-Zelman⁴, Zuoming Deng⁵, Apratim Mitra⁶, Ryan K. Dale⁶, Eric P. Hanson⁷, Eileen Lange⁸, James Katz⁸, Paul Roschger⁹, Klaus Klaushofer⁹, Timothy Bhattacharyya¹⁰. ¹Section on Heritable Disorders of Bone and Extracellular Matrix, NICHD, NIH, United States, ²Immunoregulation Section, Autoimmunity Branch, NIAMS, NIH, United States, ³Section on Congenital Disorders, Clinical Center, NIH, United States, ⁴Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUA Trauma Centre Meidling, 1st Medical Department Hanusch Hospital, Austria, ⁵Biodata Mining and Discovery Section, Office of Science and Technology, NIAMS, NIH, United States, ⁶Bioinformatics and Scientific Programming Core, NICHD, NIH, United States, ⁷Immunodeficiency and Inflammation Unit, Autoimmunity Branch, NIAMS, NIH, United States, ⁸Office of the Clinical Director, NIAMS, NIH, United States, ⁹Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK, and AUA Trauma Centre Meidling, 1st Medical Department Hanusch Hospital, Austria, ¹⁰Clinical and Investigative Orthopedics Surgery Unit, NIAMS, NIH, United States

Disclosures: Heeseog Kang, None

8:15 am
1135

4-phenylbutyrate (4PBA) Ameliorates Growth Deficiency in G610C Mouse Model of Osteogenesis Imperfecta

*Amanda Scheiber¹, Akiko Suzuki¹, Motomi Enomoto-Iwamoto¹, Masahiro Iwamoto¹, Satoru Otsuru¹, Sergey Leikin². ¹University of Maryland, Baltimore, School of Medicine, Department of Orthopaedics, United States, ²Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institute of Health, United States

Disclosures: Amanda Scheiber, None

8:30 am
1136

Inhibition of mTOR Induces Autophagy and Improves Skeletal Manifestations of Osteogenesis Imperfecta in Mice

*Ryan J. Russo¹, Wenping Song¹, Mitul Desai¹, Xiaoyou Ying¹, Lily Chai¹, Ann Byrne¹, Yves Sabbagh¹, Oxana Ibraghimov-Beskrovnaya¹, Stefano Zanotti¹. ¹Sanofi, United States

Disclosures: Ryan J. Russo, Sanofi, Other Financial or Material Support

Monday

8:45 am 1137	Local Transplantation of Skeletal Progenitor Cells Improves Bone Properties in Osteogenesis Imperfecta Mice *Benjamin Sinder ¹ , Sanja Novak ¹ , Natalie Wee ¹ , Ivo Kalajzic ¹ . ¹ UConn Health, United States <i>Disclosures:</i> Benjamin Sinder, None
9:00 am 1138	A potential next generation sclerostin inhibitor specifically targets sclerostin monomer for bone anabolic therapy with low cardiovascular risk in osteogenesis imperfecta mice *Qing Ren ¹ , Duoli Xie ¹ , Yuanyuan Yu ¹ , Yuan Tang ¹ , Shuaijian Ni ¹ , Jun Lu ¹ , Aiping Lu ¹ , Ge Zhang ¹ , Sum Yee Chan ² , Bao-Ting Zhang ³ . ¹ Institute for Advancing Translational Medicine in Bone & Joint Diseases (TMBJ), Hong Kong Baptist University, Hong Kong, ² Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Hong Kong, ³ School of Chinese Medicine, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong <i>Disclosures:</i> Qing Ren, None

POSTERS OPEN	
9:30 am - 2:00 pm	Orange County Convention Center West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23. For a full listing of e-poster, poster and late-breaking poster presentations, please refer to the poster section starting on page 105.

NETWORKING BREAK	
9:30 am - 9:45 am	Orange County Convention Center West Hall C

DISCOVERY HALL OPEN	
9:30 am - 2:30 pm	Orange County Convention Center West Hall C

SYMPOSIUM: BONE PAIN	
<i>This activity is supported by educational funding from Baxter Healthcare Corporation</i>	
9:45 am - 11:00 am	Orange County Convention Center W414

Co-Chairs
 Florent Elefteriou, PhD
 Baylor College of Medicine, United States

 Nadia Rucci, PhD
 University of L'Aquila, Italy

9:45 am	Mechanical Activation of Sensory Nerves in Bone Ryan Tomlinson, PhD Thomas Jefferson University, United States <i>Disclosures:</i> Pfizer,13
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10:10 am Mechanistic Analysis of Bone Pain
Tamara King, PhD
University of New England, United States
Disclosures: None

10:35 am **Clinical Approach to Malignant and Nonmalignant Bone Pain**
 Peyman Hadji, MD
 Krankenhaus Nordwest, Dept of Bone Oncology, Germany
Disclosures: None

SYMPOSIUM: TRANSGENDER MEDICINE AND BONE

9:45 am - 11:00 am

**Orange County Convention Center
Valencia Ballroom A**

Co-Chairs

Micol Rothman, MD
University of Colorado- Denver, United States

Leanne Ward, MD
Children's Hospital of Eastern Ontario, Canada

9:45 am Physiological Effects of Estrogen and Testosterone on Bone: Implications for Treatment of Transgender Individuals
Sundeep Khosla, MD
Mayo Clinic College of Medicine, United States
Disclosures: None

10:10 am Gender-Affirming Medical Therapies in Gender Diverse Youth: Skeletal Considerations of Early Pubertal Suppression
Janet Lee, MD, MPH
University of California, San Francisco, United States
Disclosures: None

10:35 am **Effect of Cross-Sex Hormone Therapy on Bone in the Trans Adult Who Begins Treatment After Achieving Peak Bone Mass**
Martin Den Heijer, MD, PhD
VU Medical Center Pb 7057 1007 MB Amsterdam, Netherlands
Disclosures: None

NETWORKING BREAK

11:00 am - 11:15 am

**Orange County Convention Center
West Hall C**

LATE-BREAKING CONCURRENT ORALS: BASIC AND TRANSLATIONAL I

11:15 am - 12:00 pm

Orange County Convention Center
W314

Moderators

Serge Ferrari, MD

Geneva University Hospital and Faculty of Medicine, Switzerland

Ernestina Schipani, MD, PhD

University of Michigan, United States

11:15 am LB-1159 Abaloparatide is more effective than PTH in promoting bone gain under physiological conditions and in established Type 1 Diabetes in male mice

*Serra Ucer Ozgurel¹, Kevin McAndrews¹, David Halladay¹, Amy Yoshiko Sato¹, Meloney Cregor¹, Jessica Nelson², Teresita Bellido³. ¹Department of Anatomy and Cell Biology, Indiana University School of Medicine, Indianapolis, IN, Roudebush Veterans Administration Medical Center, Indianapolis, IN, United States, ²Hematology/Oncology, Indiana University School of Medicine, Indianapolis, IN, United States, ³Department of Anatomy and Cell Biology, Indiana University School of Medicine, 2Department of Medicine, Division of Endocrinology, Indiana University School of Medicine, 3Roudebush Veterans Administration Medical Center, Indianapolis, IN, United States

Disclosures: Serra Ucer Ozgurel, None

11:30 am LB-1160 Tendon Mechanical Property Degradation Associated With Osteoporosis: A Study In An Ovine Model

*James Johnson¹, Kirk McGilvray¹, Jeremiah Easley¹, Brad Nelson¹, Eileen Hackett¹, Ben Gadomski¹. ¹Colorado State University, United States

Disclosures: James Johnson, None

11:45 am LB-1161 A Brain-Dependent Osteogenic Factor Dramatically Enhances the Capacity of Skeletal Stem Cells to form Bone in Female Mice

*Candice Herber¹, Patrick Ventura¹, Saul Villeda¹, Holly Ingraham¹, Thomas Ambrosi², Charles Chan², Nancy Lane³. ¹University of California, San Francisco, United States, ²Stanford University, United States, ³University of California, Davis, United States

Disclosures: Candice Herber, None

LATE-BREAKING CONCURRENT ORALS: BASIC AND TRANSLATIONAL II

11:15 am - 12:00 pm

Orange County Convention Center
W315

Moderator

Jonathan Lowery, PhD

Marian University College of Osteopathic Medicine, United States

Sara McBride-Gagyi, PhD

Saint Louis University, United States

11:15 am LB-1162 FGF23 Promotes Disease Progression in 5/6-Nephrectomized Mice By WNK and Proinflammatory Signaling

*Olena Andrukhova¹, Nejla Latic¹, Judith Radloff¹, Svetlana Slavic¹, Lukas Endler¹, Sathish Murali¹, Jessica Bayer¹, Ute Zeitz¹, Ulrike Pfeiffenberger¹, Simone Tangermann¹, Sabine Lagger¹, Julia Wilflingseder¹, Lukas Kenner¹, Birgit Strobl¹, Reinhold Erben¹, Christoph Kornauth², Rainer Oberbauer², Dario Alessi³. ¹University of Veterinary Medicine Vienna, Austria, ²Medical University Vienna, Austria, ³University of Dundee, United Kingdom

Disclosures: Olena Andrukhova, None

- 11:30 am**
LB-1163 **Inhibition of FGFR signaling partially rescues osteoarthritis in mice overexpressing high-molecular-weight FGF2**
*Liping Xiao¹, Donyell Williams¹, Marja Hurley¹. ¹UConn Health, United States
Disclosures: Liping Xiao, None
- 11:45 am**
LB-1164 **A NaPi2a-selective inhibitor improves hyperphosphatemia in Fgf23-null and CKD mice**
*Hiroshi Saito¹, Monica Reyes¹, Harald Jüppner¹. ¹Massachusetts General Hospital and Harvard Medical School, United States
Disclosures: Hiroshi Saito, None

LATE-BREAKING CONCURRENT ORALS: CLINICAL I

11:15 am - 12:00 pm

**Orange County Convention Center
Valencia Ballroom A**

Moderator

Kate Ward, PhD

MRC Lifecourse Epidemiology, University of Southampton, United Kingdom

Roger Bouillon, MD, PhD

Katholieke Universiteit Leuven, Belgium

- 11:15 am**
LB-1165 **Improvements in adolescent bone persist three years after resistance training intervention**
*Tamara Scerpella¹, Jill Thein-Nissenbaum¹, Stephanie Kliethermes¹, Deena Weiss².
¹University of Wisconsin, United States, ²none, United States
Disclosures: Tamara Scerpella, None
- 11:30 am**
LB-1166 **Trabecular-Cortical Interface Surface Area Metric (iSAM): an Intuitive & Novel Whole Bone Morphological Parameter That Strongly Correlates with Finite Element Predicted Stiffness of Clinical HR-pQCT Scans**
*Samuel Robinson¹, X. Edward Guo¹. ¹Columbia University, United States
Disclosures: Samuel Robinson, None
- 11:45 am**
LB-1167 **Compared with Daily Teriparatide, Cycles of Teriparatide and Raloxifene Favorably Influence Hip BMD and Cortical Thickness While Comparably Increasing Spine BMD**
*Heenam Goel¹, Diane Krueger², Greta Borchardt³, Neil Binkley³. ¹Division of Endocrinology, University of Wisconsin, United States, ²Osteoporosis Research Program, United States, ³Osteoporosis Research Program, United States
Disclosures: Heenam Goel, None

Monday

LATE-BREAKING CONCURRENT ORALS: CLINICAL II

11:15 am - 12:00 pm

Orange County Convention Center
W414

Moderators

Joy Tsai, MD

Massachusetts General Hospital, United States

Robert Adler, MD

McGuire VA Medical Center, United States

11:15 am LB-1168 **Long-term effects of calcium supplementation on abdominal aortic calcification in older women: analysis of a 5-year double-blind randomized controlled trial**

*Joshua Lewis¹, Jonathan Hodgson¹, Wai Lim², Kun Zhu², Richard Prince², John Schousboe³, Elizabeth Byrnes⁴, Richard Woodman⁵, Peter Thompson⁶, Douglas Kiel⁷. ¹Edith Cowan University, Australia, ²University of Western Australia, Australia, ³Park Nicollet Osteoporosis Center and Institute for Research and Education, United States, ⁴PathWest, Sir Charles Gairdner Hospital, Australia, ⁵Flinders University, Australia, ⁶Sir Charles Gairdner Hospital, Australia, ⁷Hinda and Arthur Marcus Institute for Aging Research, Hebrew SeniorLife, United States

Disclosures: Joshua Lewis, None

11:30 am LB-1169 **Treatment with zoledronic acid subsequent to treatment with denosumab**

*Anne Sophie Sølling¹, Torben Harsløf¹, Bente Lomholt Langdahl¹. ¹Aarhus University Hospital, Denmark

Disclosures: Anne Sophie Sølling, None

11:45 am LB-1170 **Effect of denosumab on falls, muscle strength and function in community dwelling older adults**

*Steven Phu¹, Ebrahim Bani Hassan¹, Sara Vogrin¹, Ahmed Al Saedi¹, Gustavo Duque¹, Ben Kirk². ¹Australian Institute for Musculoskeletal Science, The University of Melbourne, Australia, ²Australian Institute for Musculoskeletal Science, Liverpool Hope University, United Kingdom

Disclosures: Steven Phu, None

POSTER SESSION III

12:00 pm - 2:00 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23. For a full listing of Poster Session III presentations, please see page 218.

LATE-BREAKING POSTERS III

12:00 pm - 2:00 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23. For a full listing of Late-Breaking Posters III presentations, please see page 259.

ORAL POSTER SESSION III

12:15 pm - 1:05 pm

Orange County Convention Center
West Hall C

New this year! Come hear a select number of plenary poster presenters give an overview of their poster on digital touch screen displays. Following the oral poster presentations, visit their poster board to ask questions and continue the discussion.

For a full listing of Oral Poster Session III presentations, please see page 218.

CONCURRENT ORALS: CLOCK AND CYTOKINES REGULATION

2:00 pm - 3:15 pm

Orange County Convention Center
W314

Moderators

Luigi Gennari, MD, PhD
University of Siena, Italy

Dobrawa Napierala, PhD
University of Pittsburgh, United States

2:00 pm
1139

Disruption of the Biological Clock Reduces Bone Turnover and Alters Trabecular Architecture and Mineralization

*Elizabeth Winter¹, Nathalie Bravenboer¹, Maaïke Schilperoort², Jan Kroon², Joann Lim², Patrick Rensen², Sander Kooijman², Bjorn Busse³, Kathrin Mletzko³, Leo Ruijven van⁴.
¹Department of Medicine, Division of Endocrinology and Center for Bone Quality, Leiden University Medical Center & Einthoven Laboratory for Experimental Vascular Medicine, Netherlands, ²Department of Medicine, Division of Endocrinology, Leiden University Medical Center & Einthoven Laboratory for Experimental Vascular Medicine, Netherlands, ³Department of Osteology and Biomechanics (IOBM), University Medical Center Hamburg-Eppendorf, Germany, ⁴Department of Functional Anatomy, Academic Centre for Dentistry Amsterdam (ACTA), Netherlands

Disclosures: Elizabeth Winter, None

2:15 pm
1140

Diurnal Changes in Serum Levels of Bone-Related Circulating MicroRNAs

*Patryk Zarecki¹, Richard Eastell¹, Johannes Grillari², Matthias Hackl³. ¹University of Sheffield, United Kingdom, ²Christian Doppler Laboratory on Biotechnology of Skin Aging; Ludwig Boltzmann Institute for Experimental and Clinical Traumatology; TAmiRNA GmbH, Austria, ³TAmiRNA GmbH, Austria

Disclosures: Patryk Zarecki, None

2:30 pm
1141

ASBMR 2019 Annual Meeting Young Investigator Award

Circadian Rhythm Disruption in Combination with High-Fat Diet alters Glycemic Control and impair Bone Health

*Joan LLabre¹, Ruben Trujillo¹, Deepak Vashishth¹, Mariana Figueiro². ¹Department of Biomedical Engineering, Center for Biotechnology and Interdisciplinary Studies, Rensselaer Polytechnic Institute, United States, ²Lighting Research Center, Rensselaer Polytechnic Institute, United States

Disclosures: Joan LLabre, None

2:45 pm
1142

Leukemia cells activate the immune response and seize serotonin signaling in osteoblasts to engraft and proliferate

*Marta Galan-Diez¹, Stavroula Kousteni¹, Junfei Zhao², Raul Rabadan³. ¹Columbia University, Dept. Physiology and Cell Biophysics, United States, ²Columbia University, Dept. of Biomedical Informatics, United States, ³Columbia University, Dept. of Systems Biology, United States

Disclosures: Marta Galan-Diez, None

Monday

3:00 pm
1143

ASBMR 2019 Annual Meeting Young Investigator Award

Differential Signaling between CXCL12 and its Cryptic Bioactive DPP4-Cleaved Isoform Alters Osteogenic Pathways Explaining Complexity of CXCL12 Actions

*Ahmed Elmansi¹, Dmitry Knodrikov¹, Nada Eisa¹, William Hill¹, Sudharsan Periyasamy-
Thandavan², Alexandra Aguilar-Pérez³, Brian Volkman⁴, Carlos Isales⁵, Sadanand Fulzele⁵,
Mark Hamrick⁶, Meghan McGee-Lawrence⁶, Jie Chen⁷. ¹Department of Pathology and
Laboratory Medicine, Medical University of South Carolina, United States, ²Georgia Cancer
Center, Augusta University, Augusta, GA 30912, United States, ³Department of Anatomy
and Cell Biology, Indiana University School of Medicine in Indianapolis, IN, United
States, ⁴Biochemistry Department, Medical College of Wisconsin, Milwaukee, WI 53226,
United States, ⁵Department of Orthopaedic Surgery, Medical College of Georgia, Augusta
University, Augusta, GA 30912, United States, ⁶Cellular Biology and Anatomy, Medical
College of Georgia, Augusta University, Augusta, GA 30912, United States, ⁷Department of
Population Health Science: Biostats & Data Science, Medical College of Georgia, United
States

Disclosures: Ahmed Elmansi, None

**CONCURRENT ORALS: MECHANOBIOLOGY AND MUSCLE
INTERACTIONS**

2:00 pm - 3:15 pm

Orange County Convention Center
W315

Moderators

Benjamin Levi, MD

University of Michigan, United States

Henry Donahue, PhD

Virginia Commonwealth University, United States

2:00 pm
1144

ASBMR 2019 Annual Meeting Young Investigator Award

Gambogic amide augments skeletal adaptation to mechanical loading through actions on both sensory nerves and osteoblasts

*Gabriella Fioravanti¹, Phuong Hua¹, Ryan Tomlinson¹. ¹Thomas Jefferson University,
United States

Disclosures: Gabriella Fioravanti, None

2:15 pm
1145

Increased Expression of FGF21 from Dystrophic Skeletal Muscle Negatively Affects Bone Homeostasis in Dystrophic Mice

*hongshuai Li¹, Baoli qian¹, ling wang¹, MaCalus Hogan¹. ¹University of Pittsburgh, United
States

Disclosures: hongshuai Li, None

2:30 pm
1146

ASBMR 2019 Annual Meeting Young Investigator Award

Irisin Directly Regulates Osteoclastogenesis via α V Integrin Receptors In Vitro and In Vivo

*Eben Estell¹, Phuong Le¹, Yosta Vegting¹, Clifford Rosen¹, Hyeonwoo Kim², Bruce
Spiegelman². ¹Maine Medical Center Research Institute, United States, ²Harvard Medical
School, Dana-Farber Cancer Institute, United States

Disclosures: Eben Estell, None

- 2:45 pm
1147** **ASBMR 2019 Annual Meeting Young Investigator Award**
Interleukin-6 must signal in osteoblasts to favor adaptation to exercise
*Subrata Chowdhury¹, Logan Schulz², Paula Mera³, Jens Brünin⁴, Juan Hidalgo⁵, Gerard Karsenty⁶. ¹Department of Genetics and Development, Columbia University Irving Medical Center, United States, ²Department of Genetics and Development, United States, ³Dept. Biochemistry and Physiology School of Pharmacy & Food Science, University of Barcelona, Spain, Spain, ⁴3 Max Planck Institute for Metabolism Research, Germany, ⁵4 Department of Cellular Biology, Physiology and Immunology Faculty of Biosciences, Universitat Autònoma de Barcelona, Spain, ⁶Department of Genetics and Development, United States
Disclosures: Subrata Chowdhury, None
- 3:00 pm
1148** **ASBMR 2019 Annual Meeting Young Investigator Award**
Wnts produced by osteo-lineage cells are required for loading-induced bone formation in mice
*Lisa Lawson¹, Michael Brodt¹, Matthew Silva¹. ¹Washington University in St Louis, United States
Disclosures: Lisa Lawson, None

CONCURRENT ORALS: OSTEOCLASTS

2:00 pm - 3:15 pm **Orange County Convention Center**
W414

Moderators

Gabriel Mbalaviele, PhD
Washington University in St. Louis School of Medicine, United States

Deborah Galson, PhD
Department of Medicine, University of Pittsburgh School of Medicine, United States

- 2:00 pm
1149** **ASBMR 2019 Annual Meeting Young Investigator Award**
Molecular and cellular analyses of BMP-dependent coupling signals between osteoclasts and osteoblasts during bone remodeling
*Yuji Mishina¹, Maiko Omi¹. ¹University of Michigan, School of Dentistry, Department of Biologic and Materials Sciences & Prosthodontics, United States
Disclosures: Yuji Mishina, None
- 2:15 pm
1150** **ASBMR 2019 Annual Meeting Young Investigator Award**
Diversity in Inflammatory Osteoclasts Contributes to the Modulation of Their Inflammatory Effect and Resorptive Function
*Maria-Bernadette Madel¹, Matthieu Rouleau¹, Antoine Boutin¹, Claudine Blin-Wakkach¹, Lidia Ibáñez², Christophe Hue³, Henri-Jean Garchon³, Isabelle Duroux-Richard⁴, Florence Apparaillay⁴, Abdelilah Wakkach⁵. ¹LP2M, CNRS UMR7370, Université Côte d'Azur, Nice, France, France, ²Department of Pharmacy, Cardenal Herrera-CEU University, Valencia, Spain, Spain, ³INSERM U1173, Faculty of Health Sciences Simone Veil, Université de Versailles Saint-Quentin, Montigny-le-Bretonneux, France, France, ⁴INSERM U1183, Institute for Regenerative Medicine and Biotherapies, Université de Montpellier, Montpellier, France, France, ⁵LP2M, CNRS UMR7370, Université Côte d'Azur, Nice, France., France
Disclosures: Maria-Bernadette Madel, None
- 2:30 pm
1151** **Osteoprotegerin Requires Heparan Sulfate for Its Anti-osteoclastogenic Activity**
*Ding Xu¹, Miaomiao Li¹. ¹University at Buffalo, United States
Disclosures: Ding Xu, None

ASBMR 2019 Annual Meeting Young Investigator Award

**2:45 pm
1152**

Aging and menopause reprogram osteoclast precursors for aggressive bone resorption

*Anaïs MJ Møller¹, Jean-Marie Delaissé², Kent Søb², Jonna S. Madsen³, Luisa M. Canto⁴, Silvia R. Rogatto⁴. ¹Clinical Cell Biology, Lillebaelt Hospital, University of Southern Denmark, Denmark, ²Clinical Cell Biology, Odense University Hospital, University of Southern Denmark, Denmark, ³Department of Clinical Biochemistry and Immunology, Lillebaelt Hospital, Denmark, Denmark, ⁴Department of Clinical Genetics, Lillebaelt Hospital, Denmark, Denmark

Disclosures: Anaïs MJ Møller, None

ASBMR 2019 Annual Meeting Young Investigator Award

**3:00 pm
1153**

Glycosylation of immunoglobulins determine bone loss in multiple myeloma

*Marita Westhlin¹, Vlado Kovacic¹, Anders Sundan¹, Albert Bondt², Stephanie Holst², Zejian Zhang², Tobias Slørdahl³, Anders Waage⁴, Manfred Wuhrer⁵, Therese Standal⁶. ¹Department of Cancer Research and Molecular Medicine, Faculty of Medicine, Norwegian University of Science and Technology (NTNU), Trondheim, Norway, ²Leiden University Medical Center, Albinusdreef 2, 2333ZA Leiden, Netherlands, ³IKOM, NTNU, Norway, ⁴Department of Hematology, St.Olavs University Hospital, Trondheim, Norway, ⁵dLeiden University Medical Center, Albinusdreef 2, 2333ZA Leiden, Netherlands, ⁶Centre of Molecular Inflammation Research (CEMIR), NTNU, Trondheim, Norway

Disclosures: Marita Westhlin, None

CONCURRENT ORALS: OSTEOPOROTIC FRACTURE PREDICTION

2:00 pm - 3:15 pm

**Orange County Convention Center
Valencia Ballroom A**

Moderators

Nicole Wright, PhD

University of Alabama at Birmingham, United States

Maria Carola Zillikens, Ph.D.

Erasmus MC, The Netherlands

**2:00 pm
1154**

Subsequent Fracture Risk Following Traumatic versus Non-traumatic Fracture: A Registry-Based Cohort Study

*William Leslie¹, Lisa Lix¹, John Schousboe², Suzanne Morin³, Patrick Martineau⁴, Helena Johansson⁵, John Kanis⁵, Eugene McCloskey⁶, Nicholas Harvey⁷. ¹University of Manitoba, Winnipeg, Canada, Canada, ²Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US; University of Minnesota, Minneapolis, US, United States, ³McGill University, Montreal, Canada, Canada, ⁴University of Manitoba, Winnipeg, Canada; Harvard Medical School, Boston, US, Canada, ⁵Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK; Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, United Kingdom, ⁶Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, ⁷MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK; NIHR Southampton Biomedical Research Centre, University of Southampton and University Hospital Southampton NHS Foundation Trust, Southampton, UK, United Kingdom

Disclosures: William Leslie, None

2:15 pm
1155

Grade 1 vertebral fractures identified by densitometric lateral spine imaging predict incident fracture independently of clinical risk factors and BMD in older women

*Lisa Johansson¹, Daniel Sundh², Mellström Dan², Anna Nilsson³, Mattias Lorentzon⁴.

¹Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, Sweden,

²Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, Sweden,

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Disclosures: Lisa Johansson, None

2:30 pm
1156

ASBMR 2019 Annual Meeting Young Investigator Award

Site-specific prediction of fractures by BMD and bone microarchitecture in older women and men: The Bone Microarchitecture International Consortium (BoMIC)

*Emmanuel Biver¹, Thierry Chevalley¹, René Rizzoli¹, Serge Ferrari¹, Elizabeth J Samelson², Laiji Yang², Marian T Hannan², Douglas P Kiel², Hanfei Xu³, Ching-Ti Liu³, Serkalem Demissie³, Steven Boyd⁴, Lauren Burt⁴, Pawel Szulc⁵, Roland Chapurlat⁵, Blandine Merle⁵, Elisabeth Sornay-Rendu⁵, Jonathan Adachi⁶, Shreyasee Amin⁷, Elizabeth Atkinson⁷, Sundeep Khosla⁷, Claudie Berger⁸, David Goltzman⁹, David Hanley¹⁰, Eric Lespessailles¹¹, Mattias Lorentzon¹², Dan Mellstrom¹³, Maria Nethander¹⁴, Claes Ohlsson¹⁵, Daniel Sundh¹⁶, Bert van Rietbergen¹⁷, Andy Kin On Wong¹⁸, Mary L Bouxsein¹⁹. ¹Division of Bone Diseases, Geneva University Hospitals and Faculty of Medicine, University of Geneva, Switzerland, ²Marcus Institute for Aging Research, Hebrew SeniorLife, Harvard Medical School, United States, ³Department of Biostatistics, Boston University School of Public Health, United States, ⁴McCaig Institute for Bone and Joint Health, University of Calgary, Canada, ⁵INSERM UMR1033, Université de Lyon, Hôpital Edouard Herriot, France, ⁶Department of Medicine, Michael G. DeGroote School of Medicine, St Joseph's Healthcare - McMaster University, Canada, ⁷Mayo Clinic College of Medicine and Science, United States, ⁸Research Institute of the McGill University Health Centre, Canada, ⁹Departments of Medicine, McGill University and McGill University Health Centre, Canada, ¹⁰McCaig Institute for Bone & Joint Health, University of Calgary, Canada, ¹¹Department of rheumatology, Regional Hospital of Orleans, University of Orleans, France, ¹²Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg and Region Västra Götaland, Geriatric Medicine Clinic, Sahlgrenska University Hospital, Mölndal, Sweden, ¹³Geriatric Medicine and Centre for Bone and Arthritis Research, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, ¹⁴Bioinformatics Core Facility and Centre for Bone and Arthritis Research, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, ¹⁵Centre for Bone and Arthritis Research, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, ¹⁶Geriatric Medicine and Centre for Bone and Arthritis Research, Institute of Medicine, University of Gothenburg, Sweden, ¹⁷Department of Biomedical Engineering, Eindhoven University of Technology, Netherlands, ¹⁸Joint Department of Medical Imaging, University Health Network, Toronto, Canada, ¹⁹Department of Orthopedic Surgery, Harvard Medical School, Center for Advanced Orthopedic Studies, Beth Israel Deaconess Medical Center, United States

Disclosures: Emmanuel Biver, None

2:45 pm
1157

Total Volumetric BMD at the Radius Is Associated with Major Osteoporotic Fractures Independently of Clinical Risk Factors and Femoral Neck BMD in Older Women

*Daniel Sundh¹, Lisa Johansson¹, Dan Mellström¹, Anna G Nilsson¹, Mattias Lorentzon¹.

¹Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, University of Gothenburg, Sweden, Sweden

Disclosures: Daniel Sundh, None

**3:00 pm
1158**

Time Since Prior Fracture is Associated with Subsequent Fracture Risk: An Analysis of Real-World Data

*Emese Toth¹, Cesar Libanati¹, Kristina Åkesson², Anna Spångeus³, Östen Ljunggren⁴, Gustaf Orsäter⁵, Jonas Banefelt⁵. ¹UCB Pharma, Belgium, ²Skåne University Hospital, Lund University, Sweden, ³Linköping University Hospital, Sweden, ⁴Uppsala University, Sweden, ⁵Quantify Research, Sweden

Disclosures: Emese Toth, UCB Pharma, Other Financial or Material Support

CLOSING RECEPTION

3:15 pm - 4:00 pm

**Orange County Convention Center
Valencia Foyer**

WELCOME RECEPTION AND PLENARY POSTER SESSION

5:30 pm - 7:00 pm

Orange County Convention Center
West Hall C

Attendees and registered guests are invited to celebrate the ASBMR 2019 Annual Meeting during our Welcome Reception and Plenary Poster Session in the ASBMR Discovery Hall. Simply display your badge for admission. Guests may purchase a badge for \$50 at the ASBMR Registration Counter for entrance to the Welcome Reception.

ADULT METABOLIC BONE DISORDERS

- FRI-1** **Changes in Cortical Porosity and Bone Strength Through Four Years of rhPTH(1-84) Therapy in Hypoparathyroidism**
*Natalie Cusano¹, Mishaella Rubin², John Williams², Sanchita Agarwal², Rukshana Majeed², Beatriz Omeragic², John Bilezikian², Gaia Tabacco³, Yu-Kwang Donovan Tay⁴. ¹Lenox Hill Hospital, United States, ²Columbia University Medical Center, United States, ³University Campus Bio-Medico, Italy, ⁴Singapore General Hospital, Singapore
Disclosures: Natalie Cusano, Shire/Takeda, Consultant, Shire/Takeda, Speakers' Bureau
- FRI-2** **In vivo detection of vasculature and fat within cortical bone pores: a validation study**
*Brian Leahy¹, Barbara Garita¹, Po-Hung Wu¹, Gabrielle Joseph¹, Misung Han¹, Roland Krug¹, Thomas Link¹, Galateia Kazakia¹. ¹UCSF, United States
Disclosures: Brian Leahy, None
- FRI-3** **An Overview of the Etiology, Clinical Manifestations, Management Strategies, and Complications of Hypoparathyroidism from the Canadian National Hypoparathyroidism Registry**
*Yousef Alalawi¹, Hajar Abu Alrob¹, Haniah Shaikh², Manoela Braga², Zubin Punthakee², Rafik El Werfalli², J.E.M. Young², Aliya Khan², Adam Millar³, Muhammad Shrayyef³, Susan Teschke³, Heather Zariffah⁴, Iman M'Hiri⁴, Tayyab Khan⁵, Adam Waldbilling⁶. ¹McMaster University, Canada, ²McMaster University, Canada, ³University of Toronto, Canada, ⁴Bone Research and Education Centre, Canada, ⁵LCM, Canada, ⁶CHEO, Canada
Disclosures: Yousef Alalawi, None
- FRI-5** **Clinical, Biochemical and Radiological Profile of Normocalcaemic Hyperparathyroidism: a Multicentric Cross-Sectional Evaluation**
*Anda Mihaela Naciu¹, Gaia Tabacco¹, Daria Maggi¹, Luca D'Onofrio¹, Silvia Briganti¹, Nicola Napoli¹, Paolo Pozzilli¹, Silvia Manfredini¹, Andrea Palermo¹, Stefania Falcone², Andrea Fabbri², Assunta Santonati³, Domenico Castellitto³, Alessandro Casini⁴, Roberto Cesario⁴, Diana Lelli⁵, Claudio Pedone⁵. ¹Unit of Endocrinology, University Campus Bio-Medico, Italy, ²Unit of Endocrinology and Metabolic Diseases, CTO A. Alesini Hospital, University Tor Vergata, Italy, ³Department of Endocrinology, San Giovanni Addolorata Hospital, Italy, ⁴Thyroid and Metabolic Bone Diseases Center, Santa Maria Goretti Hospital, Italy, ⁵Unit of Geriatric, University Campus Bio-Medico, Italy
Disclosures: Anda Mihaela Naciu, None
- FRI-8** **Hypophosphatemic osteomalacia induced by long-term low-dose adefovir dipivoxil: Clinical characteristics of 140 cases**
*Jiao Zhao¹, Zhe Wei¹, Zhen-lin Zhang¹. ¹Metabolic Bone Diseases and Genetic Research Unit, Department of Osteoporosis and Bone Diseases, Shanghai Jiao Tong University Affiliated Sixth People's Hospital, China
Disclosures: Jiao Zhao, None

BIOMECHANICS AND BONE QUALITY

FRI-23

A Randomized Single Switch-Over Trial of Teriparatide for Premenopausal Idiopathic Osteoporosis: High Resolution Peripheral Computed Tomography (HR-pQCT) Changes at 24M

*Sanchita Agarwal¹, Adi Cohen¹, Mafo Kamanda-Kosse¹, Mariana Bucovsky¹, Elizabeth Shane¹. ¹I. Division of Endocrinology, Department of Medicine, Columbia University, United States

Disclosures: Sanchita Agarwal, None

FRI-24

Removal of Advanced Glycation End-products In Vivo Rescues Bone Fragility

*Stacyann Bailey¹, Tessabella Magliochetti¹, Deepak Vashishth¹, Ewan McNay². ¹Rensselaer Polytechnic Institute, United States, ²University at Albany, United States

Disclosures: Stacyann Bailey, None

FRI-25

Bone microarchitecture and strength in women living with HIV: A cross-sectional HR-pQCT study

*Heather Macdonald¹, Claudie Berger², Neora Pick³, Evelyn Maan³, Helene Cote⁴, Melanie Murray⁵, Jerilynn Prior⁶. ¹Department of Family Practice, University of British Columbia, Canada, ²CaMos Methods Centre, McGill University, Canada, ³Oak Tree Clinic, BC Women's Hospital & Health Centre, Canada, ⁴Department of Pathology and Laboratory Medicine, University of British Columbia, Canada, ⁵Division of Infectious Diseases, Faculty of Medicine, University of British Columbia, Canada, ⁶Department of Medicine, University of British Columbia, Canada

Disclosures: Heather Macdonald, None

FRI-26

Pretreatment with Anti-Sclerostin Antibody has Lasting Osteogenic Effects on the Femur of Unloaded Male Rats

*Jon Elizondo¹, Scott Lenfest¹, Sandhya Sihra¹, Jennifer Kosniewski¹, Jeremy Black¹, Zachary Kohn¹, Jessica Brezicha², Susan Bloomfield³, Harry Hogan⁴. ¹Texas A&M University, Dept. of Mechanical Engineering, United States, ²Texas A&M University, Dept. of Biomedical Engineering, United States, ³Texas A&M University, Dept. of Health & Kinesiology, United States, ⁴Texas A&M University, Depts. of Mechanical Engineering & Biomedical Engineering, United States

Disclosures: Jon Elizondo, None

FRI-29

ASBMR 2019 Annual Meeting Young Investigator Award

Mineral deposition is required to repair diffuse damage in bone in vivo

*Leila Mehraban Alvandi¹, Donna Chen¹, Robert J Majeska¹, Rinaldo Florencio-Silva², Zeynep Seref-Ferlengez³, Mitchell B. Schaffler⁴. ¹Department of Biomedical Engineering, City College of New York, New, United States, ²Federal University of São Paulo – Medical school, Brazil, ³Albert Einstein College of Medicine, Orthopedic Surgery, New York NY, United States, ⁴Department of Biomedical Engineering, City College of New York, New, United States

Disclosures: Leila Mehraban Alvandi, None

FRI-30

Material Properties of Cortical Bone Do Not Differ between Donors with and without Type 2 Diabetes

*Jeffry Nyman¹, Sasidhar Uppuganti¹, Nora Ward², Mark Does². ¹Vanderbilt University Medical Center, United States, ²Vanderbilt University, United States

Disclosures: Jeffry Nyman, ActiveLife Scientific, Inc., Other Financial or Material Support

FRI-32

Zoledronate and Raloxifene Combination Therapy Enhances Material Properties of Mouse Bone

*Katherine Powell¹, Cayla Skaggs¹, Alexis Pulliam¹, Joseph Wallace¹, Alycia Berman², Matthew Allen³. ¹Indiana University Purdue University Indianapolis, Department of Biomedical Engineering, United States, ²Purdue University, Weldon School of Biomedical Engineering, United States, ³Indiana University School of Medicine, Department of Anatomy and Cell Biology, United States

Disclosures: Katherine Powell, None

- FRI-36 MB-SWIFT MRI can Quantify Bone Mineral Density while Concurrently Characterizing Material-level and Biochemical Changes in Bone In Vivo**
 *Rachel Surowiec¹, Kenneth Kozloff¹, Sundaresh Ram², Craig Galban³, Djaudat Idiyatullin³, Robert Goulet⁴. ¹Departments of Orthopaedic Surgery and Biomedical Eng., University of Michigan, United States, ²Department of Radiology, University of Michigan, United States, ³Department of Radiology, University of Minnesota, United States, ⁴Department of Orthopaedic Surgery, University of Michigan, United States
Disclosures: Rachel Surowiec, None

- FRI-37 Non-obese Type 2 Diabetic Murine Model Exhibits Altered Matrix Quality and Material Properties**
 *Matthew Tice¹, Stacyann Bailey¹, Deepak Vashishth¹, Emily Gallagher². ¹Rensselaer Polytechnic Institute, United States, ²Mount Sinai School of Medicine, United States
Disclosures: Matthew Tice, NIH, Grant/Research Support

BONE ACQUISITION AND PEDIATRIC BONE DISORDERS

- FRI-73 Maternal pregnancy vitamin D supplementation is associated with greater offspring bone mineral density at 4 years: findings from the MAVIDOS trial**
 *Elizabeth Curtis¹, Rebecca Moon¹, Stefania D'Angelo¹, Sarah Crozier¹, Hazel Inskip¹, Keith Godfrey¹, Cyrus Cooper¹, Nicholas Harvey¹, Nicholas Bishop², Sujatha Gopal², Stephen Kennedy³, Aris Papageorgiou³, Robert Fraser⁴, Saurabh Gandhi⁴, Inez Schoenmakers⁵, Ann Prentice⁶, Kassim Javaid⁷, Richard Eastell⁸. ¹MRC Lifecourse Epidemiology Unit, University of Southampton, United Kingdom, ²Academic Unit of Child Health, Sheffield Children's Hospital, United Kingdom, ³Nuffield Department of Women's and Reproductive Health, John Radcliffe Hospital, University of Oxford, United Kingdom, ⁴Department of Obstetrics and Gynaecology, Sheffield Hospitals NHS Trust, University of Sheffield, United Kingdom, ⁵Department of Medicine, Faculty of Medicine and Health Sciences, University of East Anglia, United Kingdom, ⁶Nutrition and Bone Health, University of Cambridge, United Kingdom, ⁷NIHR Oxford Biomedical Research Centre, University of Oxford, United Kingdom, ⁸Academic Unit of Bone Metabolism, University of Sheffield, United Kingdom
Disclosures: Elizabeth Curtis, None
- FRI-75 Molecular Mechanisms for Pamidronate Rescue of Post-burn Muscle Loss in Children**
 *Fabrizio Pin¹, Lynda Bonewald¹, Andrea Bonetto², Gordon Klein³. ¹Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, ²Department of Surgery, Indiana University School of Medicine, United States, ³Department of Orthopaedic Surgery, University of Texas Medical Branch, United States
Disclosures: Fabrizio Pin, None

BONE INTERACTIONS WITH MUSCLE AND OTHER TISSUES

- FRI-84 Silicon Oxynitride Coatings Enhance Bone Healing by Inducing Antioxidant Biomarkers in Mandibular Implants**
 *Neelam Ahuja¹, Henry Tran¹, Marco Brotto¹, Venu Varanasi¹, Kamal Awad², Pranesh Aswath², Lindsay Wilson³, Simon Young³. ¹Bone Muscle Research Center, CONHI, University of Texas at Arlington, United States, ²Department of Material Science and Engineering, University of Texas at Arlington, United States, ³Department of Oral & Maxillofacial Surgery, The University of Texas Health Science Center at Houston, United States
Disclosures: Neelam Ahuja, None
- FRI-85 Mast Cell Deficiency Partially Mitigates Acute Bone Resorption Following Muscle Paralysis**
 *Ted Gross¹, Edith Gardiner¹, Leah Worton¹, Brandon Ausk¹, Steven Bain¹, Nicholas Shubin², Adrian Piliponsky². ¹University of Washington, United States, ²Seattle Children's Research Institute, United States
Disclosures: Ted Gross, None

FRI-86

**WNT3a levels decline during aging and further decline in osteoporotic women-
Implications for Bone-Muscle Crosstalk**

*Jian Huang¹, Leticia Brotto¹, Marco Brotto¹, Janalee Isaacson², Lynda Bonewald³, Mark Johnson⁴, Robert Recker⁵, Joan Lappe⁵. ¹Bone-Muscle Research Center, College of Nursing and Health Innovation, University of Texas at Arlington, United States, ²School of Nursing & Human Physiology, Gonzaga University, United States, ³Indiana Center for Musculoskeletal Health, School of Medicine, Indiana University, United States, ⁴Department of Oral and Craniofacial Sciences, School of Dentistry, University of Missouri-Kansas City, United States, ⁵School of Medicine, Osteoporosis Research Center, Creighton University, United States

Disclosures: Jian Huang, None

FRI-90

Biglycan Regulates Inflammation and Bone Formation During Fracture Healing

*Reut Shainer¹, Vardit Kram², Tina M. Kilts², Li Li², Marian F. Young², Andrew Doyle³. ¹Molecular Biology of Bones and Teeth Section, NIDCR, NIH, United States, ²Molecular Biology of Bones and Teeth Section, NIDCR, NIH, United States, ³Cell Biology Section, NIDCR, NIH, United States

Disclosures: Reut Shainer, None

FRI-91

Osteocalcin ameliorates the cognitive dysfunctions in APP/PS1 mice

*Chang Shan¹, Yan-fang Hou¹, Shu-min Wang¹, Jian-min Liu¹, Yan-ling Gong², Qian-qian Zhuang², Sheng-tian Li². ¹Shanghai Jiao-tong University School of Medicine, China, ²Shanghai Jiao-tong University, China

Disclosures: Chang Shan, None

FRI-92

ASBMR 2019 Annual Meeting Young Investigator Award

The Muscle Metabolite, β -aminoisobutyric acid, L-BAIBA, Enhances the Effects of Suboptimal Mechanical Loading on New Bone Formation.

*Alberto Smargiassi¹, Alexander Robling¹, Lynda Bonewald¹, Marco Brotto². ¹IUPUI, United States, ²University of Texas at Arlington, United States

Disclosures: Alberto Smargiassi, None

FRI-93

Distinctive role of muscle-specific ubiquitin ligases in bone microarchitecture

*Vidyani Suryadevara¹, Monte Willis¹. ¹IUPUI, United States

Disclosures: Vidyani Suryadevara, None

FRI-96

Impaired PTH-stimulated periosteal proliferation, Wnt activity and fracture healing in Fgf2 knockout mice

*Liping Xiao¹, Marja Hurley¹. ¹UConn Health, United States

Disclosures: Liping Xiao, None

BONE MARROW MICROENVIRONMENT AND NICHES

FRI-124

Sclerostin antibody normalizes decreased trabecular bone and increased bone marrow adipose tissue caused by whole-body irradiation in mice

*Samantha Costa¹, Heather Fairfield¹, Mariah Farrell¹, Connor Murphy¹, Ashley Soucy¹, Michaela Reagan¹, Gill Holdsworth². ¹Maine Medical Center Research Institute, United States, ²UCB Pharma, United Kingdom

Disclosures: Samantha Costa, None

BONE TUMORS AND METASTASIS

FRI-135

PREX1 drives spontaneous bone metastasis of ER+ breast cancer cells

*Miranda E. Clements¹, Rachele W. Johnson². ¹Vanderbilt University, United States, ²Vanderbilt University Medical Center, United States

Disclosures: Miranda E. Clements, None

- FRI-136** **TBK1/IKK ϵ inhibitor Amlexanox blocks Multiple Myeloma cell growth in vitro and in vivo**
 *Quanhong Sun¹, Juraj Adamik¹, Peng Zhang¹, Konstantinos Lontos¹, Deborah L. Galson¹, Valentina Marchica², Nicola Giuliani², Rebecca Silbermann³, G.David Roodman⁴, Lea Nyiranshuti⁵, Joseph Latoche⁵, Carolyn J. Anderson⁵, Konstantinos Verdelis⁶. ¹Department of Medicine, Hem-Onc Division, UPMC Hillman Cancer Center, University of Pittsburgh, United States, ²Myeloma Unit, Department of Clinical and Experimental Medicine, University of Parma, Italy, ³Department of Medicine, Hematology-Oncology Division, Indiana University, Indianapolis, IN, USA, United States, ⁴Department of Medicine, Hem-Onc Division, Indiana University, Indianapolis, IN; ⁵Veterans Administration Medical Center, Indianapolis, IN, USA, United States, ⁶Department of Medicine, Cardiology Division, University of Pittsburgh, United States, ⁶Department of Oral Biology, The Center for Craniofacial Regeneration, McGowan Institute for Regenerative Medicine, University of Pittsburgh, United States
Disclosures: Quanhong Sun, None
- FRI-138** **ASBMR 2019 Annual Meeting Young Investigator Award**
Circulating osteocalcin-positive cells predict the progression of breast cancer bone metastasis
 *Kyoung Jin Lee¹, Serk In Park¹, Hyun Jin Sun², Kyung-Hun Lee², Tae Young Kim², Seock-Ah Im², Sun Wook Cho². ¹Department of Biochemistry and Molecular Biology, Korea University College of Medicine, Republic of Korea, ²Department of Internal Medicine, Seoul National University Hospital, Republic of Korea
Disclosures: Kyoung Jin Lee, None
- FRI-141** **The Role of Integrin $\alpha 2 \beta 1$ in Breast Cancer Metastasis to Bone**
 *Milene Moritz¹, Heloisa de Araujo¹, Alyssa Merkel², Julie Rhoades (Sterling)², Ean Feldman³. ¹Federal University of Sao Carlos, Brazil, ²Vanderbilt University Medical Center, United States, ³Vanderbilt University, United States
Disclosures: Milene Moritz, None
- FRI-142** **Activation of Osteoblast Parathyroid Hormone 1 Receptor (PTH1R) Mobilizes Monocytic Myeloid-Derived Suppressor Cells (MDSC) from the Bone Marrow Tumor Hosts**
 *Serk In Park¹, Kyoung Jin Lee¹, Eun Jung Lee¹, Bo-Yeon Seo¹, Seung Pil Jung², Sun Wook Cho³. ¹Department of Biochemistry and Molecular Biology, Korea University College of Medicine, Republic of Korea, ²Department of Surgery, Korea University College of Medicine, Republic of Korea, ³Department of Internal Medicine, Seoul National University Hospital, Republic of Korea
Disclosures: Serk In Park, None
- FRI-143** **The role of the SCF/c-kit pathway in cancer-induced bone pain**
 *Sun Park¹, Matthew Eber¹, Shunsuke Tsuzuki¹, Rebecca Cain¹, Brooke Widner¹, Yusuke Shiozawa¹, Yuko Kamata², Takahiro Kimura², Fang-Chi Hsu³, Christopher Peters⁴. ¹Wake Forest University Health Sciences, United States, ²The Jikei University School of Medicine, Japan, ³Wake Forest University Health Sciences, United States, ⁴Wake Forest University Health Sciences, United States
Disclosures: Sun Park, None
- FRI-145** **Parathyroid Hormone Receptor Signaling Mediates Breast Cancer Metastasis to Bone in Mice**
 *Srilatha Swami¹, Hui Zhu¹, Joy Y. Wu¹. ¹Stanford University, United States
Disclosures: Srilatha Swami, None
- FRI-147** **HIF Signaling Drives Spontaneous Dissemination of Breast Cancer Cells to Bone**
 *Vera Todd¹, Lawrence Vecchi², Rachelle Johnson². ¹Vanderbilt University, United States, ²Vanderbilt University Medical Center, United States
Disclosures: Vera Todd, None

CHONDROCYTES

- FRI-174** **DDRGGK1 is required for the proper chondrogenesis and the regulation of osteochondroprogenitors**
 * Yangjin Bae¹, Monika Weisz-Hubshman¹, Adetutu Egunsola¹, Ming-Ming Jiang¹, Brendan Lee¹. ¹Baylor College of Medicine, United States
Disclosures: Yangjin Bae, None
- FRI-175** **Pinch regulates chondrogenesis by control of TGF- β 1 signaling and expression of Sox9 and Runx2 in chondrocytes**
 *Yiming Lei¹, Huiling Cao¹, Pengyu Li¹, Xin Liu¹, Qinnan Yan¹, Simin Lin¹, Liting Ma¹, Yuxi Guo¹, Yumei Lai², Yiran Zhao³, Wei Yang³, Yishu Wang³, Ruxuan Li³, Guozhi Xiao³. ¹Guangdong Provincial Key Laboratory of Cell Microenvironment and Disease Research, Shenzhen Key Laboratory of Cell Microenvironment, and Department of Biology, Southern University of Science and Technology, , China, ²Department of Orthopedic Surgery, Rush University Medical Center, United States, ³Guangdong Provincial Key Laboratory of Cell Microenvironment and Disease Research, Shenzhen Key Laboratory of Cell Microenvironment, and Department of Biology, Southern University of Science and Technology, China
Disclosures: Yiming Lei, None
- FRI-178** **Growth plate borderline chondrocytes behave as transient mesenchymal precursor cells**
 *Koji Mizuhashi¹, Noriaki Ono¹. ¹University of Michigan School of Dentistry, United States
Disclosures: Koji Mizuhashi, None
- FRI-179** **Changes in 3D Genome Architecture During Chondrocyte Differentiation in the Pathogenesis of Human Chondrodysplasias**
 *I-Wen Song¹, Ivan Bochkov¹, Yangjin Bae¹, Erez Aiden¹, Brendan Lee¹. ¹Molecular and Human Genetics, Baylor College of Medicine, United States
Disclosures: I-Wen Song, None
- FRI-180** **TGF- β /Alk5 signaling regulates the senescence of articular cartilage superficial cells and preventing osteoarthritis initiation**
 *qiaoyan tan¹, Quan Wang¹, Yangli Xie¹, lin chen¹. ¹Department of Rehabilitation Medicine, Center of Bone Metabolism and Repair, State Key Laboratory of Trauma, Burns and Combined Injury, Trauma Center, Research Institute of Surgery, Daping Hospital, Third Military Medical University, China
Disclosures: qiaoyan tan, None
- FRI-181** **Runx1 Mediates Articular Cartilage Repair in Osteoarthritis through Upregulating Yap and Downregulating Wnt/ β -catenin Signaling Pathway**
 *Yan Zhang¹, Yun Lu¹, Tao Zuo¹, Guochun Zhu¹, Jinjin Wu¹, Wei Chen¹, Yi-Ping Li¹. ¹Department of Pathology, University of Alabama at Birmingham, SHEL 810, 1825 University Blvd, Birmingham AL 35294-2182, USA, United States
Disclosures: Yan Zhang, None

CLINICAL CASE REPORTS

- FRI-202** **A case of adult hypophosphatasia with prominent periarticular calcification**
 *Hajime Kato¹, Minae Koga¹, Nobuaki Ito¹. ¹Division of Nephrology and Endocrinology, The University of Tokyo, Japan
Disclosures: Hajime Kato, None
- FRI-204** **First Report of Burosumab (Anti-FGF23 Monoclonal Antibody) for Rickets Complicating HRAS-Associated Cutaneous Skeletal Hypophosphatemia Syndrome**
 *Pamela Smith², Susan Bayliss², Marwan Shinawi², William McAlister², Ana Maria Arbelaez², Gary Gottesman³, Valerie Wollberg³, Michael Whyte³, Jeffrey Sugarman⁴. ¹University of Arizona College of Medicine - Phoenix, United States, ²Washington University School of Medicine in St. Louis, United States, ³Shriners Hospitals for Children - St. Louis, United States, ⁴University of California - San Francisco, United States
Disclosures: Pamela Smith, None

FRI-205 Bisphosphonate-Associated Osteonecrosis Of Jaw (BONJ) Healed With Teriparatide In A Female With Skeletal Metastasis From Breast Cancer (Treated With Radiation Therapy And Zolendronic Acid)

*Irinel Stanciu¹, Paul Miller². ¹Colorado Center for Bone Research at Panorama Orthopedics and Spine Center, United States, ²Colorado Center for Bone Research at Panorama Orthopedics and Spine Surgery Center, United States

Disclosures: Irinel Stanciu, None

FRI-208 A Unique Cause of Hypercalcemia

*Jian Zhang¹, Deborah Sellmeyer¹. ¹Stanford University School of Medicine, United States

Disclosures: Jian Zhang, None

ENERGY METABOLISM, BONE, MUSCLE AND FAT

FRI-219 Housing temperature influences bone and brown adipose tissue side effects of atypical antipsychotic drugs in female mice

*Audrie Langlais¹, Katherine J. Motyl¹, Roni F. Kunst², Karen Houseknecht³. ¹Maine Medical Center Research Institute, United States, ²Maine Medical Center Research Institute, United States, ³University of New England, United States

Disclosures: Audrie Langlais, None

FRI-220 Connexin43 Favors Body Adiposity and Glucose Tolerance in Mice

*Seung-Yon Lee¹, Manuela Fortunato¹, Marcus Watkins¹, Francesca Fontana¹, Roberto Civitelli¹. ¹Divisions of Bone and Mineral Diseases, Department of Medicine; Musculoskeletal Research Center, Washington University School of Medicine, United States

Disclosures: Seung-Yon Lee, None

FRI-222 Inhibition of the Mitochondrial Permeability Transition via Cyclophilin D Knock-Out Stimulates Osteoprogenitors and Accelerates Bone Fracture Repair

*Brianna Shares¹, Roman Eliseev¹. ¹University of Rochester, United States

Disclosures: Brianna Shares, None

FRI-223 Dysregulated Adiponectin Signalling via AdipoR1 Deletion Leads to Bone Loss and Increased Marrow Adiposity In Vivo Through Distinct Local and Systemic Mechanisms and in Contrast to Epidemiological Evidence

*Aneka Sowman¹, Sam Z. Olechnowicz¹, Stefan Kluzek¹, Nigel K. Arden¹, James R. Edwards¹. ¹University of Oxford, United Kingdom

Disclosures: Aneka Sowman, None

GENOMICS, TRANSCRIPTOMICS, PROTEOMICS AND METABOLOMICS OF MUSCULOSKELETAL DISEASE

FRI-236 Identification of Genetic Variants for Peak Bone Mineral Content in Young Adult Women

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Disclosures: Jai Prakash, None

FRI-237 Leveraging Unconfounded Genetic Risk Scores to Stratify Fracture Risk by Age at Onset

*Carolina Medina-Gomez¹, Katerina Trajanoska¹, M. Carola Zillikens¹, Andre G. Uitterlinden¹, Fernando Rivadeneira¹, Chun Chieh Fan², Anders M. Dale², Tyler M. Seibert², Ole A. Andreassen³. ¹Department of Internal Medicine, Erasmus University Medical Centre, Netherlands, ²Center for Multimodal Imaging and Genetics, University of California San Diego, United States, ³NORMENT, KG Jebsen Centre, Institute of Clinical Medicine, University of Oslo, Norway

Disclosures: Carolina Medina-Gomez, None

FRI-238 **Lipidomic and Metabolomic Profiles in Women with Low and High Bone Mineral Density: Searching for Early Serum Metabolic Biomarkers for Osteoporosis Risk**
*Chenglin Mo¹, Zhiying Wang¹, Marco Brotto¹, Kuan-Jui Su², Hongwen Deng², Lynda Bonewald³. ¹Bone-Muscle Research Center, College of Nursing and Health Innovation, the University of Texas-Arlington, United States, ²Tulane Center of Bioinformatics and Genomics, Department of Global Biostatistics and Data Science, Tulane University, United States, ³Musculoskeletal Research Center, Indiana Medical School, Indiana University, United States

Disclosures: Chenglin Mo, None

FRI-239 **CRISPR-Cas9 mediated genome editing confirms EPDR1 as an effector gene at the BMD GWAS-implicated ‘STARD3NL’ locus**

*James Pippin¹, Alessandra Chesi¹, Chun Su¹, Kenyaita Hodge¹, Mathew Johnson¹, Andrew Wells¹, Struan Grant¹, Yadav Wagley², Kurt Hankenson². ¹Children’s Hospital of Philadelphia, United States, ²University of Michigan Medical School, United States

Disclosures: James Pippin, None

FRI-240 **Genome-wide association meta-analysis identifies six loci for osteocalcin levels**

*Yi-Hsiang Hsu¹, David Karasik¹, Douglas P. Kiel¹, Alexander Teumer², Katerina Trajanoska³, Fernando Rivadeneira³, On Behalf of GEFOS and CHARGE Consortia⁴.

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Disclosures: Yi-Hsiang Hsu, None

HORMONAL REGULATORS

FRI-257 **Osteocyte Sirt6 has crucial roles in bone and phosphate metabolism through senescence- dependent and -independent manner.**

*Aobulikasimu Aikebaier¹, Yoshinori Asou¹, Hiroki Ochi¹, Piao Jinying¹, Shingo Sato¹, Kunikazu Tsuji¹, Atsushi Okawa¹. ¹Tokyo Medical and Dental University, Japan

Disclosures: Aobulikasimu Aikebaier, None

FRI-258 **C-FGF23 peptide protects against severe hypoferrremia during acute inflammation**

*Guillaume Courbon¹, Vikas Chonira¹, Maralee Capella¹, Samantha Neuburg¹, Xueyan Wang¹, Aline Martin¹, Valentin David¹. ¹Division of Nephrology and Hypertension and Center for Translational Metabolism and Health, Northwestern University, United States

Disclosures: Guillaume Courbon, None

FRI-259 **Repetitive Mild Traumatic Brain Injury Impairs Fracture Healing in Mice**

*Chandrasekhar Kesavan¹, Charles Rundle¹, Subburaman Mohan¹. ¹VA Loma Linda Healthcare System, United States

Disclosures: Chandrasekhar Kesavan, None

FRI-263 **CXCL12 Deletion in Osteoprogenitors Causes a Dramatic, Albeit Balanced, Increase in the Rate of Bone Remodeling and Attenuates the Loss of Cortical Bone Mass Caused by Estrogen Deficiency in Mice**

* Filipa Ponte¹, Warren Aaron¹, Ha-neui Kim¹, Srividhya Iyer¹, Li Han¹, Maria Almeida¹, Manolagas Stavros¹. ¹UAMS, United States

Disclosures: Filipa Ponte, None

FRI-264 **Fetal FGF23 is required only to defend against hyperphosphatemia induced by maternal phosphate loading**

*K. Berit Sellars¹, Brittany A. Ryan¹, Beth J. Kirby¹, Christopher S. Kovacs¹. ¹Memorial University of Newfoundland, Canada

Disclosures: K. Berit Sellars, None

MECHANOBIOLOGY

- FRI-285** **Mechanoresponsive MiR-138-5p Targets MACF1 to Inhibit Bone Formation**
 *Zhihao Chen¹, Fan Zhao¹, Lifang Hu¹, Chong Yin¹, Yan Zhang¹, Dijie Li¹, Aironq Qian¹, Chao Liang², Ge Zhang². ¹Lab for Bone Metabolism, Key Lab for Space Biosciences and Biotechnology, School of Life Sciences, Northwestern Polytechnical University, Xi'an, Shaanxi 710072, China., China, ²Law Sau Fai Institute for Advancing Translational Medicine in Bone & Joint Diseases, Hong Kong, China, Hong Kong
Disclosures: Zhihao Chen, None
- FRI-286** **ASBMR 2019 Fund for Research and Education Young Investigator Award**
Sptbn1 disruption increases osteocyte membrane fragility, leading to impaired cell viability and a blunted mechanotransduction response following mechanical loading
 *Mackenzie Hagan¹, Kanglun Yu¹, Eric Stokes¹, Sarah Bass¹, Mohamed Awad¹, Mohammed Elsalanty¹, Paul McNeil¹, Rachel Roberts², Daniel Perrien³, James Ervasti⁴, Mark Hamrick⁵, Meghan McGee-Lawrence⁵. ¹Augusta University, United States, ²Augusta, United States, ³Vanderbilt University, United States, ⁴University of Minnesota, United States, ⁵Medical College of Georgia, Augusta University, United States
Disclosures: Mackenzie Hagan, None
- FRI-287** **Irisin Attenuates Osteoarthritis by Inhibiting Apoptosis of Osteocyte through Activating Erk Signaling Pathway**
 *Zihao He¹, Zhifeng Yu¹. ¹Shanghai Jiao Tong University, China
Disclosures: Zihao He, None
- FRI-289** **3D multiplexed imaging for multi-scale finite element analysis to examine bone mechanotransduction and heterogeneous activation of β -catenin signaling in osteocytes**
 *Loretta Laughrey¹, LeAnn Tiede-Lewis², Sarah Dallas², Mark Johnson³, Nuria Lara-Castillo², Thiagarajan Ganesh³. ¹University of Missouri - Kansas City, United States, ²University of Missouri - Kansas City, School of Dentistry, Department of Oral and Craniofacial Sciences, United States, ³University of Missouri - Kansas City, Department of Civil and Mechanical Engineering, United States
Disclosures: Loretta Laughrey, None
- FRI-292** **Fluid flow through the lacunocanalicular network and mechanoresponsiveness in a mouse tibial model**
 *Alexander van Tol¹, Victoria Schemenz¹, Wolfgang Wagermaier¹, Hajar Razi¹, Peter Fratzl¹, Richard Weinkamer¹, Andreas Roschger², Paul Roschger³, Isabela Vitienes⁴, Bettina Willie⁴. ¹Max Planck Institute of Colloids and Interfaces, Department of Biomaterials, Germany, ²University of Salzburg, Chemistry and Physics of Materials, Austria, ³Ludwig Boltzmann Institute of Osteology at Hanusch Hospital of WGKK and AUA Trauma Centre Meidling, 1st Medical Department, Hanusch Hospital, Austria, ⁴Shriners Hospitals for Children-Canada, Department of Pediatric Surgery, McGill University, Canada
Disclosures: Alexander van Tol, None

MINERAL METABOLISM

- FRI-309** **PTHrP Overexpression in Transgenic Mammary Tumors Causes Anorexia and White Adipose Tissue Lipolysis**
 *Diego Grinman¹, Pamela Dann², John Wysolmerski³. ¹Yale University. Department of Internal Medicine. Section of Endocrinology & Metabolism, United States, ²Yale University. Department of Internal Medicine. Section of Endocrinology & Metabolism., United States, ³Yale University. Department of Internal Medicine. Section of Endocrinology & Metabolism, United States
Disclosures: Diego Grinman, None

ASBMR 2019 Annual Meeting Young Investigator Award

FRI-311 Bone matrix miR-125b inhibits bone resorption without affecting skeletal development and improves age-related changes in bone mass and quality

*Shota Ito¹, Kotaro Tanimoto¹, Tomoko Minamizaki², Yuji Yoshiko², Yoshiaki Kitaura³, Shinsuke Ohba⁴, Ung-il Chung⁴. ¹Department of Orthodontics and Craniofacial Developmental Biology, Hiroshima University Graduate School of Biomedical and Health Sciences, Japan, ²Department of Calcified Tissue Biology, Hiroshima University Graduate School of Biomedical and Health Sciences, Japan, ³Department of Bioengineering, The University of Tokyo, Japan, ⁴Center for Disease Biology and integrative Medicine, The University of Tokyo, Japan

Disclosures: Shota Ito, None

FRI-315 Abaloparatide exhibits greater osteo-anabolic response and higher cAMP stimulation and β -arrestin recruitment than teriparatide

*Karim Sahbani¹, Christopher Cardozo², William Bauman², Hesham Tawfeek². ¹James J. Peters VA Medical Center, United States, ²James J. Peters VA Medical Center and Icahn School of Medicine at Mount Sinai, United States

Disclosures: Karim Sahbani, None

FRI-316 Treatment with an anti-PTHR1 mAb normalizes calcium levels and prevents weight loss in a transgenic mouse model of HHM.

*Pamela Dann¹, John Wysolmerski¹, Raphael Levy², Kirk Johnson³, Padma Bezwada³. ¹Yale University, United States, ²XOMA, United States, ³XOMA Corporation, United States

Disclosures: Pamela Dann, None

FRI-317 FGF23 Levels are Elevated in a Mouse Model of HHM

*Pamela Dann¹, Julie Hens¹, Miralireza Takyar¹, Diego Grinman¹, Clemens Bergwitz¹, John Wysolmerski¹. ¹Yale University, United States

Disclosures: Pamela Dann, None

MUSCULOSKELETAL AGING

FRI-337 Improved Skeletal Phenotype And Accelerated Intramembranous Bone Healing Post Tooth Extraction in Alox5 Knockout Senescent Female Mice

*Claudia Bigueti¹, Ramez Mahamoud¹, Gustavo Simionato¹, André Oliva¹, Mariza Matsumoto¹, Isabela Custódio², Jesus Andreo³, Marco Brotto⁴, Walid Fakhouri⁵, Chenglin Mo⁶. ¹School of Dentistry of Araçatuba, São Paulo State University, FOA/UNESP, Brazil, ²School of Dentistry, Universidade Sagrado Coração, USC, Brazil, ³School of Dentistry of Bauru, University of São Paulo, FOB/USP, Brazil, ⁴Bone-Muscle Research Center, Nursing Program, University of Texas at Arlington, UTA, United States, ⁵Center for Craniofacial Research, School of Dentistry, The University of Texas Health Science Center at Houston, United States, ⁶University of Texas at Arlington, United States

Disclosures: Claudia Bigueti, None

FRI-338 D3Cr muscle mass, DXA appendicular lean mass (ALM), and their relationships with “bone quality” and “muscle quality” in older men

*Peggy Cawthon¹, Sheena Patel¹, Steven Cummings¹, Eric Orwoll², Andrew Burghardt³, Kate Duchowny³, Lisa Langsetmo⁴, Kristine Ensrud⁴, Elsa Strotmeyer⁵, Joe Zmuda⁵, Jane Cauley⁶, Miljkovic Iva⁵, Nancy Lane⁶, William Evans⁷. ¹California Pacific Medical Center, Research Institute, United States, ²Oregon Health and Sciences University, United States, ³University of California, San Francisco, United States, ⁴University of Minnesota, United States, ⁵University of Pittsburgh, United States, ⁶University of California, Davis, United States, ⁷University of California, Berkeley, United States

Disclosures: Peggy Cawthon, None

FRI-339 Interplay between microRNAs and senescence-associated genes that regulate age- and radiotherapy-related bone damage

*Abhishek Chandra¹, David Monroe¹, Joshua Farr¹, Sean Park¹, Christine Hachfeld¹, Sundeeep Khosla¹, Robert Pignolo¹. ¹Mayo Clinic, United States

Disclosures: Abhishek Chandra, None

- FRI-341 Age-associated Increase in Kynurenine Inhibits Autophagy and Promotes Senescence and Apoptosis in Bone Marrow Mesenchymal Stem Cells**
 *Dmitry Kondrikov¹, Ahmed Elmansi¹, William Hill¹, Robert Taylor Bragg², Tanner Mobely², Thomas Barrett², Patricia Schoeinlein², Xing-Ming Shi², Sadanand Fulzele², Meghan McGee Lawrence², Mark Hamrick², Carlos Isales², Alexandra Aguilar-Perez³.
¹Medical University of South Carolina, United States, ²Augusta University, United States, ³Indiana University School of Medicine, United States
Disclosures: Dmitry Kondrikov, None

MUSCULOSKELETAL DEVELOPMENT

- FRI-351 IRS1 and IRS2 are integral for longitudinal bone growth**
 *Victoria DeMambro¹, Jennifer Daruszk¹, Carolina Figueroa¹, Clifford Rosen¹, Anyonya Guntur¹, Lauren Ball². ¹Maine Medical Center Research Institute, United States, ²Medical University of South Carolina, United States
Disclosures: Victoria DeMambro, None
- FRI-352 Usp53, a PTH target regulating cell lineage fate and bone turnover**
 *Hadla Hariri¹, Martin Pellicelli², René St-Arnaud³. ¹McGill University/Shriners Hospitals for Children - Canada, Canada, ²Shriners Hospitals for Children - Canada, Canada, ³Shriners Hospitals for Children - Canada/McGill University, Canada
Disclosures: Hadla Hariri, None
- FRI-353 Loss of preBCR components affects the homeostasis of cranial bone**
 *Mohamed Khass¹, Louis Bridges¹, Harunur Rashid², Peter Burrows³, Amjad Javed⁴, Harry Schroeder⁵. ¹Department of Medicine, University of Alabama at Birmingham, United States, ²Department of Oral and Maxillofacial Surgery, University of Alabama at Birmingham, United States, ³Department of Microbiology, University of Alabama at Birmingham, United States, ⁴Department of Oral and Maxillofacial Surgery, University of Alabama at Birmingham, United States, ⁵Department of Medicine, University of Alabama at Birmingham, United States
Disclosures: Mohamed Khass, None
- FRI-354 Emergence of an early osteoporotic phenotype in male Down syndrome mice resulting from aberrant trisomic Dyrk1a expression**
 *Jonathan LaCombe¹, Randall Roper¹, Joseph Wallace¹. ¹IUPUI, United States
Disclosures: Jonathan LaCombe, None
- FRI-356 Bromodomain-containing Protein Brd4 is Required for Proper Skeletal Formation**
 *Christopher Paradise¹, M. Lizeth Galvan¹, Catalina Galeano-Garces¹, Roman Thaler¹, Andre J. van Wijnen¹, Amel Dudakovic¹. ¹Mayo Clinic, United States
Disclosures: Christopher Paradise, None
- FRI-357 Prevention of ectopic calcification by MGP: The role of its conserved residues**
 *Abhinav Parashar¹, Juliana Marulanda¹, Omar Al Rifai², Mathieu Ferron³, Monzur Murshed⁴. ¹Faculty of Dentistry, McGill University, Canada, Canada, ²University of Montreal, Canada, Canada, ³Department of Biochemistry and Nuclear Medicine, University of Montreal, Canada, ⁴Faculty of Medicine, McGill University, Canada, Canada
Disclosures: Abhinav Parashar, None
- FRI-358 Aberrant muscle tissue repair by mutant ACVR1 FOP progenitor cells**
 *Alexandra Stanley¹, Elisia Tichy¹, Foteini Mourkioti¹, Eileen Shore¹. ¹University of Pennsylvania, United States
Disclosures: Alexandra Stanley, None
- FRI-361 Loss of ZIP10 in osteoblasts and chondrocytes impairs skeletal development and growth.**
 *Rika Yasuhara¹, Akihiro Kawashima¹, Akane Yukimori¹, Junichi Tanaka¹, Satoko Kujiraoka¹, Kenji Mishima¹, Toshiyuki Fukada², Motomi Enomoto-Iwamoto³. ¹Showa University, Japan, ²Tokushima Bunri University, Japan, ³University of Maryland, United States
Disclosures: Rika Yasuhara, None

MUSCULOSKELETAL PROGENITOR CELLS AND LINEAGE DETERMINATION

- FRI-386** **Elf2ak4/GCN2 maintains bone homeostasis through regulation of skeletal stem cell proliferation**
 *Guoli Hu¹, Yilin Yu¹, Courtney Karner¹, Fanxin Long². ¹Department of Orthopaedic Surgery, Duke University School of Medicine, United States, ²Department of Orthopaedic Surgery, University of Pennsylvania, United States
Disclosures: Guoli Hu, None
- FRI-387** **Wnt responsive progenitor cells contribute to osseointegration of implants in lone bone.**
 *Zhijun Li¹, Xue Yuan¹, Jill Helms¹. ¹Stanford University, United States
Disclosures: Zhijun Li, None
- FRI-388** **Characterization of a novel perivascular DMP1+ osteoprogenitor associated with trans-cortical channels of long bone**
 *Sierra Root¹, Natalie Wee¹, Sanja Novak¹, Ivo Kalajzic¹, Brya Matthews². ¹Department of Reconstructive Sciences, University of Connecticut Health Center, United States, ²Department of Molecular Medicine, University of Auckland, New Zealand
Disclosures: Sierra Root, None
- FRI-390** **Transgenic mice with improved spatiotemporal knockdown of Hdac3 in osteoprogenitor cells demonstrate low bone mass, high marrow fat, and osteoblastic lipid storage**
 *Anuj Sharma¹, Rachel Roberts¹, Jessica Pierce¹, Mohamed Awad¹, Mohammed Elsalanty¹, William Hill², Mark Hamrick³, Carlos Isales³, Meghan McGee-Lawrence³. ¹Augusta University, United States, ²Medical University of South Carolina, United States, ³Medical College of Georgia, Augusta University, United States
Disclosures: Anuj Sharma, None
- FRI-392** **The chemokine Cxcl12 regulates the bone mesenchymal/stromal cell homeostasis and marrow vascular morphogenesis**
 *Yi-shiuan Tzeng¹, Shih-yu Chen¹. ¹Institute of Biomedical Sciences, Academia Sinica, Taiwan, Province of China
Disclosures: Yi-shiuan Tzeng, None
- FRI-394** **Epigenetic Regulation of Bone Regeneration in Inflammation Disease**
 *Jun Ying¹, Taotao Xu¹, Cuicui Wang¹, Regis O'Keefe¹, Yousef Abu-Amer¹, Jie Shen¹. ¹Department of Orthopaedic Surgery, School of Medicine, Washington University in St. Louis, United States
Disclosures: Jun Ying, None
- FRI-395** **Differential Response of Superior and Dura Periosteum to Intermittent Treatment of Teriparatide in Cranial Bone Defect Repair**
 *Yuankun Zhai¹, Xiping Zhang¹. ¹University of Rochester Medical Center, United States
Disclosures: Yuankun Zhai, None

OSTEOARTHRITIS AND OTHER JOINT DISORDERS

- FRI-418** **CRISPR/Cas9-mediated ablation of osteoarthritis-associated genes attenuates osteoarthritis progression**
 *Jian Huang¹, Lan Zhao¹, Yunshan Fan¹, Jun Li¹, Di Chen¹. ¹Rush University Medical Center, United States
Disclosures: Jian Huang, None

- FRI-420** **Microstructural analysis of subchondral trabecular bone in patients with osteoarthritis of the knee using second-generation high-resolution peripheral quantitative computed tomography (HR-pQCT)**
 *Kazuteru Shiraishi¹, Ko Chiba¹, Narihiro Okazaki¹, Kazuaki Yokota¹, Makoto Osaki¹.
¹Department of Orthopedic Surgery, Nagasaki University Graduate School of Biomedical Sciences, Japan
Disclosures: Kazuteru Shiraishi, None
- FRI-421** **PDGF-BB Secreted by Pre-Osteoclasts Drives Subchondral bone Angiogenesis in OA Joints**
 *Weiping Su¹, Xiannan Liu¹, Qi Sun¹, Xu Cao¹, Mei Wan¹. ¹Department of Orthopaedic Surgery, United States
Disclosures: Weiping Su, None
- FRI-424** **Deficiency of mesenchymal miR-204/miR-211 induces multifaceted pathologic changes of osteoarthritis**
 *Lan Zhao¹, Jian Huang¹, Yunshan Fan¹, Lifan Liao¹, Di Chen¹. ¹Department of Orthopedic Surgery, Rush University Medical Center, United States
Disclosures: Lan Zhao, None

OSTEOBLASTS

- FRI-440** **ASBMR 2019 Annual Meeting Young Investigator Award**
Truncating Mutations in Recql4 Cause a Low Bone Mass Phenotype, but Not Osteosarcoma
 *Wilson Castillo-Tandazo¹, Monique Smeets¹, Natalie Sims¹, Carl Walkley². ¹St. Vincent's Institute; Department of Medicine, St. Vincent's Hospital, University of Melbourne, Australia, ²St. Vincent's Institute; Department of Medicine, St. Vincent's Hospital, University of Melbourne; Mary MacKillop Institute for Health Research, Australian Catholic University, Australia
Disclosures: Wilson Castillo-Tandazo, None
- FRI-441** **Autophagy Suppression by Atg5 Deletion Led to Osteopenia in Mice through mTORC1 Downregulation**
 *Han Kyoung Choi¹, Yuxun Zhang¹, Fei Liu¹. ¹University of Michigan School of Dentistry, United States
Disclosures: Han Kyoung Choi, None
- FRI-442** **ASBMR 2019 Annual Meeting Young Investigator Award**
Macrophage-Lineage TRAP+ Cells Recruit Periosteum-Derived Cells for Periosteal Osteogenesis and Regeneration
 *Ruoxian Deng¹, Bo Gao², Yu Chai³, Hao Chen³, Bo Hu³, Xiao Wang³, Shouan Zhu³, Shuangfei Ni³, Yong Cao³, Mei Wan³, Liu Yang⁴, Zhuojing Luo⁴, Xu Cao⁵. ¹Department of Orthopaedic Surgery, Department of Biomedical Engineering, The Johns Hopkins University School of Medicine, United States, ²Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine; Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, United States, ³Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine, United States, ⁴Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, China, ⁵Department of Orthopaedic Surgery, Institute of Cell Engineering, The Johns Hopkins University School of Medicine, United States
Disclosures: Ruoxian Deng, None
- FRI-443** **Zbtb40 Loss-of-Function Inhibits Osteoblast Mineralization, Affecting Lumbar Spine Bone Mass in Mice**
 *Madison Doolittle¹, Robert Maynard¹, Dana Godfrey¹, Cheryl Ackert-Bicknell¹, Gina Calabrese², Larry Mesner², Charles Farber². ¹University of Rochester, United States, ²University of Virginia, United States
Disclosures: Madison Doolittle, None

- FRI-446** **Local administration of soluble Frizzled2 accelerates bony callus formation during bone fracture repair process in a mouse model**
 *Kenta Nakajima¹, Hisashi Hasegawa¹, Yuji Yamazaki¹, Kenji Nagao¹, Yoshiaki Kitaura², Ung-il Chung³, Shinsuke Ohba³. ¹Kyowa Kirin Co., Ltd, Japan, ²Department of Bioengineering, The University of Tokyo Graduate School of Engineering, Japan, ³Department of Clinical Biotechnology, The University of Tokyo Graduate School of Medicine, Japan
Disclosures: Kenta Nakajima, None
- FRI-448** **Conditional Ablation of mTOR in Early Stages of Osteoblast Lineage Results in Defective Skeletogenesis through the Regulation of PI3K/AKT-mediated Chondrocyte Terminal Differentiation**
 *Diep Nguyen¹, Yun Lu¹, Wei Chen¹, Yi-Ping Li¹. ¹Department of Pathology, University of Alabama at Birmingham, United States
Disclosures: Diep Nguyen, None
- FRI-450** **Interleukin-6 signaling in osteoblasts promotes osteoclast differentiation**
 *Biagio Palmisano¹, Subrata Chowdhury¹, Gerard Karsenty¹, Juan Hidalgo². ¹Department of Genetics and Development, Columbia University Irving Medical Center, United States, ²Department of Cellular Biology, Physiology and Immunology, Faculty of Biosciences, Universitat Autònoma de Barcelona, Spain
Disclosures: Biagio Palmisano, None
- FRI-451** **ASBMR 2019 Annual Meeting Young Investigator Award**
APP promotes osteoblast survival and bone formation by regulating mitochondrial function and preventing oxidative stress
 *Jinxu Pan¹, Fulei Tang², Kai Zhao², Lei Xiong³, Peng Zeng³, Bo Wang³, Haohan Guo³, Lin Mei³, Wen-Cheng Xiong³. ¹Case Western Reserve University, United States, ²Augusta University, United States, ³Case Western Reserve University, United States
Disclosures: Jinxu Pan, None
- FRI-453** **Targeted deletion of Bmal1 in osteoblast causes differential effects on trabecular and cortical bone via BMP2 signaling pathway**
 *Zhuang Qian¹, Ying Zhang¹, Xiaomin Kang¹, Yan Zahng¹, Xinxin Jin¹, Mao Xu¹, Zhengmin Ma¹, Liting Zhang¹, Shufang Wu¹, Hui xia Li², Xin Gao², Zhuanmin Zhang², Hongzhi Sun². ¹Center for Translational Medicine, the First Affiliated Hospital of Xi'an Jiaotong University, China, ²Key Laboratory of Environment and Genes Related to Diseases, Ministry of Education, Medical School of Xi'an Jiaotong University, Xi'an, China
Disclosures: Zhuang Qian, None
- FRI-454** **The Constitutive Photomorphogenesis 9 (COP9) Signalosome (CSN) Complex is Required for Proper Postnatal Skeletal Growth**
 *William Samsa¹, Murali Mamidi¹, Lindsay Bashur¹, Guang Zhou¹. ¹Case Western Reserve University, United States
Disclosures: William Samsa, None
- FRI-458** **Osteoblast-derived Wnt1 regulates cortical bone mass in adult mice**
 *Fan Wang¹, Petri Rummukainen¹, Outi Mäkitie², Roland Baron³, Riku Kiviranta⁴. ¹Institute of Biomedicine, University of Turku, Turku 20520, Finland, Finland, ²Folkhälsan Institute of Genetics, Helsinki 00290, Finland, Finland, ³Department of Oral Medicine, Infection and Immunity, Harvard School of Dental Medicine, Harvard University, Boston, MA 02115, USA, United States, ⁴Department of Endocrinology, Division of Medicine, University of Turku and Turku University Hospital, Turku 20521, Finland, Finland
Disclosures: Fan Wang, None
- FRI-461** **Tiki Regulates Bone Mass via the Inhibition of Wnt Signaling**
 *Xinjun Zhang¹, Weiwei Zhao¹, Bryan MacDonald², Xi He², Alexander Robling³. ¹Huazhong University of Science and Technology, China, ²Harvard Medical School, United States, ³Indiana University School of Medicine, United States
Disclosures: Xinjun Zhang, None

OSTEOCLASTS

- FRI-504 Tethering Function of Mitofusin2 Controls Osteoclast Differentiation**
 *Anna Ballard¹, Rong Zeng¹, Allahdad Zarei¹, Christine Shao¹, Linda Cox¹, Roberta Faccio¹, Deborah Veis¹. ¹Washington University School of Medicine, United States
Disclosures: Anna Ballard, None
- FRI-505 Osteoclasts are a target of the sympathetic nervous system**
 *Audrey C Bergeron¹, Audrie L Langlais¹, Katherine J Motyl¹. ¹Maine Medical Center Research Institute, United States
Disclosures: Audrey C Bergeron, None
- FRI-506 The CaV1.2 L-type calcium channel regulates bone homeostasis in the middle and inner ear**
 *Chike Cao¹, Matthew Greenblatt¹, Geoffrey Pitt¹, Aaron Oswald², Brian Fabella², Yinshi Ren³, Ramona Rodriguez³, Matthew Hilton³, George Trainor⁴. ¹Weill Cornell Medicine, United States, ²The Rockefeller University, United States, ³Duke University, United States, ⁴Innovation Support Center, United States
Disclosures: Chike Cao, None
- FRI-508 Identification of RBP-J/NFATc1-miR182 as a novel network regulating inflammatory osteoclastogenesis and bone resorption**
 *Kazuki Inoue¹, Christine Miller¹, Baohong Zhao¹. ¹HOSPITAL FOR SPECIAL SURGERY, United States
Disclosures: Kazuki Inoue, None
- FRI-509 Osteoclasts promote trabecular bone formation through the suppression of sclerostin expression**
 *Masanori Koide¹, Yasuhiro Kobayashi¹, Teruhito Yamashita¹, Shunsuke Uehara¹, Naoyuki Takahashi¹, Nobuyuki Udagawa¹, Kohei Murakami², Hisataka Yasuda³. ¹Matsumoto Dental University, Japan, ²Okayama University of Science, Japan, ³Oriental Yeast Co., Ltd., Japan
Disclosures: Masanori Koide, None
- FRI-510 Disruption of Heparan Sulfate–RAGE Interaction Impairs Osteoclastogenesis**
 *Miaomiao Li¹, Xiaoxiao Zhang¹, Ding Xu¹. ¹State University of New York at Buffalo, United States
Disclosures: Miaomiao Li, None
- FRI-514 Slit-ROBO Rho GTPase Activating Protein 2 (SRGAP2) in Osteoclasts Limits Inflammatory Osteoclastogenesis and Inhibits Expression of the Coupling Cytokine SLIT3**
 *Bongjin Shin¹, Anne Delany¹, Sun-Kyeong Lee¹, Justine Kupferman², Ewoud Schmidt², Franck Polleux². ¹UConn Health, United States, ²Columbia University, United States
Disclosures: Bongjin Shin, None
- FRI-515 Ga13 restrains osteoclast function by cytoskeletal and mitochondrial regulation**
 *Kazuki Inoue¹, Jumpei Shirakawa¹, Shinichi Nakano¹, Cheng Xu¹, Zhonghao Deng¹, Gregory Vitone¹, Baohong Zhao¹, Viktoriya Syrovatkina², Xin-Yun Huang², Liang Zhao³. ¹Arthritis and Tissue Degeneration Program and The David Z. Rosensweig Genomics Research Center, Hospital for Special Surgery, United States, ²Department of Physiology and Biophysics, Weill Cornell Medical College, United States, ³Department of Orthopedic Surgery, Nanfang Hospital, Southern Medical University, China
Disclosures: Kazuki Inoue, None
- FRI-518 ASBMR 2019 Annual Meeting Young Investigator Award Hematopoietic stem cell-independent erythromyeloid progenitors in the yolk-sac give rise to osteoclasts contributing to the postnatal bone remodeling**
 *Yasuhiro Yahara¹, Benjamin Alman². ¹Duke University, University of Toyama, United States, ²Duke University, United States
Disclosures: Yasuhiro Yahara, None

FRI-519

HES1 is a Novel Determinant of Osteoclast Differentiation

*Jungeun Yu¹, Lauren Schilling¹, Ernesto Canalis¹. ¹UConn Health, United States

Disclosures: Jungeun Yu, None

OSTEOCYTES

FRI-557

Regulatory mechanism of bone formation via Wnt/beta-catenin signaling by long non-coding RNA in osteocytes

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FRI-558

PPAR γ Regulation of Osteocyte Fuel Dependency and Capacity Contributes to the Balance of Systemic Energy Metabolism

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Disclosures: Sudipta Baroi, None

FRI-559

Osteocyte Oxidative Stress Following Estrogen Loss, Microdamage and Disuse

*Dorra Frikha-Benayed¹, Mitchell Schaffler¹, Jelena Basta-Plajkic¹, Robert J Majeska¹. ¹The city college of New York, United States

Disclosures: Dorra Frikha-Benayed, None

FRI-560

Mechanical Loading Reduces the Adverse Effects of Fatty Acid Overload on Osteocytes

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FRI-561

Impaired 1,25 dihydroxyvitamin D action contributes to the abnormalities in lacuno-canalicular remodeling observed in the Hyp mouse model of XLH

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Disclosures: Eva Liu, None

FRI-563

Live Cell and Intravital Imaging Reveals Differences in Mitochondrial Redox State, Morphology and Number between Osteoblasts and Osteocytes

*LeAnn Tiede-Lewis¹, Anthony Meljanac¹, Nuria Lara¹, Mark Johnson¹, Sarah Dallas¹, Yukiko Kitase², Lynda Bonewald². ¹University of Missouri Kansas City, United States,

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FRI-564

Accelerated aging and bone loss in mice lacking PTH receptor in osteocytes

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Disclosures: Yuhei Uda, None

OSTEOPOROSIS - ASSESSMENT

FRI-589

MRI-based textural analysis of trabecular bone: a novel method for opportunistic screening of bone quality

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Disclosures: Jonathan Cheah, None

FRI-591

Local bone density defects in patients with femoral neck fracture

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Disclosures: Luis Del Rio, None

FRI-592

Stratification of fracture risk in type 2 Diabetes: development and validation of clinical algorithms from a task force of relevant medical societies

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Disclosures: Iacopo Chiodini, Eli Lilly, Consultant

FRI-594

External bone size predicts age-changes in femoral neck structure and mass leading to increased fracture risk independent of bone mineral density: Findings from the Study of Women's Health Across the Nation and the Study of Osteoporotic Fractures in Men

*Karl Jepsen¹, Carrie Karvonen-Gutierrez¹, Sioban Harlow¹, John Randolph¹, Gregory Clines¹, Michelle Hood¹, Michael Elliott¹, Kathy Peters², Stephanie Harrison², Peggy Cawthon², Jane Cauley³, Gail Greendale⁴, Arun Karlamangla⁴, Eric Orwoll⁵. ¹University of Michigan, United States, ²California Pacific Medical Center Research Institute, United States, ³University of Pittsburgh, United States, ⁴University of California, Los Angeles, United States, ⁵Oregon Health and Science University, United States

Disclosures: Karl Jepsen, None

FRI-597

ASBMR 2019 Annual Meeting Young Investigator Award**Comparison of the predictive ability of quantitative and qualitative scoring methods of osteoporotic vertebral fractures using operational skeletal fragility outcomes**

*Fjorda Koromani¹, Katerina Trajanoska¹, Ling Oei¹, Carola Zillikens¹, Gabriel Krestin¹, Andre Uitterlinden¹, Edwin Oei¹, Fernando Rivadeneira¹, Enisa Shevroja². ¹Erasmus MC, Netherlands, ²Lausanne University Hospital, Switzerland

Disclosures: Fjorda Koromani, None

FRI-598

Prevalence of Spinal Osteoporosis in Women and Men Considering Both Bone Strength and Volumetric BMD — A Comparison of Caucasians (in the United States) and Koreans (in Korea)

*David C. Lee¹, Namki Hong², Yumie Rhee², Sundeep Khosla³, Tony M. Keaveny⁴. ¹O.N. Diagnostics, United States, ²Yonsei University College of Medicine, Republic of Korea, ³Mayo Clinic, United States, ⁴University of California, Berkeley, United States

Disclosures: David C. Lee, O.N. Diagnostics, Other Financial or Material Support

FRI-599**Measured Height Loss Predicts Incident Clinical Fractures Independently from FRAX: A Registry-Based Cohort Study**

*William Leslie¹, Lisa Lix¹, John Schousboe², Suzanne Morin³, Patrick Martineau⁴, Helena Johansson⁵, John Kanis⁶, Eugene McCloskey⁶, Nicholas Harvey⁷. ¹University of Manitoba, Winnipeg, Canada, Canada, ²Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US; ³University of Minnesota, Minneapolis, US, United States, ⁴McGill University, Montreal, Canada, Canada, ⁵University of Manitoba, Winnipeg, Canada; Harvard Medical School, Boston, US, Canada, ⁶Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK; Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, United Kingdom, ⁷Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, ⁸MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK; NIHR Southampton Biomedical Research Centre, University of Southampton and University Hospital Southampton NHS Foundation Trust, Southampton, UK, United Kingdom

Disclosures: William Leslie, None

FRI-600**Effect of Soft Tissue Corrections on Trabecular Bone Score (TBS) in Women and Men with Type 2 Diabetes: A Rising Tide Floats All Boats**

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Disclosures: Patrick Martineau, None

OSTEOPOROSIS - EPIDEMIOLOGY**FRI-631****Five-fold Increased Atypical Femur Fracture Risk Among North American Asians is Similar Across Asian Ethnic Subgroups and Is Not Explained by Confounding Variables**

*Annette Adams¹, Bonnie Li¹, Denison Ryan¹, Richard Dell¹, Erik Geiger², Dennis Black². ¹Kaiser Permanente Southern California, United States, ²University of California, San Francisco, United States

Disclosures: Annette Adams, None

FRI-632**Risk of osteoporosis with non-vitamin K antagonist oral anticoagulant vs. warfarin among patients with atrial fibrillation: a real-world nationwide propensity score-matched cohort study**

*Huei-Kai Huang¹, Carol Chiung-Hui Peng², Shu-Man Lin³, Pin-Sung Liu⁴, Ching-Hui Loh⁴, Jin-Yi Hsu⁵. ¹Department of Family Medicine, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, ²Department of Internal Medicine, University of Maryland Medical Center Midtown Campus, United States, ³Department of Physical Medicine and Rehabilitation, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, ⁴Center for Aging and Health, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, ⁵Department of Neurology, Buddhist Tzu Chi General Hospital, Taiwan, Province of China

Disclosures: Huei-Kai Huang, None

FRI-633**Type 2 Diabetes Mellitus and the risk of osteoporotic vertebral fractures: a meta-analysis of summary and individual participant data from 852,705 individuals**

*Fjorda Koromani¹, Ling Oei¹, Katerina Trajanoska¹, Josje Schoufour¹, Taulant Muka¹, Oscar Franco¹, Arfan Ikram¹, Carola Zillikens¹, Andre Uitterlinden¹, Gabriel Krestin¹, Edwin Oei¹, Fernando Rivadeneira¹, Enisa Shevroja², Olivier Lamy², Didier Hans², Tassos Anastasiades³, William Leslie³, Robert Josse⁴, Jerilynn Prior⁴, Stephanie Kaiser⁵, David Goltzman⁶, Brian Lentle⁷, Robert Josse⁸, Jerilynn Prior⁸, Eugene McCloskey⁹. ¹Erasmus MC, Netherlands, ²Lausanne University Hospital, Switzerland, ³University of Manitoba, Canada, ⁴University of Toronto, Netherlands, ⁵Dalhousie University, Canada, ⁶McGill University, Canada, ⁷University of British Columbia, Canada, ⁸University of Toronto, Canada, ⁹The Mellenby Centre for Bone Research, University of Sheffield, Netherlands

Disclosures: Fjorda Koromani, None

- FRI-634** **Positive effects of low LDL-C and statins on bone mineral density: an integrated epidemiological observation analysis and Mendelian Randomization study**
 *Hoi-Yee Gloria Li¹, Ching-Lung Cheung¹, Philip Chun-Ming Au¹, Kathryn Choon-Beng Tan¹, Ian Chi-Kei Wong¹, Pak-Chung Sham¹. ¹The University of Hong Kong, Hong Kong
Disclosures: Hoi-Yee Gloria Li, None
- FRI-637** **Cardiovascular events in a population-based observational cohort of bisphosphonate users and untreated control subjects linked to BMD and comorbidity information**
 *Alexander Rodriguez¹, Peter Ebeling¹, Martin Ernst², Mads Nybo³, Pernille Hermann³, Daniel Prieto-Alhambra⁴, Bo Abrahamsen⁵. ¹Monash University, Australia, ²University of Southern Denmark, Denmark, ³Odense University Hospital, Denmark, ⁴University of Oxford, United Kingdom, ⁵University of Southern Denmark; Holbæk Hospital, Denmark
Disclosures: Alexander Rodriguez, None
- FRI-639** **The Pattern of Incident Fractures in Patients with Type 2 Diabetes Mellitus**
 *Cindy Sarodnik¹, Nicklas Rasmussen², Sandrine Bours³, Nicolaas Schaper⁴, Frank de Vries⁵, Peter Vestergaard⁶, Joop van den Bergh⁷, Annemarië Driessen⁸. ¹NUTRIM Research School, Maastricht University, Maastricht, The Netherlands, Netherlands, ²Steno Diabetes Center North Jutland, Aalborg University Hospital, Aalborg, Denmark, Denmark, ³Department of Internal Medicine, Subdivision Rheumatology, Maastricht University Medical Centre+, CAPHRI Research School, Maastricht University, Maastricht, The Netherlands, Netherlands, ⁴NUTRIM Research School, Maastricht University, Department of Internal Medicine, Subdivision Endocrinology, Maastricht University Medical Centre+, Maastricht, The Netherlands, Netherlands, ⁵Utrecht University, Department of Pharmaceutical Sciences, Division of Pharmacoepidemiology & Clinical Pharmacology, Utrecht, the Netherlands, Netherlands, ⁶Steno Diabetes Center North Jutland, Department of Endocrinology, Aalborg University Hospital, Aalborg, Denmark, Denmark, ⁷NUTRIM Research School, Department of Internal Medicine, Maastricht University Medical Centre+, Department of Internal Medicine, VieCuri Medical Center, Venlo, the Netherlands, University Hasselt, Biomedical Research Institute, Hasselt, Belgium, Netherlands, ⁸NUTRIM Research School, Maastricht University, Department of Internal Medicine, Cardiovascular Research Institute Maastricht, and Department of Clinical Pharmacy and Toxicology, Maastricht University Medical Centre+, Maastricht, The Netherlands, Netherlands
Disclosures: Cindy Sarodnik, None
- FRI-640** **The Risk of Hip and Non-Vertebral Fractures in Parkinson's Disease: A Systematic Review and Meta-Analysis**
 *Marian Schini¹, Tatiane Vilaca¹, Richard Eastell¹, Susan Harnan², Anthea Sutton², Edith Poku², Steve Cummings³. ¹Academic Unit of Bone Metabolism, The University of Sheffield, UK, United Kingdom, ²School of Health and Related Research, The University of Sheffield, UK, United Kingdom, ³University of California, San Francisco, United States
Disclosures: Marian Schini, None
- FRI-641** **Differential Risk of Fracture Attributable to Type 2 Diabetes Mellitus According to Skeletal Site**
 *John Schousboe¹, Suzanne Morin², Patrick Martineau³, Lisa Lix⁴, William Leslie⁴. ¹Park Nicollet Clinic and HealthPartners Institute, United States, ²Research Institute of the McGill University Health Centre, Canada, ³University of Manitoba and Harvard University, Canada, ⁴University of Manitoba, Canada
Disclosures: John Schousboe, None
- FRI-642** **Associations of Clinically Unrecognized vs Clinically Recognized Vertebral Fracture with Subsequent Mortality**
 *John Schousboe¹, Lisa Lix², William Leslie², Suzanne Morin³. ¹Park Nicollet Clinic and HealthPartners Institute, United States, ²University of Manitoba, Canada, ³Research Institute of the McGill University Health Centre, Canada
Disclosures: John Schousboe, None

FRI-643

Effect of Time Since Prior Fracture on Mortality at the Time of Clinical Assessment: A Registry-Based Cohort Study

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Disclosures: John Schousboe, None

FRI-644

Real-World Outcomes and Imminent Fractures After Index Fragility Fracture: A Population Study

*Jonathan D Adachi¹, Jacques P Brown², Emil H Schemitsch³, Jean-Eric Tarride⁴, Ponda Motsepe-Ditshego⁵, Natasha Burke⁵, Stephen M Colgan⁵, Lubomira Slatkovska⁵. ¹St Joseph's Healthcare, McMaster University, Canada, Canada, ²CHU de Québec (CHUL) Research Centre, Laval University, Canada, Canada, ³Division of Orthopaedics, Department of Surgery, Western University, Canada, Canada, ⁴Department of Health Research Methods, Evidence and Impact (HEI), McMaster University, Canada, ⁵Amgen Canada Inc, Canada

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OSTEOPOROSIS - HEALTH SERVICES RESEARCH

FRI-687

Real-World Outcomes and Cost of Management of Osteoporotic Fractures in Ontario, Canada

*Jean-Eric Tarride¹, Johnathan D Adachi², Jacques P Brown³, Emil H Schemitsch⁴, Ponda Motsepe-Ditshego⁵, Stephen M Colgan⁵, Natasha Burke⁵. ¹Department of Health Research Methods, Evidence and Impact (HEI), McMaster University, Canada, Canada, ²St Joseph's Healthcare, McMaster University, Canada, Canada, ³CHU de Québec (CHUL) Research Centre, Laval University, Canada, Canada, ⁴Division of Orthopaedics, Department of Surgery, Western University, Canada, Canada, ⁵Amgen Canada Inc, Canada

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FRI-688

True costs of patient management over 18 months following a hip, vertebral, distal radius, or proximal humerus fragility fracture in France – Results from the ICUROS Study

*Astrid Coassy¹, Hervé Locrelle¹, Thierry Thomas¹, Axel Svedbom², Roland Chapurlat³, Bernard Cortet⁴, Patrice Fardellone⁵, Orsel Philippe⁶, Christian Roux⁷, John Kanis⁸. ¹INSERM U1059 - Université de Lyon, CHU de St-Etienne, France, ²Mapi, Sweden, ³INSERM Research Unit 1033 - Université de Lyon, Hospices Civils de Lyon, France, ⁴CHU de Lille, France, ⁵CHU Amiens-Picardie, France, ⁶Hôpitaux Universitaires Saint-Louis-Lariboisière-Fernand-Widal, AP-HP - Inserm UMR132 BIOSCAR, Université Paris Diderot, France, ⁷Hôpital Cochin, AP-HP - INSERM U1153, Université Paris Descartes, France, ⁸Centre for Metabolic Bone Diseases, University of Sheffield Medical School, United Kingdom

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FRI-689

Social Isolation: An Important Predictor of Adverse Events and Patient Reported Outcome Measures (PROMs) in Elderly Hip Fracture Patients

*Dina Sheira¹, Joseph M. Lane¹, Jackie Finik¹, Marianna B. Frey¹, Serena Lian¹, Michael Tiongson¹, Kirsten Grueter¹, Lisa A. Mandl¹. ¹Hospital for Special Surgery, United States

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FRI-691

Improving Pain Control Following Fractures in the Emergency Department: the PAINFREE Initiative

*Suzanne Morin¹, David Lussier¹, Jose Morais¹, Céline Gélinas¹, Nancy Mayo¹, Michelle Wall², Marija Djekic-Ivankovic³, Claudie Berger³, Amel Baghdadli³, Daoust Raoul⁴. ¹McGill University, Canada, ²Research Institute of the McGill University Health Center, Canada, ³Research Institute of the McGill University Health Centre, Canada, ⁴Université de Montréal, Canada

Disclosures: Suzanne Morin, None

OSTEOPOROSIS - NUTRITION, DIETARY SUPPLEMENTS AND PHYSICAL ACTIVITY

- FRI-706** **The Effect of Exercise or Bisphosphonate Use on Bone Density and Microarchitecture among Postmenopausal Women with Low Bone Mass Experiencing Modest Weight Loss**
 *Kristen Beavers¹, Lauren Fasth¹, Nancy Waltman², Kevin Kupzyk², Laura Flores², Laura Bilek², Joan Lappe³. ¹Wake Forest University, United States, ²University of Nebraska Medical Center, United States, ³Creighton University, United States
Disclosures: Kristen Beavers, None
- FRI-707** **ASBMR 2019 Fund for Research and Education Diversity Young Investigator Award**
Evaluating the Relationship Between Physical Activity Level and Bone Structure: a pQCT Analysis
 *Laura Flores¹, Sarah Nelson¹, Kevin Kupzyk¹, Nancy Waltman¹, Sophia Pankratz¹, Laura Bilek¹, Joan Lappe². ¹University of Nebraska Medical Center, United States, ²Creighton University, United States
Disclosures: Laura Flores, None
- FRI-708** **Effectiveness of Resistance and Jump Training or Machine-based Isometric Training for Middle-aged and Older Men with Osteopenia and Osteoporosis: LIFTMOR for Men Trial Preliminary Findings**
 *Amy T Harding¹, Benjamin K Weeks¹, Lisa J Weis², Conor Lambert³, Steven L Watson³, Belinda R Beck³. ¹School of Allied Health Sciences, Griffith University, Australia, ²The Bone Clinic, Australia, ³School of Allied Health Sciences, Australia
Disclosures: Amy T Harding, None
- FRI-709** **ASBMR 2019 Annual Meeting Young Investigator Award**
High impact exercise increased femoral neck bone density with no adverse effects on imaging markers of knee osteoarthritis in postmenopausal women
 *Chris Hartley¹, Jonathan P Folland¹, Katherine Brooke-Wavell¹, Robert Kerslake². ¹NCSEM, SSEHS, Loughborough University, United Kingdom, ²Nottingham University Hospitals Trust, United Kingdom
Disclosures: Chris Hartley, None
- FRI-710** **A comparison of DXA-derived bone responses to impact versus resistance training in young adult women: The OPTIMA-Ex trial.**
 *Conor Lambert¹, Amy Harding¹, Steven Watson¹, Benjamin Weeks¹, Belinda Beck². ¹School of Allied Health Sciences, Griffith University, Gold Coast, Australia ²Menzies Health Institute Queensland, Griffith University, Gold Coast, Australia, Australia, ²1 School of Allied Health Sciences, Griffith University, Gold Coast, Australia ²Menzies Health Institute Queensland, Griffith University, Gold Coast, Australia ³The Bone Clinic, Brisbane, Queensland, Australia, Australia
Disclosures: Conor Lambert, None
- ## OSTEOPOROSIS - PATHOPHYSIOLOGY
- FRI-728** **TRAF3 in mesenchymal progenitor cells limits low-level chronic inflammation associated with osteoporosis by inhibiting GSK-3 β induced NF-KB activation**
 *Akram Ayoub¹, Rong Duan², Jinbo Li², Lianping Xing², Zhenqiang Yao², Brendan Boyce². ¹University of Rochester Medical Center, United States, ²University of Rochester Medical Center, United States
Disclosures: Akram Ayoub, None
- FRI-729** **Interactive Effects of Lactation History and Estrogen Status on Cellular Activities of Rat Maternal Bone**
 *Yihan Li¹, Yilu Zhou¹, Chantal de Bakker¹, Hongbo Zhao¹, Luqiang Wang¹, Leilei Zhong¹, Lutian Yao¹, Ling Qin¹, Xiaowei Sherry Liu¹. ¹University of Pennsylvania, United States
Disclosures: Yihan Li, None

- FRI-730** **Inverse correlation between trabecular bone volume and bone marrow adipose tissue in rats treated with osteoanabolic agents**
 *Michaela Reagan¹, Samantha Costa¹, Heather Fairfield¹. ¹Maine Medical Center Research Institute, United States
Disclosures: Michaela Reagan, UCB Pharma, Grant/Research Support

OSTEOPOROSIS - SECONDARY OSTEOPOROSIS

- FRI-737** **Long term consequences of bariatric surgery: the obesity of bone and a subnormal ratio of bone mass to body weight**
 *Maria Augusta Alencar¹, Iana de Araujo¹, Luciana Parreiras e Silva¹, Adriana Carvalho¹, Marcello Nogueira Barbosa¹, Wilson Salgado Jr¹, Francisco Jose de Paula¹, Carlos Salmon². ¹Ribeirao Preto Medical School, USP, Brazil, ²FFCLRP, USP, Brazil
Disclosures: Maria Augusta Alencar, None
- FRI-738** **Utility of Trabecular Bone Score (TBS) for Fracture Risk Assessment in Glucocorticoid-Induced Osteoporosis**
 *Helena Florez¹, Silvia Ruiz-Gaspà¹, Ana Monegal¹, Núria Guañabens¹, Pilar Peris¹, José Hernández-Rodríguez², Sergio Prieto-González², Maria C. Cid², Africa Muxi³, Josep Lluís Carrasco⁴. ¹Metabolic Bone Diseases Unit, Department of Rheumatology, Hospital Clinic, University of Barcelona, Spain, ²Vasculitis Research Unit, Department of Autoimmune Diseases, Hospital Clinic, University of Barcelona, Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona, Spain., Spain, ³Department of Nuclear Medicine, Hospital Clinic, University of Barcelona, Spain, ⁴Biostatistics, Department of Basic Clinical Practice, University of Barcelona, Barcelona, Spain., Spain
Disclosures: Helena Florez, None
- FRI-739** **Impaired Cortical and Trabecular microstructure of Proximal Femur in HIV-infected Men Compared to Age-matched Uninfected Men measured by 3D Cortical Bone Mapping**
 *Namki Hong¹, Jung Ho Kim¹, Heejae Jung¹, Woon Ji Lee¹, Hyeon Chang Kim¹, Yumie Rhee¹, Graham Treece², J. Keenan Brown³. ¹Yonsei University College of Medicine, Republic of Korea, ²Department of Engineering, University of Cambridge, United Kingdom, ³Mindways, United States
Disclosures: Namki Hong, None
- FRI-740** **Effects of SGLT2 Inhibitors on Fractures and Bone Mineral Density in Type 2 Diabetes Mellitus: An Updated Meta-analysis**
 *Xiaoyu Li¹, Bei Sun¹, Liming Chen¹. ¹NHC Key Laboratory of Hormones and Development (Tianjin Medical University), Tianjin Key Laboratory of Metabolic Diseases, Tianjin Medical University Metabolic Diseases Hospital & Tianjin Institute of Endocrinology, Tianjin Medical University, China
Disclosures: Xiaoyu Li, None
- FRI-744** **Subclinical hyperthyroidism is associated with increased fracture risk: The MrOS Sweden Study**
 *Johan Svensson¹, Claes Ohlsson¹, Dan Mellström¹, Magnus Karlsson², Mattias Lorentzon³, Catharina Lewerin⁴. ¹Center for Bone and Arthritis Research at the Sahlgrenska Academy (CBAR), Institute of Medicine, University of Gothenburg, Sweden, ²Clinical and Molecular Osteoporosis Research Unit, Department of Clinical Sciences and Orthopedics, Lund University, Sweden, ³Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Center for Bone and Arthritis Research at the Sahlgrenska Academy (CBAR), Institute of Medicine, University of Gothenburg, Sweden, ⁴Department of Hematology and Coagulation, Sahlgrenska University Hospital, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden
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OSTEOPOROSIS - TREATMENT

FRI-765

A sensitive method to monitor the migration of human bone marrow mesenchymal stem cells in mice models.

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FRI-766

Modeling-based Bone Formation Persists in the Femoral Neck Despite Remodeling Inhibition in Subjects Treated with Denosumab

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Disclosures: David W Dempster, Amgen, Consultant, Amgen, Grant/Research Support, Amgen, Speakers' Bureau

FRI-767

Effect of Bisphosphonate on Prevention of Bone Loss after Gastrectomy: A Randomized Controlled Trial

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Disclosures: Ki-Hyun Baek, None

FRI-769

Osteosarcoma Surveillance Program Using Real World Data from US Pharmacy Claims Linked to State Cancer Registry Data to Estimate the Incidence of Osteosarcoma Among Patients Treated with Teriparatide (Forteo)

*Nicole Kellier-Steele¹. ¹Eli Lilly and Company, United States

Disclosures: Nicole Kellier-Steele, Eli Lilly and Company, Other Financial or Material Support

FRI-770

A POST HOC ANALYSIS OF ROMOSUZUMAB EFFICACY AND BASELINE FRACTURE RISK – GREATER REDUCTION IN FRACTURE OUTCOMES IN PATIENTS AT HIGHER RISK

*Eugene McCloskey¹, Mattias Lorentzon², Helena Johansson³, John Kanis³, Nicholas Harvey⁴. ¹Centre for Integrated research in Musculoskeletal Ageing, University of Sheffield, United Kingdom, ²Sahlgrenska Academy, University of Gothenburg, Sweden, ³Mary McKillop Health Institute, Australian Catholic University, Australia, ⁴MRC Lifecourse Epidemiology Unit, University of Southampton, United Kingdom

Disclosures: Eugene McCloskey, Astellas, Grant/Research Support, UCB, Grant/Research Support, Amgen, Grant/Research Support

FRI-771

Denosumab 10 Year Simulation of Bone Remodeling In Human Biopsies

*Duncan Tourolle né Betts¹, Charles Ledoux¹, Daniele Boaretti¹, Ralph Müller¹, Mauricio Aguilera², Najma Saleem², Mauricio Aguilera³, Najma Saleem³. ¹Institute for Biomechanics, ETH Zurich, Switzerland, ²Amgen Inc., Mexico, ³Amgen Inc., United States

Disclosures: Duncan Tourolle né Betts, Amgen Inc., Grant/Research Support

- FRI-774** **Is severely suppressed bone turnover in patients on long term bisphosphonate treatment causally related atypical femoral fracture?**
 *Shijing Qiu¹, George Divine¹, Elizabeth Warner¹, Sudhaker Rao¹. ¹Henry Ford Health System, United States
Disclosures: Shijing Qiu, None
- FRI-775** **Bone Balance in Postmenopausal Women Treated with Combined High-Dose Teriparatide and Denosumab: The DATA-HD Randomized Controlled Trial**
 *Sabashini K. Ramchand¹, Joy N. Tsai¹, Natalie L. David¹, Benjamin Z. Leder¹, Hang Lee², Richard Eastell³. ¹Department of Medicine, Endocrine Unit, Massachusetts General Hospital and Harvard Medical School, United States, ²Biostatistics Center, Massachusetts General Hospital and Harvard Medical School, United States, ³Academic Unit of Bone Metabolism, University of Sheffield, United Kingdom
Disclosures: Sabashini K. Ramchand, None
- FRI-776** **Risk predictors for seniors at imminent risk of fracture**
 *Richard Sheer¹, Yawen Jiang², Lavanya Sudharshan³, Margaret Pasquale³. ¹Humana Healthcare Research Inc., United States, ²Amgen, United States, ³Humana Healthcare Research, United States
Disclosures: Richard Sheer, Humana Healthcare Research, Major Stock Shareholder
- FRI-777** **To determine the therapeutic potential of senolytic bone marrow MSCs for frailty with bone fracture**
 *Jia-Fwu Shyu¹, Yi-Jun Lin¹, Tzu-Hui Chu¹, Cheng-Yuan Hsiao¹, Pei-Jiun Tsai², Tien-Hua Chen². ¹Department of Biology and Anatomy, National Defense Medical Center, Taiwan, Province of China, ²Institute of Anatomy and Cell Biology, National Yang-Ming University, Taiwan, Province of China
Disclosures: Jia-Fwu Shyu, None
- FRI-778** **Study of Twice-Weekly Injections of Teriparatide by Comparing Efficacy with Once-Weekly Injections in Osteoporosis Patients: The TWICE Study**
 *Toshitsugu Sugimoto¹, Masataka Shiraki², Hiroshi Hagino³, Takeshi Yoshimura⁴, Toshitaka Nakamura⁵. ¹Eikokai Ono Hospital, Japan, ²Research Institute and Practice for Involutional Diseases, Japan, ³School of Health Science, Tottori University, Japan, ⁴Medical Affairs Department, Asahi Kasei Pharma Corporation, Japan, ⁵Toto Sangenjaya Rehabilitation Hospital, Japan
Disclosures: Toshitsugu Sugimoto, Astellas Pharma, Eisai, Daiichi-Sankyo, Chugai Pharmaceutical, and Eli Lilly Japan, Grant/Research Support, Asahi Kasei Pharma and Daiichi-Sankyo, Consultant
- FRI-781** **Bisphosphonates Prevent Bone Loss Associated with Denosumab Treatment Discontinuation**
 *María Belén Zanchetta¹, Carolina Pelegrin¹, Fernando Silveira², Cesar Bogado², Jose Zanchetta², Helena Salerni³, Pablo Costanzo³. ¹IDIM, Universidad del Salvador, Argentina, ²IDIM, Argentina, ³Consultorios de Investigación Clínica Endocrinológica y del Metabolismo Óseo (CICEMO), Argentina
Disclosures: María Belén Zanchetta, None

PARACRINE REGULATORS

- FRI-822** **Suppression of RANKL expression using a CRISPR interference transgene mimics gene deletion in mice: a loss-of-function approach that may offer improved cell type-specificity compared to the Cre-loxP system**
 *Ryan Macleod¹, Keisha Cawley¹, Qiang Fu¹, Melda Onal¹, Charles O'Brien¹. ¹University of Arkansas for Medical Sciences, United States
Disclosures: Ryan Macleod, None
- FRI-824** **The Composition Of The Gut Microbiota Is A Non-Genomic Contributor To Bone Mass Heritability**
 *Abdul M Tyagi¹, Emory Hsu¹, Mingcan Yu¹, Jau-Yi Li¹, Jonathan Adams¹, Rheinnallt M. Jones¹, Roberto Pacifici¹. ¹Emory University, United States
Disclosures: Abdul M Tyagi, None

PRECLINICAL MODELS OF MUSCULOSKELETAL DISORDERS

- FRI-833 Insights from Lexicon Pharmaceuticals' Genome5000™ Mouse Gene Knockout Campaign**
 *Robert Brommage¹, David R. Powell¹, Peter Vogel². ¹Lexicon Pharmaceuticals, United States, ²St Jude Children's Research Hospital, United States
Disclosures: Robert Brommage, Lexicon Pharmaceuticals, Grant/Research Support
- FRI-834 Novel model of restricted mobility induced skeletal detriment in zebrafish (*Danio rerio*)**
 *Deepak Kumar Khajuria¹, David Karasik². ¹(1)The Musculoskeletal Genetics Laboratory, The Azrieli Faculty of Medicine, Bar-Ilan University, Safed 1311502, Israel (2)Department of Orthopaedics and Rehabilitation, Penn State University, College of Medicine, Hershey, PA 17033-0850, USA, United States, ²The Musculoskeletal Genetics Laboratory, The Azrieli Faculty of Medicine, Bar-Ilan University, Safed 1311502, Israel, Israel
Disclosures: Deepak Kumar Khajuria, None
- FRI-835 Anti-interleukin-6 therapy (tocilizumab) improves chronic hip synovitis and bone healing in a piglet model of ischemic osteonecrosis of the femoral head**
 *Harry Kim¹, Yunshi Ren¹, Olumide Aruwajoye¹, Zhuo Deng¹, Thomas Mitchell², Michael Kutschke². ¹Texas Scottish Rite Hospital, United States, ²UT Southwestern Medical Center, United States
Disclosures: Harry Kim, Genentech, Other Financial or Material Support
- FRI-836 The SH3BP2-SYK Axis Regulates Alveolar Bone Loss in a Mouse Model for Periodontitis**
 *Mizuho Kittaka¹, Tetsuya Yoshimoto¹, Yasuyoshi Ueki¹, Collin Schlosser², Mikihiro Kajiya³, Hidemi Kurihara³, Ernst Reichenberger⁴. ¹Department of Biomedical Sciences and Comprehensive Care, Indiana University School of Dentistry, Indianapolis, United States, ²Department of Orthodontics and Dentofacial Orthopedics, University of Missouri-Kansas City, School of Dentistry, United States, ³Department of Periodontal Medicine, Applied Life Sciences, Institute of Biomedical & Health Sciences, Graduate School of Biomedical & Health Sciences, Hiroshima University, Japan, ⁴Department of Reconstructive Sciences, School of Dental Medicine, University of Connecticut Health, United States
Disclosures: Mizuho Kittaka, None
- FRI-838 Investigating Global Changes in Gene Expression in a Murine Model of Cherubism**
 *Peter Maye¹, Tulika Sharma¹, Ernst Reichenberger¹, Archana Sanjay¹, Justin Cotney¹. ¹UConn Health Center, United States
Disclosures: Peter Maye, None
- FRI-840 CaMKK2-AMPK-p38 MAPK Axis in Osteoarthritis**
 *Uma Sankar¹, Elsa Mevel¹, Justin Williams¹. ¹Indiana University School of Medicine, United States
Disclosures: Uma Sankar, None
- FRI-844 OI fractures show delayed healing and increased possibility of re-fracture in murine models**
 *Jennifer Zieba¹, Elda Munivez¹, Alexis Castellon¹, Brendan Lee¹. ¹Baylor College of Medicine, United States
Disclosures: Jennifer Zieba, None

PRECLINICAL MODELS: NUTRITION AND PHARMACOLOGY

- FRI-869 Different effects of Abaloparatide and hPTH(1-34) on Bone Resorption and Bone Formation**
 *Tara Mullarkey¹, Heike Arlt¹, Dorothy Hu², Roland Baron², Tadatashi Sato³, Marc Wein⁴, Bruce Mitlak⁵, Beate Lanske⁶, Tatiana Besschetnova⁶. ¹Radius Health, Inc., United States, ²Harvard Dental and Harvard Medical School, United States, ³Endocrine Unit, Massachusetts General Hospital, Harvard Medical School, Boston, United States, ⁴Endocrine Unit, Massachusetts General Hospital, Harvard Medical School, United States, ⁵Radius Health, Inc, United States, ⁶Radius Health, Inc., United States
Disclosures: Tara Mullarkey, Radius Health Inc, Major Stock Shareholder

FRI-870

Bone vascular remodeling and pericytes mobilization during the transient anabolic response to anti-sclerostin antibodies treatment and its rescue by iPTH

*Maude Gerbaix¹, Serge Ferrari¹, Bernard Roche², Marie-Hélène Lafage Proust². ¹Division of Bone Diseases, Geneva University Hospitals and Faculty of Medicine, Geneva, Switzerland, Switzerland, ²INSERM U1059, Université de Lyon, Saint Etienne, France, France

Disclosures: Maude Gerbaix, None

FRI-873

A blueberry-enriched diet counteracts the effects of estrogen deficiency in mice on bone, skeletal muscle, and peripheral fat, and alters the gut microbiome.

*Amy Y Sato¹, Meloney Cregor¹, Kevin McAndrews¹, Sam Bosco¹, David B Burr¹, Cindy H Nakatsu², Gretel G Pellegrini³, Linda D McCabe⁴, George P McCabe⁴, Mario G Ferruzzi⁵, Mary A Lila⁵, Munro Peacock⁶, Connie M Weaver⁷, Teresita M Bellido⁸. ¹Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, ²Department of Agronomy, Purdue University, United States, ³Department of Anatomy and Cell Biology, Indiana University School of Medicine; CONICET-UBA Instituto de Inmunología, Genética y Metabolismo (INIGEM), FFyB-Hospital de Clínicas, Bs As, Argentina, United States, ⁴Department of Statistics, Purdue University, United States, ⁵Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, United States, ⁶Department of Medicine, Division of Endocrinology, Indiana University School of Medicine, United States, ⁷Department of Nutrition, Purdue University, United States, ⁸Department of Anatomy and Cell Biology; Department of Medicine, Division of Endocrinology, Indiana University School of Medicine; Roudebush Veterans Administration Medical Center, United States

Disclosures: Amy Y Sato, None

FRI-874

Dynamics of Modeling- and Remodeling-Based Bone Formation in Response to Intermittent Parathyroid Hormone (PTH) in Male, Female, and Ovariectomized (OVX) Rats

*Wenzheng Wang¹, Wei-Ju Tseng¹, Hongbo Zhao¹, Nathaniel Dymant¹, Xiaowei Sherry Liu¹. ¹University of Pennsylvania, United States

Disclosures: Wenzheng Wang, None

RARE BONE DISEASES - CLINICAL

FRI-890

Mazabraud syndrome is often associated with complications of FD/MAS; a multicenter international cohort study.

*Marlous Hagelstijn-Rotman¹, Natasha Appelman-Dijkstra¹, Alison Boyce², Bas Majoor³, Deborah Gensburger⁴, Michiel van de Sande⁵, Sander Dijkstra⁵, Roland Chapurlat⁶. ¹Center for Bone Quality, dept. of Internal Medicine, division of Endocrinology, Leiden University Medical Center (LUMC), Netherlands, ²Skeletal Disorders and Mineral Homeostasis Section, National Institute of Dental and Craniofacial Research, National Institutes of Health, United States, ³Dept. of Orthopaedic surgery, Leiden University Medical Center (LUMC), Netherlands, ⁴INSERM UMR 1033, University of Lyon, Hôpital Edouard Herriot, France, ⁵Dept. of Orthopaedic surgery, Leiden University Medical Center (LUMC), , Netherlands, ⁶INSERM UMR 1033, University of Lyon, Hôpital Edouard Herriot, Lyon, France, France

Disclosures: Marlous Hagelstijn-Rotman, None

FRI-891

Teriparatide (TPTD) for Premenopausal Idiopathic Osteoporosis: A Randomized Single Switch-Over Trial

*Adi Cohen¹, Stephanie Shiau¹, Sanchita Agarwal¹, Mafo Kamanda-Kosse¹, Mariana Bucovsky¹, John Williams¹, Elizabeth Shane¹, Robert R. Recker², Joan M. Lappe², Julie Stubby², David W. Dempster³, Hua Zhou³. ¹Columbia University Irving Medical Center, United States, ²Creighton University School of Medicine, United States, ³Helen Hayes Hospital, United States

Disclosures: Adi Cohen, None

- FRI-892** **A Phase 1 PK/PD Study of Once vs Twice Daily Administration of rhPTH(1-84) in Patients With Hypoparathyroidism: Interim Analysis**
 *Steven Wai Ing¹, Michael Mannstadt², Lars Rejnmark³, István Takács⁴, Ivy Song⁵, Helen Shapiro⁵, Ping He⁵, Richard D Finkelstein⁵. ¹Division of Endocrinology, Diabetes and Metabolism, Ohio State University Wexner Medical Center, United States, ²Endocrine Unit, Massachusetts General Hospital and Harvard Medical School, United States, ³Department of Clinical Medicine, Aarhus University Hospital, Denmark, ⁴Department of Medicine, Faculty of Medicine, Semmelweis University, Hungary, ⁵Shire Human Genetic Therapies, Inc., Lexington, MA, USA, a member of the Takeda group of companies, United States
Disclosures: Steven Wai Ing, Shire, a member of Takeda group of companies, Grant/Research Support
- FRI-893** **Physical Function and Health-Related Quality of Life in Adults Treated with Asfotase Alfa for Pediatric-Onset Hypophosphatasia**
 *Lothar Seefried¹, Dominik Rak¹, Franca Genest¹, Ulrike von Hehn², Anna Petryk³. ¹Orthopaedic Clinic King-Ludwig-Haus, University of Würzburg, Germany, ²Medistat GmbH, Germany, ³Alexion Pharmaceuticals, Inc., United States
Disclosures: Lothar Seefried, Alexion Pharmaceuticals, Inc., Grant/Research Support, Alexion Pharmaceuticals, Inc., Consultant
- FRI-897** **Clinical and Biochemical Phenotypes of Adults with Monoallelic and Biallelic ENPP1 Mutations**
 *Anupam Kotwal¹, Alejandro Ferrer¹, Rajiv Kumar¹, Ravinder Singh¹, Vishakantha Murthy¹, Laura Schultz-Rogers¹, Brandon Lanpher¹, Eric Klee¹, Robert Wermers¹, Michael Zimmermann², Demetrios Braddock³. ¹Mayo Clinic, United States, ²Medical College of Wisconsin, United States, ³Yale University, United States
Disclosures: Anupam Kotwal, None
- FRI-898** **Hypophosphatemic Osteosclerosis Associated With Novel Homozygous Mutations Of DMP1 Encoding Dentin Matrix Protein 1 and SPP1 Encoding Osteopontin: The First Digenic SIBLING Protein Osteopathy**
 *Michael P. Whyte¹, Deborah J. Veis¹, S. Deepak Amalath², Suhas Alur², William H. McAlister³, Marc D. McKee⁴, Margaret Huskey⁵, Shenghui Duan⁵, Vinieth N. Bijanki⁶, Steven Mumm⁷. ¹Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children-St. Louis; Division of Bone and Mineral Diseases, Department of Internal Medicine, Washington University School of Medicine at Barnes-Jewish Hospital, United States, ²Department of Medicine, Jawaharlal Institute of Postgraduate Medical Education and Research, India, ³Mallinckrodt Institute of Radiology, Washington University School of Medicine at St. Louis Children's Hospital, United States, ⁴Faculty of Dentistry, and Department of Anatomy and Cell Biology, McGill University, Canada, ⁵Division of Bone and Mineral Diseases, Department of Internal Medicine, Washington University, United States, ⁶Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children-St. Louis; Division of Bone and Mineral Diseases, Department of Internal Medicine, Washington University School of Medicine at Barnes-Jewish Hospital, United States
Disclosures: Michael P. Whyte, None
- RARE BONE DISEASES - TRANSLATIONAL**
- FRI-916** **Multiple Modalities of Signaling by FOP Mutant BMP Receptor in the Developing Zebrafish**
 *Robyn Allen¹, Eileen Shore¹, Mary Mullins¹. ¹University of Pennsylvania School of Medicine, United States
Disclosures: Robyn Allen, None

- FRI-917** **MEKK2 Mediates Pathologic ERK Activation Downstream of NF1 in Osteoblasts In Vitro and In Vivo**
 *Seoyeon Bok¹, Dong Yeon Shin¹, Mark Eiseman¹, Ren Xu¹, Alisha Yallowitz¹, Na Li¹, Matthew B. Greenblatt¹, Jae-Hyuck Shim². ¹Department of Pathology and Laboratory Medicine, Weill Cornell Medicine, United States, ²Department of Medicine, University of Massachusetts Medical School, United States
Disclosures: Seoyeon Bok, None
- FRI-918** **Notch2 Antisense Oligonucleotides Ameliorate the Osteopenia of Hajdu Cheney Syndrome Mutants**
 *Ernesto Canalis¹, Jungeun Yu¹, Tamar Grossman², Michele Carrer³. ¹UConn Health, United States, ²Ionis Pharmaceuticals, Inc., United States, ³Ionis Pharmaceuticals, Inc., United States
Disclosures: Ernesto Canalis, None
- FRI-919** **New mouse model with Ifitm5 S42L connects types V and VI osteogenesis imperfecta**
 *Gali Guterman Ram¹, Joan C Marini¹, Ghazal Hedjazi², Stéphane Blouin², Paul Roschger², Klaus Klaushofer², Nadja Fratzl-Zelman², Chris Stephan³, Kenneth M Kozloff³. ¹Section on Heritable Disorders of Bone and Extracellular Matrix, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, United States, ²Ludwig Boltzmann Institute of Osteology, 1st Medical Department, Hanusch-Hospital, Austria, ³Departments of Orthopaedic Surgery and Biomedical Engineering, University of Michigan, United States
Disclosures: Gali Guterman Ram, None
- FRI-920** **Therapeutic Targeting of Autophagy in Osteogenesis Imperfecta**
 *Elena Makareeva¹, Shakib Omari¹, Anna M. Roberts-Pilgrim¹, Laura Gorrell¹, Ed Mertz¹, Sergey Leikin¹, Basma Khoury², Chris Stephan², Kenneth Kozloff². ¹National Institutes of Health, United States, ²University of Michigan, United States
Disclosures: Elena Makareeva, None
- FRI-925** **SIRT1 Promoter SNP rs932658 Associated with Bisphosphonates-related Osteonecrosis of the Jaw**
 *Guang Yang¹, Sonal Singh¹, Taimour Langaee¹, Jatinder Lamba², Yan Gong². ¹Department of Pharmacotherapy and Translational Research and Center for Pharmacogenomics and Precision Medicine, College of Pharmacy, University of Florida., United States, ²Department of Pharmacotherapy and Translational Research and Center for Pharmacogenomics and Precision Medicine, College of Pharmacy, University of Florida. UF Health Cancer Center, United States
Disclosures: Guang Yang, None
- FRI-926** **Heterozygous SH3BP2 Cherubism Mutation Exacerbates Alveolar Bone Loss in a Mouse Model for Periodontitis**
 *Tetsuya Yoshimoto¹, Yasuyoshi Ueki¹, Mizuho Kittaka¹, Collin Schlosser². ¹Department of Biomedical Sciences and Comprehensive Care, Indiana University School of Dentistry, United States, ²Department of Orthodontics and Dentofacial Orthopedics, University of Missouri-Kansas City, School of Dentistry, United States
Disclosures: Tetsuya Yoshimoto, None

SARCOPENIA, MUSCLE AND FALLS

- FRI-950** **The Role of Individual Components of Sarcopenia and Their Rate of Decline in Fracture Risk in Elderly Women and Men**
 *Dima Alajlouni¹, Tuan Nguyen¹, John Eisman¹, Jacqueline Center¹, Dana Blünc², Thach Tran². ¹Garvan Osteoporosis and Bone Biology, Garvan Institute of Medical research, Sydney, New South Wales, Australia; Faculty of Medicine, University of New South Wales (UNSW) Australia, Sydney, Australia, Australia, ²Garvan Osteoporosis and Bone Biology, Garvan Institute of Medical research, Sydney, New South Wales, Australia, Australia
Disclosures: Dima Alajlouni, None

- FRI-951 Higher Circulating Standardized 25(OH)D is Not Associated With Increased Falls Risk**
 *Neil Binkley¹, Christopher Sempos², Ramon Durazo-Arvizu³, Joan Lappe⁴. ¹University of Wisconsin Madison, United States, ²Vitamin D Standardization Program, United States, ³Loyola University Chicago, United States, ⁴Creighton University, United States
Disclosures: Neil Binkley, None
- FRI-954 One Leg Standing Time Predicts Fractures in Older Women Independent of Clinical Risk Factors and Bone Mineral Density**
 *Maria Falkdal¹, Anna Nilsson¹, Lisa Johansson¹, Daniel Sundh¹, Mattias Lorentzon¹. ¹Geriatric Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden
Disclosures: Maria Falkdal, None
- FRI-956 TRAF6 mediates impaired muscle regeneration induced by TNF α**
 *Xiangjiao Yi¹, Jinbo Li¹, Lianping Xing¹, Zhenqiang Yao², Brendan Boyce². ¹Pathology, United States, ²Pathology, United States
Disclosures: Xiangjiao Yi, None

POSTER SESSION I

12:30 pm - 2:30 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23.

ADULT METABOLIC BONE DISORDERS

- SAT-1** **Changes in Cortical Porosity and Bone Strength Through Four Years of rhPTH(1-84) Therapy in Hypoparathyroidism**
*Natalie Cusano¹, Mishaela Rubin², John Williams², Sanchita Agarwal², Rukshana Majeed², Beatriz Omeragic², John Bilezikian², Gaia Tabacco³, Yu-Kwang Donovan Tay⁴. ¹Lenox Hill Hospital, United States, ²Columbia University Medical Center, United States, ³University Campus Bio-Medico, Italy, ⁴Singapore General Hospital, Singapore
Disclosures: Natalie Cusano, Shire/Takeda, Consultant, Shire/Takeda, Speakers' Bureau
- SAT-2** **In vivo detection of vasculature and fat within cortical bone pores: a validation study**
*Brian Leahy¹, Barbara Garita¹, Po-Hung Wu¹, Gabrielle Joseph¹, Misung Han¹, Roland Krug¹, Thomas Link¹, Galatea Kazakia¹. ¹UCSF, United States
Disclosures: Brian Leahy, None
- SAT-3** **An Overview of the Etiology, Clinical Manifestations, Management Strategies, and Complications of Hypoparathyroidism from the Canadian National Hypoparathyroidism Registry**
*Yousef Alalawi¹, Hajar Abu Alrob¹, Haniah Shaikh², Manoela Braga², Zubin Punthakee², Rafik El Werfalli², J.E.M. Young², Aliya Khan², Adam Millar³, Muhammad Shrayyef³, Susan Teschke³, Heather Zariffah⁴, Iman M'Hiri⁴, Tayyab Khan⁵, Adam Waldbilling⁶.
¹McMaster University, Canada, ²McMaster University, Canada, ³University of Toronto, Canada, ⁴Bone Research and Education Centre, Canada, ⁵LCM, Canada, ⁶CHEO, Canada
Disclosures: Yousef Alalawi, None
- SAT-4** **Risk Factors for Vertebral Fracture in Primary Hyperparathyroidism**
*Minghao Liu¹, John Williams¹, Shonni Silverberg¹, Marcella Walker¹. ¹Columbia University Medical Center, Department of Medicine, Division of Endocrinology, United States
Disclosures: Minghao Liu, None
- SAT-5** **Clinical, Biochemical and Radiological Profile of Normocalcaemic Hyperparathyroidism: a Multicentric Cross-Sectional Evaluation**
*Anda Mihaela Naciu¹, Gaia Tabacco¹, Daria Maggi¹, Luca D'Onofrio¹, Silvia Briganti¹, Nicola Napoli¹, Paolo Pozzilli¹, Silvia Manfrini¹, Andrea Palermo¹, Stefania Falcone², Andrea Fabbri², Assunta Santonati³, Domenico Castellitto⁴, Alessandro Casini⁴, Roberto Cesareo⁴, Diana Lelli⁵, Claudio Pedone⁵. ¹Unit of Endocrinology, University Campus Bio-Medico, Italy, ²Unit of Endocrinology and Metabolic Diseases, CTO A. Alesini Hospital, University Tor Vergata, Italy, ³Department of Endocrinology, San Giovanni Addolorata Hospital, Italy, ⁴Thyroid and Metabolic Bone Diseases Center, Santa Maria Goretti Hospital, Italy, ⁵Unit of Geriatric, University Campus Bio-Medico, Italy
Disclosures: Anda Mihaela Naciu, None

SAT-6

The association between free and total 25(OH)D levels in 28 weeks pregnant women.

*Natsuko Sakurai¹, Yuko Sakamoto¹, Sung-Gon Kim¹, Hideaki Nakajima², Daiki Ogishima³, Shozo Matsuoka³, Yuka Honda⁴, Mitsuyoshi Suzuki⁵, Toshiaki Shimizu⁵, Akifumi Tokita⁶, Kazuo Kaneko⁷. ¹Department of Orthopaedics, Juntendo University Nerima Hospital, Japan, ²Center for Global Environmental Research, National Institute for Environmental Studies, Japan, ³Department of Obstetrics-gynecology, Juntendo University Nerima Hospital, Japan, ⁴Graduate School of Media and Governance, Keio University, Japan, ⁵Department of Pediatrics, Juntendo University Graduate School of Medicine, Japan, ⁶Clinic Bambini, Japan, ⁷Department of Medicine for Orthopaedics and Motor Organ, Juntendo University Graduate School of Medicine, Japan

Disclosures: Natsuko Sakurai, None

SAT-7

Is urinary calcium the only predictor of nephrolithiasis in patients with asymptomatic primary hyperparathyroidism?

*Federica Saponaro¹, Filomena Cetani², Laura Mazoni², Matteo Apicella², Marina Di Giulio², Francesco Carlucci², Elena Pardi², Simona Borsari², Claudio Marcocci², Marco Scalese³. ¹Department of Pathology, University of Pisa, Pisa, Italy, ²Department of Clinical and Experimental Medicine, University of Pisa, Italy, ³National Research Institute, Pisa, Italy

Disclosures: Federica Saponaro, None

SAT-8

Hypophosphatemic osteomalacia induced by long-term low-dose adefovir dipivoxil: Clinical characteristics of 140 cases

*Jiao Zhao¹, Zhe Wei¹, Zhen-lin Zhang¹. ¹Metabolic Bone Diseases and Genetic Research Unit, Department of Osteoporosis and Bone Diseases, Shanghai Jiao Tong University Affiliated Sixth People's Hospital, China

Disclosures: Jiao Zhao, None

BIOMECHANICS AND BONE QUALITY

SAT-23

A Randomized Single Switch-Over Trial of Teriparatide for Premenopausal Idiopathic Osteoporosis: High Resolution Peripheral Computed Tomography (HR-pQCT) Changes at 24M

*Sanchita Agarwal¹, Adi Cohen¹, Mafo Kamanda-Kosse¹, Mariana Bucovsky¹, Elizabeth Shane¹. ¹Division of Endocrinology, Department of Medicine, Columbia University, United States

Disclosures: Sanchita Agarwal, None

SAT-24

Removal of Advanced Glycation End-products In Vivo Rescues Bone Fragility

*Stacyann Bailey¹, Tessabella Magliochetti¹, Deepak Vashishth¹, Ewan McNay². ¹Rensselaer Polytechnic Institute, United States, ²University at Albany, United States

Disclosures: Stacyann Bailey, None

SAT-25

Bone microarchitecture and strength in women living with HIV: A cross-sectional HR-pQCT study

*Heather Macdonald¹, Claudie Berger², Neora Pick³, Evelyn Maan³, Helene Cote⁴, Melanie Murray⁵, Jerilynn Prior⁶. ¹Department of Family Practice, University of British Columbia, Canada, ²CaMos Methods Centre, McGill University, Canada, ³Oak Tree Clinic, BC Women's Hospital & Health Centre, Canada, ⁴Department of Pathology and Laboratory Medicine, University of British Columbia, Canada, ⁵Division of Infectious Diseases, Faculty of Medicine, University of British Columbia, Canada, ⁶Department of Medicine, University of British Columbia, Canada

Disclosures: Heather Macdonald, None

- SAT-26** **Pretreatment with Anti-Sclerostin Antibody has Lasting Osteogenic Effects on the Femur of Unloaded Male Rats**
 *Jon Elizondo¹, Scott Lenfest¹, Sandhya Sihra¹, Jennifer Kosniewski¹, Jeremy Black¹, Zachary Kohn¹, Jessica Brezicha², Susan Bloomfield³, Harry Hogan⁴. ¹Texas A&M University, Dept. of Mechanical Engineering, United States, ²Texas A&M University, Dept. of Biomedical Engineering, United States, ³Texas A&M University, Dept. of Health & Kinesiology, United States, ⁴Texas A&M University, Depts. of Mechanical Engineering & Biomedical Engineering, United States
Disclosures: Jon Elizondo, None
- SAT-27** **The Effect of Antiresorptive Drugs on Spinal Instrumentation in Patients with Osteoporosis**
 *Koji Ishikawa¹, Soji Tani¹, Koki Tsuchiya¹, Akira Matsuoka¹, Hiroshi Maruyama¹, Haruka Emori¹, Ryo Yamamura¹, Yusuke Dodo¹, Ryoji Usui¹, Tomoyuki Ozawa¹, Yusuke Oshita¹, Yoshifumi Kudo¹, Toshiyuki Shirahata¹, Takashi Nagai¹, Tomoaki Toyone¹, Katsunori Inagaki¹, Syunsuke Segawa². ¹Department of Orthopaedic Surgery, Showa University School of Medicine, Japan, ²Department of Orthopaedic Surgery, Showa University School of Medicine, Tokyo, Japan
Disclosures: Koji Ishikawa, None
- SAT-28** **Bone Quality and Turnover in HIV Patients with low BMD and Fractures**
 *Florence Lima¹, Madhumathi Rao¹, Amita Maibam¹, Harmut H Malluche¹. ¹University of Kentucky, United States
Disclosures: Florence Lima, None
- SAT-29** **ASBMR 2019 Annual Meeting Young Investigator Award**
Mineral deposition is required to repair diffuse damage in bone in vivo
 *Leila Mehraban Alvandi¹, Donna Chen¹, Robert J Majeska¹, Rinaldo Florencio-Silva², Zeynep Seref-Ferlengez³, Mitchell B. Schaffler⁴. ¹Department of Biomedical Engineering, City College of New York, New, United States, ²Federal University of São Paulo – Medical school, Brazil, ³Albert Einstein College of Medicine, Orthopedic Surgery, New York NY, United States, ⁴Department of Biomedical Engineering, City College of New York, New, United States
Disclosures: Leila Mehraban Alvandi, None
- SAT-30** **Material Properties of Cortical Bone Do Not Differ between Donors with and without Type 2 Diabetes**
 *Jeffrey Nyman¹, Sasidhar Uppuganti¹, Nora Ward², Mark Does². ¹Vanderbilt University Medical Center, United States, ²Vanderbilt University, United States
Disclosures: Jeffrey Nyman, ActiveLife Scientific, Inc., Other Financial or Material Support
- SAT-31** **Low intensity vibration enhances the effects of zoledronic acid on bone mass and strength**
 *Gabriel M. Pagnotti¹, Reid Wilson¹, Trupti Trivedi¹, Sutha K. John¹, Yun She¹, Sreemala Murthy¹, Laura E. Wright¹, Sukanya Suresh¹, William R. Thompson¹, Khalid S. Mohammad¹, Theresa A. Guise¹, Clinton T. Rubin². ¹Indiana University, United States, ²Stony Brook University, United States
Disclosures: Gabriel M. Pagnotti, None
- SAT-32** **Zoledronate and Raloxifene Combination Therapy Enhances Material Properties of Mouse Bone**
 *Katherine Powell¹, Cayla Skaggs¹, Alexis Pulliam¹, Joseph Wallace¹, Alycia Berman², Matthew Allen³. ¹Indiana University Purdue University Indianapolis, Department of Biomedical Engineering, United States, ²Purdue University, Weldon School of Biomedical Engineering, United States, ³Indiana University School of Medicine, Department of Anatomy and Cell Biology, United States
Disclosures: Katherine Powell, None

- SAT-33** **Transcriptional variation in FGFR4 associated with changes in trabecular architecture.**
 *Ellen Quillen¹, Donald Moravits², Robert Fajardo³, Karl Jepsen⁴, Todd Bredbenner⁵.
¹Wake Forest School of Medicine, United States, ²Southwest Research Institute, United States, ³University of the Incarnate Word School of Osteopathic Medicine, United States, ⁴University of Michigan Medical School, United States, ⁵University of Colorado Colorado Springs, United States
Disclosures: Ellen Quillen, None
- SAT-34** **Comparison of trabecular bone from human cervical, thoracic and lumbar spine using Micro - CT**
 *Guido Schröder¹, Benjamin Jabke¹, Marko Schulze², Olga Sahmel³, Heiner Martin³, Reimer Andresen⁴, Hans-Christof Schober⁵. ¹University of Rostock Medical faculty, Germany, ²University of Rostock Medical faculty Anatomical Institut, Germany, ³University of Rostock Medical faculty Institut for biomedical engineering, Germany, ⁴Westcoast Hospital Heide, Institut for Interventional Radiology, Germany, ⁵South Hospital Rostock, Dept. Internal Med., Germany
Disclosures: Guido Schröder, None
- SAT-35** **Quantitation of Citrate in Mineral and Organic Compartments of Bone**
 *Grazyna E. Sroga¹, Deepak Vashishth¹, Zehai Wang². ¹Rensselaer Polytechnic institute, United States, ²Rensselaer Polytechnic Institute, United States
Disclosures: Grazyna E. Sroga, None
- SAT-36** **MB-SWIFT MRI can Quantify Bone Mineral Density while Concurrently Characterizing Material-level and Biochemical Changes in Bone In Vivo**
 *Rachel Surowiec¹, Kenneth Kozloff¹, Sundaresh Ram², Craig Galban², Djaudat Idiyatullin³, Robert Goulet⁴. ¹Departments of Orthopaedic Surgery and Biomedical Eng., University of Michigan, United States, ²Department of Radiology, University of Michigan, United States, ³Department of Radiology, University of Minnesota, United States, ⁴Department of Orthopaedic Surgery, University of Michigan, United States
Disclosures: Rachel Surowiec, None
- SAT-37** **Non-obese Type 2 Diabetic Murine Model Exhibits Altered Matrix Quality and Material Properties**
 *Matthew Tice¹, Stacyann Bailey¹, Deepak Vashishth¹, Emily Gallagher². ¹Rensselaer Polytechnic Institute, United States, ²Mount Sinai School of Medicine, United States
Disclosures: Matthew Tice, NIH, Grant/Research Support
- SAT-38** **Collagen Fibril Plasticity is altered in Individuals with Type 2 Diabetes Mellitus and non-osteoporotic Bone Mineral Density**
 *Eva Maria Wölfel¹, Anna Kornelia Siebels¹, Liang-Yu Ma¹, Annika vom Scheidt¹, Felix Nikolai Schmidt¹, Michael Amling¹, Katharina Jähn¹, Björn Busse¹, Elizabeth Zimmermann², Birgit Wulf³, Herbert Mushumba³, Klaus Püschel³, Eric Schaible⁴.
¹University Medical Center Eppendorf, Dept. of Osteology and Biomechanics, Germany, ²University Medical Center Hamburg-Eppendorf, Department of Osteology and Biomechanics; Shriners Hospitals for Children Canada, Montreal, Canada, Germany, ³University Medical Center Eppendorf, Dept. of Forensic Medicine, Germany, ⁴Advanced Light Source, Lawrence Berkeley National Laboratory, United States
Disclosures: Eva Maria Wölfel, None
- SAT-39** **Alendronate and parathyroid hormone are effective therapies at decreasing bone loss and at enhancing fracture healing in paraplegic rats**
 *Ariane Zamarioli¹, Mariana Butezloff¹, Kelly Astolpho¹, Joao Ximenez¹, Jose Volpon¹.
¹Ribeirão Preto Medical School, Brazil
Disclosures: Ariane Zamarioli, None

BONE ACQUISITION AND PEDIATRIC BONE DISORDERS

- SAT-73** **Maternal pregnancy vitamin D supplementation is associated with greater offspring bone mineral density at 4 years: findings from the MAVIDOS trial**
 *Elizabeth Curtis¹, Rebecca Moon¹, Stefania D'Angelo¹, Sarah Crozier¹, Hazel Inskip¹, Keith Godfrey¹, Cyrus Cooper¹, Nicholas Harvey¹, Nicholas Bishop², Sujatha Gopal², Stephen Kennedy³, Aris Papageorgiou³, Robert Fraser⁴, Saurabh Gandhi⁴, Inez Schoenmakers⁵, Ann Prentice⁶, Kassim Javaid⁷, Richard Eastell⁸. ¹MRC Lifecourse Epidemiology Unit, University of Southampton, United Kingdom, ²Academic Unit of Child Health, Sheffield Children's Hospital, United Kingdom, ³Nuffield Department of Women's and Reproductive Health, John Radcliffe Hospital, University of Oxford, United Kingdom, ⁴Department of Obstetrics and Gynaecology, Sheffield Hospitals NHS Trust, University of Sheffield, United Kingdom, ⁵Department of Medicine, Faculty of Medicine and Health Sciences, University of East Anglia, United Kingdom, ⁶Nutrition and Bone Health, University of Cambridge, United Kingdom, ⁷NIHR Oxford Biomedical Research Centre, University of Oxford, United Kingdom, ⁸Academic Unit of Bone Metabolism, University of Sheffield, United Kingdom
Disclosures: Elizabeth Curtis, None
- SAT-74** **High Incidence of electrolyte abnormalities despite low first dose of Zoledronic acid**
 *Monica Grover¹, Laura Bachrach¹. ¹Stanford School of Medicine, United States
Disclosures: Monica Grover, None
- SAT-75** **Molecular Mechanisms for Pamidronate Rescue of Post-burn Muscle Loss in Children**
 *Fabrizio Pin¹, Lynda Bonewald¹, Andrea Bonetto², Gordon Klein³. ¹Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, ²Department of Surgery, Indiana University School of Medicine, United States, ³Department of Orthopaedic Surgery, University of Texas Medical Branch, United States
Disclosures: Fabrizio Pin, None
- SAT-76** **Vitamin D level of toddlers with "physiologic" genu varum is lower than that of control toddlers: 1:2 case-control study**
 *Yuko Sakamoto¹, Muneaki Ishijima², Kazuo Kaneko², Satoshi Nakano³, Mitsuyoshi Suzuki³, Lizu Liu⁴, Akifumi Tokita⁵, Sung-Gon Kim⁶, Masahiko Nozawa⁶, Toshiaki Shimizu⁷. ¹Dept. of Orthopedics, Juntendo Nerima Univ. Hosp., Japan, ²Department of Medicine for Orthopaedics and Motor Organ, Juntendo University Graduate School of Medicine, Japan, ³Department of Pediatrics, Juntendo University Graduate School of Medicine, Tokyo, Japan, Japan, ⁴Sportology Center, Juntendo University Graduate School of Medicine, Tokyo, Japan, Japan, ⁵Clinic Bambini, Japan, ⁶Department of Orthopaedics, Juntendo University Nerima Hospital, Japan, ⁷Department of Pediatrics, Juntendo University Graduate School of Medicine, Japan
Disclosures: Yuko Sakamoto, None

BONE INTERACTIONS WITH MUSCLE AND OTHER TISSUES

- SAT-84** **Silicon Oxynitride Coatings Enhance Bone Healing by Inducing Antioxidant Biomarkers in Mandibular Implants**
 *Neelam Ahuja¹, Henry Tran¹, Marco Broetto¹, Venu Varanasi¹, Kamal Awad², Pranesh Aswath², Lindsay Wilson³, Simon Young³. ¹Bone Muscle Research Center, CONHI, University of Texas at Arlington, United States, ²Department of Material Science and Engineering, University of Texas at Arlington, United States, ³Department of Oral & Maxillofacial Surgery, The University of Texas Health Science Center at Houston, United States
Disclosures: Neelam Ahuja, None
- SAT-85** **Mast Cell Deficiency Partially Mitigates Acute Bone Resorption Following Muscle Paralysis**
 *Ted Gross¹, Edith Gardiner¹, Leah Worton¹, Brandon Ausk¹, Steven Bain¹, Nicholas Shubin², Adrian Piliponsky². ¹University of Washington, United States, ²Seattle Children's Research Institute, United States
Disclosures: Ted Gross, None

- SAT-86** **WNT3a levels decline during aging and further decline in osteoporotic women- Implications for Bone-Muscle Crosstalk**
 *Jian Huang¹, Leticia Brotto¹, Marco Brotto¹, Janalee Isaacson², Lynda Bonewald³, Mark Johnson⁴, Robert Recker⁵, Joan Lappe⁵. ¹Bone-Muscle Research Center, College of Nursing and Health Innovation, University of Texas at Arlington, United States, ²School of Nursing & Human Physiology, Gonzaga University, United States, ³Indiana Center for Musculoskeletal Health, School of Medicine, Indiana University, United States, ⁴Department of Oral and Craniofacial Sciences, School of Dentistry, University of Missouri-Kansas City, United States, ⁵School of Medicine, Osteoporosis Research Center, Creighton University, United States
Disclosures: Jian Huang, None
- SAT-87** **Low Protein Diet Induces Bone Loss and Renal Complications in Male Mice**
 *Debra L. Irsik¹, Ke-hong Ding¹, Jianrui Xu¹, Baolin Kang¹, Qing Zhong¹, Meghan E. McGee-Lawrence¹, Wendy B Bollag¹, Carlos M Isaacs¹. ¹Augusta University, United States
Disclosures: Debra L. Irsik, None
- SAT-88** **RIPK1 Inhibition Improves Experimental Autoimmune Arthritis Via Suppression Of Osteoclastogenesis**
 *KyungAh Jung¹, Mi-La Cho¹, Jooyeon Jhun¹, Jaeyoon Ryu¹, Seung Hoon Lee¹. ¹The Rheumatism Research Center, Catholic Research Institute of Medical Science, The Catholic University of Korea, Seoul, South Korea, Republic of Korea
Disclosures: KyungAh Jung, None
- SAT-89** **Regulation of megakaryocytes on bone metabolism in a paracrine manner**
 *Hanjun Kim¹, Jung-Min Koh², Beom-Jun Kim², Seung Hun Lee², Young-Sun Lee³. ¹Asan Institute for Life Sciences, Republic of Korea, ²Division of Endocrinology and Metabolism, Asan Medical Center, University of Ulsan College of Medicine, Republic of Korea, ³Asan Institute for Life Sciences, Seoul, South Korea, Republic of Korea
Disclosures: Hanjun Kim, None
- SAT-90** **Biglycan Regulates Inflammation and Bone Formation During Fracture Healing**
 *Reut Shainer¹, Vardit Kram², Tina M. Kilts², Li Li², Marian F. Young², Andrew Doyle³. ¹Molecular Biology of Bones and Teeth Section, NIDCR, NIH, United States, ²Molecular Biology of Bones and Teeth Section, NIDCR, NIH, United States, ³Cell Biology Section, NIDCR, NIH, United States
Disclosures: Reut Shainer, None
- SAT-91** **Osteocalcin ameliorates the cognitive dysfunctions in APP/PS1 mice**
 *Chang Shan¹, Yan-fang Hou¹, Shu-min Wang¹, Jian-min Liu¹, Yan-ling Gong², Qian-qian Zhuang², Sheng-tian Li². ¹Shanghai Jiao-tong University School of Medicine, China, ²Shanghai Jiao-tong University, China
Disclosures: Chang Shan, None
- SAT-92** **ASBMR 2019 Annual Meeting Young Investigator Award The Muscle Metabolite, β -aminoisobutyric acid, L-BAIBA, Enhances the Effects of Suboptimal Mechanical Loading on New Bone Formation.**
 *Alberto Smargiassi¹, Alexander Robling¹, Lynda Bonewald¹, Marco Brotto². ¹IUPUI, United States, ²University of Texas at Arlington, United States
Disclosures: Alberto Smargiassi, None
- SAT-93** **Distinctive role of muscle-specific ubiquitin ligases in bone microarchitecture**
 *Vidyani Suryadevara¹, Monte Willis¹. ¹IUPUI, United States
Disclosures: Vidyani Suryadevara, None
- SAT-95** **Fibroblast growth factor 23 induces ventricular arrhythmias and prolongs QTc interval in mice**
 *Julian Vallejo¹, Derek Wang¹, Jonah Graves¹, Michael Wacker¹. ¹Department of Biomedical Sciences, School of Medicine, University of Missouri-Kansas City, United States
Disclosures: Julian Vallejo, None

- SAT-96** **Impaired PTH-stimulated periosteal proliferation, Wnt activity and fracture healing in Fgf2 knockout mice**
 *Liping Xiao¹, Marja Hurley¹. ¹UConn Health, United States
Disclosures: Liping Xiao, None
- SAT-97** **Tissue clearing of both hard and soft tissue organs with the PEGASOS method**
 *Dian Jing¹, Hu Zhao¹. ¹Texas A&M University, United States
Disclosures: Dian Jing, None

BONE MARROW MICROENVIRONMENT AND NICHES

- SAT-124** **Sclerostin antibody normalizes decreased trabecular bone and increased bone marrow adipose tissue caused by whole-body irradiation in mice**
 *Samantha Costa¹, Heather Fairfield¹, Mariah Farrell¹, Connor Murphy¹, Ashley Soucy¹, Michaela Reagan¹, Gill Holdsworth². ¹Maine Medical Center Research Institute, United States, ²UCB Pharma, United Kingdom
Disclosures: Samantha Costa, None
- SAT-125** **Anemia in elderly men predicts hip fracture and nonvertebral osteoporotic fractures; The MrOS Sweden Study**
 *Hallgerdur Kristjansdottir¹, Dan Mellström², Liesbeth Vandenput², Claes Ohlsson², Peter Johansson³, Catharina Lewerin³, Magnus Karlsson⁴, Hans Herlitz⁵, Mattias Lorentzon⁶. ¹Department of Hematology and Coagulation, Sahlgrenska University Hospital, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg Sweden, Sweden, ²Center for Bone and Arthritis Research at the Sahlgrenska Academy (CBAR), Institute of Medicine, University of Gothenburg, Gothenburg, Sweden, Sweden, ³Department of Hematology and Coagulation, Sahlgrenska University Hospital, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, Sweden, ⁴Clinical and Molecular Osteoporosis Research Unit, Department of Clinical Sciences and Orthopedics, Lund University, Malmö, Sweden, Sweden, ⁵Department of Molecular and Clinical Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, Sweden, ⁶Dept of Geriatric Medicine, Internal Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, Sweden
Disclosures: Hallgerdur Kristjansdottir, None
- SAT-126** **Metabolic crosstalk in the bone marrow niche drives leukemia chemoresistance**
 *Nick van Gastel¹, Amir Schajnovitz¹, Azeem Sharda¹, Konstantinos Kokkalis¹, Ninib Baryawno¹, Catherine Rhee¹, Toshihiko Oki¹, Eliane Grace¹, David Scadden¹, Jessica Spinelli², Marcia Haigis², Charles Vidoudez³, Sunia Trauger³. ¹Department of Stem Cell and Regenerative Biology, Harvard Stem Cell Institute, Harvard University; Center for Regenerative Medicine, Massachusetts General Hospital, United States, ²Department of Cell Biology, Harvard Medical School, United States, ³FAS Small Molecule Mass Spectrometry Facility, Harvard University, United States
Disclosures: Nick van Gastel, None
- SAT-127** **Curved microstructures enhance osteogenesis of mesenchymal stem cells**
 *Qi Zhang¹, Yunfeng Lin¹. ¹Sichuan University, China
Disclosures: Qi Zhang, None

BONE TUMORS AND METASTASIS

- SAT-135** **PREX1 drives spontaneous bone metastasis of ER+ breast cancer cells**
 *Miranda E. Clements¹, Rachelle W. Johnson². ¹Vanderbilt University, United States, ²Vanderbilt University Medical Center, United States
Disclosures: Miranda E. Clements, None

- SAT-136** **TBK1/IKK ϵ inhibitor Amlexanox blocks Multiple Myeloma cell growth in vitro and in vivo**
 *Quanhong Sun¹, Juraj Adamik¹, Peng Zhang¹, Konstantinos Lontos¹, Deborah L. Galson¹, Valentina Marchica², Nicola Giuliani², Rebecca Silbermann³, G.David Roodman⁴, Lea Nyiranshuti⁵, Joseph Latoche⁵, Carolyn J. Anderson⁵, Konstantinos Verdelis⁶. ¹Department of Medicine, Hem-Onc Division, UPMC Hillman Cancer Center, University of Pittsburgh, United States, ²Myeloma Unit, Department of Clinical and Experimental Medicine, University of Parma, Italy, Italy, ³Department of Medicine, Hematology-Oncology Division, Indiana University, Indianapolis, IN, USA, United States, ⁴Department of Medicine, Hem-Onc Division, Indiana University, Indianapolis, IN; ⁵Veterans Administration Medical Center, Indianapolis, IN, USA, United States, ⁶Department of Medicine, Cardiology Division, University of Pittsburgh, United States, ⁶Department of Oral Biology, The Center for Craniofacial Regeneration, McGowan Institute for Regenerative Medicine, University of Pittsburgh, United States
Disclosures: Quanhong Sun, None
- SAT-137** **HER2 positive breast cancer bone metastasis model for studying efficacy of novel therapies**
 *Tiina E Kähkönen¹, Mari I Suominen¹, Jenni HE Mäki-Jouppila¹, Jussi M Hallee¹, Jenni Bernoulli¹, Derek Grant². ¹Pharmatest Services, Finland, ²Bayer AS, Norway
Disclosures: Tiina E Kähkönen, None
- SAT-138** **ASBMR 2019 Annual Meeting Young Investigator Award**
Circulating osteocalcin-positive cells predict the progression of breast cancer bone metastasis
 *Kyoung Jin Lee¹, Serk In Park¹, Hyun Jin Sun², Kyung-Hun Lee², Tae Young Kim², Seock-Ah Im², Sun Wook Cho². ¹Department of Biochemistry and Molecular Biology, Korea University College of Medicine, Republic of Korea, ²Department of Internal Medicine, Seoul National University Hospital, Republic of Korea
Disclosures: Kyoung Jin Lee, None
- SAT-139** **PARP1 interacts with ezrin contributing to metastasis in osteosarcoma**
 *Fangfei Li¹, Xiaoqiu Wu¹, Xuekun Fu¹, Aiping Lu¹, Ge Zhang¹, Natalie Joan Lim². ¹Institute for Advancing Translational Medicine in Bone & Joint Diseases, Hong Kong Baptist University, Hong Kong, ²Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Hong Kong
Disclosures: Fangfei Li, None
- SAT-140** **Efferocytosis of Apoptotic Prostate Cancer Cells Induces the Immune Checkpoint Receptor TIM-3 in Bone Metastatic Macrophages**
 *Veronica Mendoza-Reinoso¹, Rylee Kim¹, John Rubin¹, Laurie McCauley¹, Herman Roca¹. ¹School of Dentistry, University of Michigan, United States
Disclosures: Veronica Mendoza-Reinoso, None
- SAT-141** **The Role of Integrin $\alpha 2 \beta 1$ in Breast Cancer Metastasis to Bone**
 *Milene Moritz¹, Heloisa de Araujo¹, Alyssa Merkel², Julie Rhoades (Sterling)², Ean Feldman³. ¹Federal University of Sao Carlos, Brazil, ²Vanderbilt University Medical Center, United States, ³Vanderbilt University, United States
Disclosures: Milene Moritz, None
- SAT-142** **Activation of Osteoblast Parathyroid Hormone 1 Receptor (PTH1R) Mobilizes Monocytic Myeloid-Derived Suppressor Cells (MDSC) from the Bone Marrow Tumor Hosts**
 *Serk In Park¹, Kyoung Jin Lee¹, Eun Jung Lee¹, Bo-Yeon Seo¹, Seung Pil Jung², Sun Wook Cho³. ¹Department of Biochemistry and Molecular Biology, Korea University College of Medicine, Republic of Korea, ²Department of Surgery, Korea University College of Medicine, Republic of Korea, ³Department of Internal Medicine, Seoul National University Hospital, Republic of Korea
Disclosures: Serk In Park, None

- SAT-143** **The role of the SCF/c-kit pathway in cancer-induced bone pain**
 *Sun Park¹, Matthew Eber¹, Shunsuke Tsuzuki¹, Rebecca Cain¹, Brooke Widner¹, Yusuke Shiozawa¹, Yuko Kamata², Takahiro Kimura², Fang-Chi Hsu³, Christopher Peters⁴. ¹Wake Forest University Health Sciences, United States, ²The Jikei University School of Medicine, Japan, ³Wake Forest University Health Sciences, United States, ⁴Wake Forest University Health Sciences, United States
Disclosures: Sun Park, None
- SAT-144** **Breast Cancer Paracrine Signaling interferes with Osteocyte Mechanosensitivity in 3D**
 *Blayne Sarazin¹, Maureen Lynch¹, Boyuan Liu². ¹University of Colorado Boulder, United States, ²University of Massachusetts Amherst, United States
Disclosures: Blayne Sarazin, None
- SAT-145** **Parathyroid Hormone Receptor Signaling Mediates Breast Cancer Metastasis to Bone in Mice**
 *Srilatha Swami¹, Hui Zhu¹, Joy Y. Wu¹. ¹Stanford University, United States
Disclosures: Srilatha Swami, None
- SAT-146** **A progressive auto-amplification loop in TAK1 expression and activation in myeloma cells**
 *Jumpei Teramachi¹, So Shimizu¹, Hirofumi Tenshin¹, Ariunzaya Bat-Erdene¹, Masahiro Hiasa¹, Asuka Oda¹, Takeshi Harada¹, Mohannad Ashtar¹, Kotaro Tanimoto¹, Itsuro Endo¹, Toshio Matsumoto¹, Eiji Tanaka¹, Masahiro Abe¹. ¹Tokushima University, Japan
Disclosures: Jumpei Teramachi, None
- SAT-147** **HIF Signaling Drives Spontaneous Dissemination of Breast Cancer Cells to Bone**
 *Vera Todd¹, Lawrence Vecchi², Rachele Johnson². ¹Vanderbilt University, United States, ²Vanderbilt University Medical Center, United States
Disclosures: Vera Todd, None

CHONDROCYTES

- SAT-174** **DDRKG1 is required for the proper chondrogenesis and the regulation of osteochondroprogenitors**
 *Yangjin Bae¹, Monika Weisz-Hubshman¹, Adetutu Egunsola¹, Ming-Ming Jiang¹, Brendan Lee¹. ¹Baylor College of Medicine, United States
Disclosures: Yangjin Bae, None
- SAT-175** **ASBMR 2019 Fund for Research and Education Emerging Country Young Investigator Award**
Pinch regulates chondrogenesis by control of TGF- β 1 signaling and expression of Sox9 and Runx2 in chondrocytes
 *Yiming Lei¹, Huiling Cao¹, Pengyu Li¹, Xin Liu¹, Qinnan Yan¹, Simin Lin¹, Liting Ma¹, Yuxi Guo¹, Yumei Lai², Yiran Zhao³, Wei Yang³, Yishu Wang³, Ruxuan Li³, Guozhi Xiao³. ¹Guangdong Provincial Key Laboratory of Cell Microenvironment and Disease Research, Shenzhen Key Laboratory of Cell Microenvironment, and Department of Biology, Southern University of Science and Technology, China, ²Department of Orthopedic Surgery, Rush University Medical Center, United States, ³Guangdong Provincial Key Laboratory of Cell Microenvironment and Disease Research, Shenzhen Key Laboratory of Cell Microenvironment, and Department of Biology, Southern University of Science and Technology, China
Disclosures: Yiming Lei, None
- SAT-176** **Disruption of aldehyde dehydrogenase 2 gene accelerates articular cartilage degeneration in osteoarthritis induced by mechanical loading in mice**
 *Yasuaki Okada¹, Kenji Kosugi¹, Yoshiaki Yamanaka², Kayoko Ookuma², Takafumi Tajima², Manabu Tukamoto², Kunitaka Menuki², Akinori Sakai². ¹Department of Orthopaedic Surgery, University of Occupational and Environmental Health Japan., Japan, ²Department of Orthopaedic Surgery, University of Occupational and Environmental Health Japan, Japan
Disclosures: Yasuaki Okada, None

- SAT-177** **Healing promotion effects of basic fibroblast growth factor (bFGF) in cartilage repair by synovial mesenchymal stem cell (MSC)**
 *Gensuke Okamura¹. ¹Osaka University Graduate School of Medicine, Japan
Disclosures: Gensuke Okamura, None
- SAT-178** **Growth plate borderline chondrocytes behave as transient mesenchymal precursor cells**
 *Koji Mizuhashi¹, Noriaki Ono¹. ¹University of Michigan School of Dentistry, United States
Disclosures: Koji Mizuhashi, None
- SAT-179** **Changes in 3D Genome Architecture During Chondrocyte Differentiation in the Pathogenesis of Human Chondrodysplasias**
 *I-Wen Song¹, Ivan Bochkov¹, Yangjin Bae¹, Erez Aiden¹, Brendan Lee¹. ¹Molecular and Human Genetics, Baylor College of Medicine, United States
Disclosures: I-Wen Song, None
- SAT-180** **TGF- β /Alk5 signaling regulates the senescence of articular cartilage superficial cells and preventing osteoarthritis initiation**
 *qiaoyan tan¹, Quan Wang¹, Yangli Xie¹, lin chen¹. ¹Department of Rehabilitation Medicine, Center of Bone Metabolism and Repair, State Key Laboratory of Trauma, Burns and Combined Injury, Trauma Center, Research Institute of Surgery, Daping Hospital, Third Military Medical University, China
Disclosures: qiaoyan tan, None
- SAT-181** **Runx1 Mediates Articular Cartilage Repair in Osteoarthritis through Upregulating Yap and Downregulating Wnt/ β -catenin Signaling Pathway**
 *Yan Zhang¹, Yun Lu¹, Tao Zuo¹, Guochun Zhu¹, Jinjin Wu¹, Wei Chen¹, Yi-Ping Li¹.
¹Department of Pathology, University of Alabama at Birmingham, SHEL 810, 1825 University Blvd, Birmingham AL 35294-2182, USA, United States
Disclosures: Yan Zhang, None
- SAT-182** **Expression profiling and functional analysis of candidate Col10a1 regulators identified by the transcription factor affinity prediction (TRAP) program**
 *Qiping Zheng¹, Longwei Qiao¹, Ting Zhu¹, Huiqin Bian¹, Yuting Liang¹, Jinnan Chen¹, Qian Wang¹, Fangzhou Chen¹, Junxia Gu¹, Yaojuan Lu², Lichun Sun². ¹Jiangsu University, China, ²Shenzhen Academy of Peptide Targeting Technology at Pingshan, China
Disclosures: Qiping Zheng, None

CLINICAL CASE REPORTS

- SAT-199** **Hypophosphatasia treatment with recombinant human TNSALP in an 18 year old patient**
 *Zhanna Belaya¹, Natalia Kalinchenko¹, Tatiana Grebennikova¹, Anatoliy Tiulpakov¹, Galina Melnichenko¹, Olga Golounina². ¹The National Research Centre for Endocrinology, Russian Federation, ²I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University), Russian Federation
Disclosures: Zhanna Belaya, None
- SAT-200** **Recovery of adefovir-induced osteomalacia in chronic hepatitis B patient**
 *Kyung Seok Oh¹, Hyun Uk Moon², Yong Jun Choi², Yoon-Sok Chung². ¹Ajou University Hospital, Republic of Korea, ²Ajou University School of Medicine, Republic of Korea
Disclosures: Kyung Seok Oh, None
- SAT-201** **Bilateral Atypical Femoral Fractures Due To A Long-Term Bisphosphonate Based Therapy**
 *Salomón Jasqui-Romano¹, Salomón Jasqui-Remba¹, Ariel Jasqui-Bucay², Alan Jasqui-Bucay³. ¹Hospital Ángeles Lomas, Mexico, ²Universidad Anáhuac, Mexico, ³Universidad Anáhuac, Mexico
Disclosures: Salomón Jasqui-Romano, None

- SAT-202** **A case of adult hypophosphatasia with prominent periarticular calcification**
 *Hajime Kato¹, Minae Koga¹, Nobuaki Ito¹. ¹Division of Nephrology and Endocrinology, The University of Tokyo, Japan
Disclosures: Hajime Kato, None
- SAT-203** **Legg-Calve-Perthes Disease in an 8-year old girl with Acrodysostosis 1 Treated with Growth Hormone.**
 *Whei Ying Lim¹, Nancy Dunbar¹, Emily Germain-Lee¹. ¹Connecticut Children's Medical Center, United States
Disclosures: Whei Ying Lim, None
- SAT-204** **First Report of Burosumab (Anti-FGF23 Monoclonal Antibody) for Rickets Complicating HRAS-Associated Cutaneous Skeletal Hypophosphatemia Syndrome**
 *Pamela Smith¹, Susan Bayliss², Marwan Shinawi², William McAlister², Ana Maria Arbelaez², Gary Gottesman³, Valerie Wollberg³, Michael Whyte³, Jeffrey Sugarman⁴.
¹University of Arizona College of Medicine - Phoenix, United States, ²Washington University School of Medicine in St. Louis, United States, ³Shriners Hospitals for Children - St. Louis, United States, ⁴University of California - San Francisco, United States
Disclosures: Pamela Smith, None
- SAT-205** **Bisphosphonate-Associated Osteonecrosis Of Jaw (BONJ) Healed With Teriparatide In A Female With Skeletal Metastasis From Breast Cancer (Treated With Radiation Therapy And Zolendronic Acid)**
 *Irinel Stanciu¹, Paul Miller². ¹Colorado Center for Bone Research at Panorama Orthopedics and Spine Center, United States, ²Colorado Center for Bone Research at Panorama Orthopedics and Spine Surgery Center, United States
Disclosures: Irinel Stanciu, None
- SAT-206** **Dried Plum Consumption Improves Bone Mineral Density in Osteopenic Postmenopausal Woman**
 *Nicole C.A. Strock¹, Kristen J. Koltun¹, Mary Jane De Souza¹. ¹Penn State University, United States
Disclosures: Nicole C.A. Strock, None
- SAT-208** **A Unique Cause of Hypercalcemia**
 *Jian Zhang¹, Deborah Sellmeyer¹. ¹Stanford University School of Medicine, United States
Disclosures: Jian Zhang, None

ENERGY METABOLISM, BONE, MUSCLE AND FAT

- SAT-219** **Housing temperature influences bone and brown adipose tissue side effects of atypical antipsychotic drugs in female mice**
 *Audrie Langlais¹, Katherine J. Motyl¹, Roni F. Kunst², Karen Houseknecht³. ¹Maine Medical Center Research Institute, United States, ²Maine Medical Center Research Institute, United States, ³University of New England, United States
Disclosures: Audrie Langlais, None
- SAT-220** **Connexin43 Favors Body Adiposity and Glucose Tolerance in Mice**
 *Seung-Yon Lee¹, Manuela Fortunato¹, Marcus Watkins¹, Francesca Fontana¹, Roberto Civitelli¹. ¹Divisions of Bone and Mineral Diseases, Department of Medicine; Musculoskeletal Research Center, Washington University School of Medicine, United States
Disclosures: Seung-Yon Lee, None
- SAT-221** **Bone Turnover Is Not Acutely Affected by Circulating Insulin Levels In Adults with Type 1 Diabetes: Findings from Hyperinsulinemic Euglycemic Clamps**
 *Viral Shah¹, Janet Snell-Bergeon¹, Timothy Vigers², Laura Pyle², Vanessa Sherk³, Michael Rickels⁴, Kellie Miller⁵, Kristen Nadeau⁶. ¹Barbara Davis Center for Diabetes, University of Colorado, United States, ²Department of Biostatistics, University of Colorado, United States, ³University of Colorado, United States, ⁴University of Pennsylvania Perelman School of Medicine, United States, ⁵Jaeb Center for Health Research, United States, ⁶Professor of Pediatric Endocrinology, University of Colorado, United States
Disclosures: Viral Shah, None

- SAT-222 Inhibition of the Mitochondrial Permeability Transition via Cyclophilin D Knock-Out Stimulates Osteoprogenitors and Accelerates Bone Fracture Repair**
 *Brianna Shares¹, Roman Eliseev¹. ¹University of Rochester, United States
Disclosures: Brianna Shares, None
- SAT-223 Dysregulated Adiponectin Signalling via AdipoR1 Deletion Leads to Bone Loss and Increased Marrow Adiposity In Vivo Through Distinct Local and Systemic Mechanisms and in Contrast to Epidemiological Evidence**
 *Aneka Sowman¹, Sam Z. Olechnowicz¹, Stefan Kluzek¹, Nigel K. Arden¹, James R. Edwards¹. ¹University of Oxford, United Kingdom
Disclosures: Aneka Sowman, None
- SAT-224 Divergent effects of peripheral and global depletion of Neuropeptide Y to the skeleton**
 *Natalie Wee¹, Benjamin Sinder¹, Ivo Kalajzic¹. ¹Department of Reconstructive Sciences, UConn Health, United States
Disclosures: Natalie Wee, None

GENOMICS, TRANSCRIPTOMICS, PROTEOMICS AND METABOLOMICS OF MUSCULOSKELETAL DISEASE

- SAT-235 Genome-wide association study on vitamin D levels in 423,722 White British individuals from UK Biobank reveals 48 novel vitamin D-related loci.**
 *Despoina Manousaki¹, Vince Forgetta¹, Brent Richards¹, Ruth Mitchell², Simon Haworth², Tom Dudding³, Nicolas Timpson⁴. ¹Lady Davis Institute for Medical Research, McGill University, Canada, ²MRC Integrative Epidemiology Unit, University of Bristol, United Kingdom, ³MRC Integrative Epidemiology Unit, United Kingdom, ⁴MRC Integrative Epidemiology Unit, University of Bristol, United Kingdom
Disclosures: Despoina Manousaki, None
- SAT-236 Identification of Genetic Variants for Peak Bone Mineral Content in Young Adult Women**
 *Jai Prakash¹, Fiona E McGuigan¹, Holger Luthman¹, Kristina E Akesson¹. ¹Lund University, Sweden
Disclosures: Jai Prakash, None
- SAT-237 Leveraging Unconfounded Genetic Risk Scores to Stratify Fracture Risk by Age at Onset**
 *Carolina Medina-Gomez¹, Katerina Trajanoska¹, M. Carola Zillikens¹, Andre G. Uitterlinden¹, Fernando Rivadeneira¹, Chun Chieh Fan², Anders M. Dale², Tyler M. Seibert², Ole A. Andreassen³. ¹Department of Internal Medicine, Erasmus University Medical Centre, Netherlands, ²Center for Multimodal Imaging and Genetics, University of California San Diego, United States, ³NORMENT, KG Jebsen Centre, Institute of Clinical Medicine, University of Oslo, Norway
Disclosures: Carolina Medina-Gomez, None
- SAT-238 Lipidomic and Metabolomic Profiles in Women with Low and High Bone Mineral Density: Searching for Early Serum Metabolic Biomarkers for Osteoporosis Risk**
 *Chenglin Mo¹, Zhiying Wang¹, Marco Brotto¹, Kuan-Jui Su², Hongwen Deng², Lynda Bonewald³. ¹Bone-Muscle Research Center, College of Nursing and Health Innovation, the University of Texas-Arlington, United States, ²Tulane Center of Bioinformatics and Genomics, Department of Global Biostatistics and Data Science, Tulane University, United States, ³Musculoskeletal Research Center, Indiana Medical School, Indiana University, United States
Disclosures: Chenglin Mo, None
- SAT-239 CRISPR-Cas9 mediated genome editing confirms EPDR1 as an effector gene at the BMD GWAS-implicated 'STARD3NL' locus**
 *James Pippin¹, Alessandra Chesi¹, Chun Su¹, Kenya Hodge¹, Mathew Johnson¹, Andrew Wells¹, Struan Grant¹, Yadav Wagley², Kurt Hankenson². ¹Children's Hospital of Philadelphia, United States, ²University of Michigan Medical School, United States
Disclosures: James Pippin, None

- SAT-240** **Genome-wide association meta-analysis identifies six loci for osteocalcin levels**
 *Yi-Hsiang Hsu¹, David Karasik¹, Douglas P. Kiel¹, Alexander Teumer², Katerina Trajanoska³, Fernando Rivadeneira³, On Behalf of GEFOS and CHARGE Consortia⁴.
¹Hinda and Arthur Marcus Institute for Aging Research, Hebrew SeniorLife, United States, ²Institute of Community Medicine, University of Greifswald, Germany, ³Department of Internal Medicine, Erasmus MC University, Netherlands, ⁴Consortia, Netherlands
Disclosures: Yi-Hsiang Hsu, None
- SAT-241** **Adaptations of bone to exercise training in Nrf2KO rats are sex-specific**
 *John Wahl¹, Hyerim Park², Mina-Michael Barsoum², Alexis Restrepo², Isabella Dewell², Jake Wahl², Joshua Maraj², William Peterson², Emily Reid-Foley², Kelsey Ballehr², Kristin Bedwell², Steven Medarev², Kaley Schartz², Dylan Sadowsky², Michael Delp², Judy Muller-Delp², Aron Geurts³. ¹Florida State University, United States, ²Florida State University, United States, ³Medical College of Wisconsin, United States
Disclosures: John Wahl, None
- SAT-242** **Prioritize Functional Variants in TBX15 Gene Associated with Osteoporosis and Obesity by Tissue-specific Epigenomic and Transcription Factor Binding Annotation**
 *Xiao Zhang¹, Hui Shen¹, Fangtang Yu¹, Hong-Wen Deng¹, Melanie Ehrlich¹. ¹Tulane University, United States
Disclosures: Xiao Zhang, None

HORMONAL REGULATORS

- SAT-257** **Osteocyte Sirt6 has crucial roles in bone and phosphate metabolism through senescence- dependent and -independent manner.**
 *Aobulikasimu Aikebaier¹, Yoshinori Asou¹, Hiroki Ochi¹, Piao Jinying¹, Shingo Sato¹, Kunikazu Tsuji¹, Atsushi Okawa¹. ¹Tokyo Medical and Dental University, Japan
Disclosures: Aobulikasimu Aikebaier, None
- SAT-258** **C-FGF23 peptide protects against severe hypoferrremia during acute inflammation**
 *Guillaume Courbon¹, Vikas Chonira¹, Maralee Capella¹, Samantha Neuburg¹, Xueyan Wang¹, Aline Martin¹, Valentin David¹. ¹Division of Nephrology and Hypertension and Center for Translational Metabolism and Health, Northwestern University, United States
Disclosures: Guillaume Courbon, None
- SAT-259** **Repetitive Mild Traumatic Brain Injury Impairs Fracture Healing in Mice**
 *Chandrasekhar Kesavan¹, Charles Rundle¹, Subburaman Mohan¹. ¹VA Loma Linda Healthcare System, United States
Disclosures: Chandrasekhar Kesavan, None
- SAT-260** **Effects of a low dose 17β-HSD2 inhibitor treatment on osteoporosis based on an animal rat model**
 *Sebastian T. Müller¹, Kristiana Schüßler¹, Oliver Zierau¹, Günter Vollmer¹, Ahmed Merabet², Chris J. van Koppen², Sandrine Marchais-Oberwinkler³, Rolf W. Hartmann⁴.
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Disclosures: Sebastian T. Müller, None

- SAT-262 Vitamin D threshold $\geq 40\text{ng/mL}$ prevents arthralgia in aromatase inhibitors users: B-ABLE cohort study**
 *Marta Pineda-Moncusí¹, Natalia Garcia-Giralt¹, Jaime Rodriguez-Morera², Isabel Campodarve², Albora Rial², Maria Lourdes Cos², Adolfo Diez-Perez³, Xavier Nogués³, Ignasi Tusquets⁴, Sonia Servitja⁴. ¹IMIM (Hospital del Mar Research Institute), Centro de Investigación Biomédica en Red de Fragilidad y Envejecimiento Saludable (CIBERFES), Spain, ²Internal Medicine Department, Hospital del Mar, Universitat Autònoma de Barcelona, Spain, ³IMIM (Hospital del Mar Research Institute), Centro de Investigación Biomédica en Red de Fragilidad y Envejecimiento Saludable (CIBERFES), Internal Medicine Department, Hospital del Mar, Universitat Autònoma de Barcelona, Spain, ⁴Cancer Research Program, IMIM (Hospital del Mar Research Institute), Spain
Disclosures: Marta Pineda-Moncusí, None
- SAT-263 CXCL12 Deletion in Osteoprogenitors Causes a Dramatic, Albeit Balanced, Increase in the Rate of Bone Remodeling and Attenuates the Loss of Cortical Bone Mass Caused by Estrogen Deficiency in Mice**
 * Filipa Ponte¹, Warren Aaron¹, Ha-neui Kim¹, Srividhya Iyer¹, Li Han¹, Maria Almeida¹, Manolagas Stavros¹. ¹UAMS, United States
Disclosures: Filipa Ponte, None
- SAT-264 Fetal FGF23 is required only to defend against hyperphosphatemia induced by maternal phosphate loading**
 *K. Berit Sellars¹, Brittany A. Ryan¹, Beth J. Kirby¹, Christopher S. Kovacs¹. ¹Memorial University of Newfoundland, Canada
Disclosures: K. Berit Sellars, None
- SAT-265 THE CONTRIBUTION OF OSTEOCYTE METABOLISM TO ACROMEGALIC OSTEOPATHY**
 *Zhongbo Liu¹, Gozde Yildirim¹, Shoshana Yakar¹, Mitchell B Schaffler², Silvana Duran Ortiz³, John J Kopchick³. ¹David B. Kriser Dental Center, Department of Basic Science and Craniofacial Biology New York University College of Dentistry New York, NY 10010-4086, United States, ²Department of Biomedical Engineering, City College of New York, New York 10031, United States, ³Edison Biotechnology Institute, and Dept. of Biomedical Sciences, Ohio University, Athens, OH, United States
Disclosures: Zhongbo Liu, None
- SAT-266 Abrogation of the GH/IGF-1 axis in the osteoblast cell lineage is sex and compartment dependent**
 *yanjiao zhang¹, Gozde Yildirim¹, Zhongbo Liu¹, Mitchell Schaffler¹, Shoshana Yakar¹. ¹David B. Kriser Dental Center, Department of Basic Science and Craniofacial Biology New York University College of Dentistry, United States
Disclosures: yanjiao zhang, None

MECHANOBIOLOGY

- SAT-285 Mechanoresponsive MiR-138-5p Targets MACF1 to Inhibit Bone Formation**
 *Zhihao Chen¹, Fan Zhao¹, Lifang Hu¹, Chong Yin¹, Yan Zhang¹, Dijie Li¹, Aironq Qian¹, Chao Liang², Ge Zhang². ¹Lab for Bone Metabolism, Key Lab for Space Biosciences and Biotechnology, School of Life Sciences, Northwestern Polytechnical University, Xi'an, Shaanxi 710072, China., China, ²Law Sau Fai Institute for Advancing Translational Medicine in Bone & Joint Diseases, Hong Kong, China, Hong Kong
Disclosures: Zhihao Chen, None

- SAT-286** **ASBMR 2019 Fund for Research and Education Young Investigator Award**
Sptbn1 disruption increases osteocyte membrane fragility, leading to impaired cell viability and a blunted mechanotransduction response following mechanical loading
 *Mackenzie Hagan¹, Kanglun Yu¹, Eric Stokes¹, Sarah Bass¹, Mohamed Awad¹, Mohammed Elsalanty¹, Paul McNeil¹, Rachel Roberts², Daniel Perrien³, James Ervasti⁴, Mark Hamrick⁵, Meghan McGee-Lawrence⁵. ¹Augusta University, United States, ²Augusta, United States, ³Vanderbilt University, United States, ⁴University of Minnesota, United States, ⁵Medical College of Georgia, Augusta University, United States
Disclosures: Mackenzie Hagan, None
- SAT-287** **Irisin Attenuates Osteoarthritis by Inhibiting Apoptosis of Osteocyte through Activating Erk Signaling Pathway**
 *Zihao He¹, Zhifeng Yu¹. ¹Shanghai Jiao Tong University, China
Disclosures: Zihao He, None
- SAT-288** **Interleukin-17 accelerates the development of osteoarthritis in murine model**
 *Mi-La Cho¹, Keun-Hyung Cho². ¹The Catholic university of Korea, Republic of Korea, ²The Catholic of university of Korea, Republic of Korea
Disclosures: Mi-La Cho, None
- SAT-289** **3D multiplexed imaging for multi-scale finite element analysis to examine bone mechanotransduction and heterogeneous activation of β -catenin signaling in osteocytes**
 *Loretta Laughrey¹, LeAnn Tiede-Lewis², Sarah Dallas², Mark Johnson², Nuria Lara-Castillo², Thiagarajan Ganesh³. ¹University of Missouri - Kansas City, United States, ²University of Missouri - Kansas City, School of Dentistry, Department of Oral and Craniofacial Sciences, United States, ³University of Missouri - Kansas City, Department of Civil and Mechanical Engineering, United States
Disclosures: Loretta Laughrey, None
- SAT-290** **Stretch-stimulus activates the mechano-sensitive channel, Piezo1 and the subsequent Ca²⁺ influx via L-type and T-type voltage-gated Ca²⁺ channels in osteocyte-like cells.**
 *Takuya Notomi¹, Akiko Hiyama¹, Tadashige Nozaki¹. ¹Osaka Dental University, Japan
Disclosures: Takuya Notomi, None
- SAT-291** **Loading-induced expression of periosteal Osteocrin promotes bone growth**
 *Haruko Watanabe-Takano¹, Naoki Mochizuki¹. ¹Department of Cell Biology, National Cerebral and Cardiovascular Center Research Institute, Japan
Disclosures: Haruko Watanabe-Takano, None
- SAT-292** **Fluid flow through the lacunocanalicular network and mechanoresponsiveness in a mouse tibial model**
 *Alexander van Tol¹, Victoria Schemenz¹, Wolfgang Wagermaier¹, Hajar Razi¹, Peter Fratzl¹, Richard Weinkamer¹, Andreas Roschger², Paul Roschger³, Isabela Vitiene⁴, Bettina Willie⁴. ¹Max Planck Institute of Colloids and Interfaces, Department of Biomaterials, Germany, ²University of Salzburg, Chemistry and Physics of Materials, Austria, ³Ludwig Boltzmann Institute of Osteology at Hanusch Hospital of WGKK and AUVA Trauma Centre Meidling, 1st Medical Department, Hanusch Hospital, Austria, ⁴Shriners Hospitals for Children-Canada, Department of Pediatric Surgery, McGill University, Canada
Disclosures: Alexander van Tol, None

MINERAL METABOLISM

- SAT-309** **ASBMR 2019 Annual Meeting Young Investigator Award**
PTHrP Overexpression in Transgenic Mammary Tumors Causes Anorexia and White Adipose Tissue Lipolysis
 *Diego Grinman¹, Pamela Dann², John Wysolmerski³. ¹Yale University. Department of Internal Medicine. Section of Endocrinology & Metabolism, United States, ²Yale University. Department of Internal Medicine. Section of Endocrinology & Metabolism., United States, ³Yale University. Department of Internal Medicine. Section of Endocrinology & Metabolism, United States
Disclosures: Diego Grinman, None

- SAT-310 Histochemical Assessment Of Abnormal Mineralization In Bone And Aorta Induced By Disrupted FGF23/*aklotho***
 *Tomoka Hasegawa¹, Yukina Miyamoto¹, Zixuan Qiu¹, Hiromi Hongo¹, Norio Amizuka¹, Tomomaya Yamamoto². ¹Developmental Biology of Hard Tissue, Graduate School of Dental Medicine and Faculty of Dental Medicine, Hokkaido University, Japan, ²Department of Dentistry, Japan Ground Self-Defense Force Camp Asaka, Japan
Disclosures: Tomoka Hasegawa, None
- SAT-311 ASBMR 2019 Annual Meeting Young Investigator Award Bone matrix miR-125b inhibits bone resorption without affecting skeletal development and improves age-related changes in bone mass and quality**
 *Shota Ito¹, Kotaro Tanimoto¹, Tomoko Minamizaki², Yuji Yoshiko², Yoshiaki Kitaura³, Shinsuke Ohba⁴, Ung-il Chung⁴. ¹Department of Orthodontics and Craniofacial Developmental Biology, Hiroshima University Graduate School of Biomedical and Health Sciences, Japan, ²Department of Calcified Tissue Biology, Hiroshima University Graduate School of Biomedical and Health Sciences, Japan, ³Department of Bioengineering, The University of Tokyo, Japan, ⁴Center for Disease Biology and integrative Medicine, The University of Tokyo, Japan
Disclosures: Shota Ito, None
- SAT-312 All-trans-retinoic-acid reduces intestinal phosphate uptake by the transcriptional regulation of type IIB sodium-dependent phosphate co-transporter gene (*Npt2b*)**
 *Masashi Masuda¹, Yuichiro Adachi¹, Kohta Ohnishi¹, Hirokazu Ohminami¹, Hisami Yamanaka-Okumura¹, Eiji Takeda¹, Yutaka Taketani¹, Hironori Yamamoto², Makoto Miyazaki³. ¹Tokushima University Graduate School, Japan, ²Jin-ai University, Japan, ³University of Colorado Denver, United States
Disclosures: Masashi Masuda, None
- SAT-313 Prevalence of vitamin D deficiency and inadequacy among U.S. older adults: The NHANES 2007-2014**
 *Carlos Orces¹. ¹Laredo Medical Center, United States
Disclosures: Carlos Orces, None
- SAT-314 Stem Cell Osteogenic Differentiation as a Mechanism for Bioprosthetic Valve Calcification**
 *Nalini Rajamannan¹. ¹Mayo Clinic, United States
Disclosures: Nalini Rajamannan, None
- SAT-315 Abaloparatide exhibits greater osteo-anabolic response and higher cAMP stimulation and β -arrestin recruitment than teriparatide**
 *Karim Sahbani¹, Christopher Cardozo², William Bauman², Hesham Tawfeek². ¹James J. Peters VA Medical Center, United States, ²James J. Peters VA Medical Center and Icahn School of Medicine at Mount Sinai, United States
Disclosures: Karim Sahbani, None
- SAT-316 Treatment with an anti-PTHR1 mAb normalizes calcium levels and prevents weight loss in a transgenic mouse model of HHM.**
 *Pamela Dann¹, John Wysolmerski¹, Raphael Levy², Kirk Johnson³, Padma Bezwada³. ¹Yale University, United States, ²XOMA, United States, ³XOMA Corporation, United States
Disclosures: Pamela Dann, None
- SAT-317 FGF23 Levels are Elevated in a Mouse Model of HHM**
 *Pamela Dann¹, Julie Hens¹, Miralireza Takyar¹, Diego Grinman¹, Clemens Bergwitz¹, John Wysolmerski¹. ¹Yale University, United States
Disclosures: Pamela Dann, None

- SAT-318 P27 Deletion Protects against Estrogen Deficiency-Induced Osteoporosis by Inhibiting Oxidative Stress and Cell Senescence**
 *Xiaozheng Yang¹, Qian Zhang², Cheng Ma³, Yongxin Ren⁴, Dengshun Miao⁵. ¹Department of Orthopedics, Shangrao People's Hospital, Shangrao, 334000, China, China, ²The Research Center for Bone and Stem Cells, Nanjing Medical University, Nanjing, 211166, China, China, ³Department of Orthopedics, the First Affiliated Hospital of Nanjing Medical University, 210029, China, China, ⁴Department of Orthopedics, the First Affiliated Hospital of Nanjing Medical University, Nanjing, China, China, ⁵The Research Center for Bone and Stem Cells, Nanjing Medical University, Nanjing 211166, China, China
Disclosures: Xiaozheng Yang, None

MUSCULOSKELETAL AGING

- SAT-337 Improved Skeletal Phenotype And Accelerated Intramembranous Bone Healing Post Tooth Extraction in Alox5 Knockout Senescent Female Mice**
 *Claudia Bigueti¹, Ramez Mahamoud¹, Gustavo Simionato¹, André Oliva¹, Mariza Matsumoto¹, Isabela Custódio², Jesus Andreo³, Marco Brotto⁴, Walid Fakhouri⁵, Chenglin Mo⁶. ¹School of Dentistry of Araçatuba, São Paulo State University, FOA/UNESP, Brazil, ²School of Dentistry, Universidade Sagrado Coração, USC, Brazil, ³School of Dentistry of Bauru, University of São Paulo, FOB/USP, Brazil, ⁴Bone-Muscle Research Center, Nursing Program, University of Texas at Arlington, UTA, United States, ⁵Center for Craniofacial Research, School of Dentistry, The University of Texas Health Science Center at Houston, United States, ⁶University of Texas at Arlington, United States
Disclosures: Claudia Bigueti, None
- SAT-338 D3Cr muscle mass, DXA appendicular lean mass (ALM), and their relationships with "bone quality" and "muscle quality" in older men**
 *Peggy Cawthon¹, Sheena Patel¹, Steven Cummings¹, Eric Orwoll², Andrew Burghardt³, Kate Duchowny³, Lisa Langsetmo⁴, Kristine Ensrud⁴, Elsa Strotmeyer⁵, Joe Zmuda⁵, Jane Cauley⁵, Miljkovic Iva⁵, Nancy Lane⁶, William Evans⁷. ¹California Pacific Medical Center, Research Institute, United States, ²Oregon Health and Sciences University, United States, ³University of California, San Francisco, United States, ⁴University of Minnesota, United States, ⁵University of Pittsburgh, United States, ⁶University of California, Davis, United States, ⁷University of California, Berkeley, United States
Disclosures: Peggy Cawthon, None
- SAT-339 Interplay between microRNAs and senescence-associated genes that regulate age- and radiotherapy-related bone damage**
 *Abhishek Chandra¹, David Monroe¹, Joshua Farr¹, Sean Park¹, Christine Hachfeld¹, Sundeep Khosla¹, Robert Pignolo¹. ¹Mayo Clinic, United States
Disclosures: Abhishek Chandra, None
- SAT-340 Identification of age-related regulatory networks of gene expression regulation in mouse calvarial bone by transcriptome and methylome analysis**
 *Woo Jin Kim¹, Young Dan Cho¹, Hyun Mo Ryoo¹. ¹Seoul National University, Republic of Korea
Disclosures: Woo Jin Kim, None
- SAT-341 Age-associated Increase in Kynurenine Inhibits Autophagy and Promotes Senescence and Apoptosis in Bone Marrow Mesenchymal Stem Cells**
 *Dmitry Kondrikov¹, Ahmed Elmansi¹, William Hill¹, Robert Taylor Bragg², Tanner Mobely², Thomas Barrett², Patricia Schoeinlein², Xing-Ming Shi², Sadanand Fulzele², Meghan McGee Lawrence², Mark Hamrick², Carlos Isales², Alexandra Aguilar-Perez³. ¹Medical University of South Carolina, United States, ²Augusta University, United States, ³Indiana University School of Medicine, United States
Disclosures: Dmitry Kondrikov, None
- SAT-207 Lowering circulating Apolipoprotein E levels improves aged bone fracture healing**
 *Gurpreet Bhat, Rong Huang, Xiaohua Zong, Puviindran Nadesan, James White, Phillip White. Duke University, United States
Disclosures: Gurpreet Bhat, None

MUSCULOSKELETAL DEVELOPMENT

SAT-351

IRS1 and IRS2 are integral for longitudinal bone growth

*Victoria DeMambro¹, Jennifer Daruszka¹, Carolina Figueroa¹, Clifford Rosen¹, Anyonya Guntur¹, Lauren Ball². ¹Maine Medical Center Research Institute, United States, ²Medical University of South Carolina, United States

Disclosures: Victoria DeMambro, None

SAT-352

Usp53, a PTH target regulating cell lineage fate and bone turnover

*Hadla Hariri¹, Martin Pellicelli², René St-Arnaud³. ¹McGill University/Shriners Hospitals for Children - Canada, Canada, ²Shriners Hospitals for Children - Canada, Canada, ³Shriners Hospitals for Children - Canada/McGill University, Canada

Disclosures: Hadla Hariri, None

SAT-353

Loss of preBCR components affects the homeostasis of cranial bone

*Mohamed Khass¹, Louis Bridges¹, Harunur Rashid², Peter Burrows³, Amjad Javed⁴, Harry Schroeder⁵. ¹Department of Medicine, University of Alabama at Birmingham, United States, ²Department of Oral and Maxillofacial Surgery, University of Alabama at Birmingham, United States, ³Department of Microbiology, University of Alabama at Birmingham, United States, ⁴Department of Oral and Maxillofacial Surgery, University of Alabama at Birmingham, United States, ⁵Department of Medicine, University of Alabama at Birmingham, United States

Disclosures: Mohamed Khass, None

SAT-354

Emergence of an early osteoporotic phenotype in male Down syndrome mice resulting from aberrant trisomic Dyrk1a expression

*Jonathan LaCombe¹, Randall Roper¹, Joseph Wallace¹. ¹IUPUI, United States

Disclosures: Jonathan LaCombe, None

SAT-355

Osteoclast-Osteoblast “Trans-pairing” across Cortical Bone Shapes Developing Long Bones

*Koichi Matsuo¹, Masaki Yoda¹, Yukiko Kuroda¹, Katsuhiko Kawaai¹, Yanlin Wu², Hidekazu Takano², Atsushi Momose². ¹Keio University School of Medicine, Japan, ²Tohoku University, Japan

Disclosures: Koichi Matsuo, None

SAT-356

Bromodomain-containing Protein Brd4 is Required for Proper Skeletal Formation

*Christopher Paradise¹, M. Lizeth Galvan¹, Catalina Galeano-Garces¹, Roman Thaler¹, Andre J. van Wijnen¹, Amel Dudakovic¹. ¹Mayo Clinic, United States

Disclosures: Christopher Paradise, None

SAT-357

Prevention of ectopic calcification by MGP: The role of its conserved residues

*Abhinav Parashar¹, Juliana Marulanda¹, Omar Al Rifai², Mathieu Ferron³, Monzur Murshed⁴. ¹Faculty of Dentistry, McGill University, Canada, Canada, ²University of Montreal, Canada, Canada, ³Department of Biochemistry and Nuclear Medicine, University of Montreal, Canada, ⁴Faculty of Medicine, McGill University, Canada, Canada

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SAT-358

Aberrant muscle tissue repair by mutant ACVR1 FOP progenitor cells

*Alexandra Stanley¹, Elisia Tichy¹, Foteini Mourikioti¹, Eileen Shore¹. ¹University of Pennsylvania, United States

Disclosures: Alexandra Stanley, None

SAT-359

Girk3 deletion facilitates long bone growth through chondrocyte hypertrophy and limits the effect of opioids on the skeleton

*Earnest Taylor¹, Elizabeth Bradley², Xiaodong Li², Jennifer Westendorf², Kevin Wickman³. ¹MAYO CLINIC, United States, ²Mayo Clinic, United States, ³University of Minnesota, United States

Disclosures: Earnest Taylor, None

- SAT-360** **Wnt7b expressed by hypertrophic chondrocytes is a critical inducer of bone formation during endochondral ossification**
 *Sho Tsukamoto¹, Mai Kuratani¹, Misato Okubo¹, Noriko Sekine², Shinya Tanaka³, Eijiro Jimi⁴, Takenobu Katagiri⁵. ¹Division of Pathophysiology, Research Center for Genomic Medicine, Saitama Medical University, Japan, ² Division of Pathophysiology, Research Center for Genomic Medicine, Saitama Medical University, Japan, ³Department of Orthopedic Surgery, Saitama Medical University, Japan, ⁴Faculty of Dental Science, Oral health•Brain health•Total health Research Center, Kyushu University, Japan, ⁵Division of Pathophysiology, Reserch Center for Genomic Medicine, Saitama Medical University, Japan
Disclosures: Sho Tsukamoto, None
- SAT-361** **Loss of ZIP10 in osteoblasts and chondrocytes impairs skeletal development and growth.**
 *Rika Yasuhara¹, Akihiro Kawashima¹, Akane Yukimori¹, Junichi Tanaka¹, Satoko Kujiraoka¹, Kenji Mishima¹, Toshiyuki Fukada², Motomi Enomoto-Iwamoto³. ¹Showa University, Japan, ²Tokushima Bunri University, Japan, ³University of Maryland, United States
Disclosures: Rika Yasuhara, None
- SAT-362** **Sarcopenia feature selection and risk prediction using machine learning**
 *Jun-Il Yoo¹, Chan-Ho Park², Hyeonmok Kim³. ¹Gyeongang national university hos, Republic of Korea, ²Yeungnam University Medical Center, Republic of Korea, ³Seoul Medical Center, Republic of Korea
Disclosures: Jun-Il Yoo, None

MUSCULOSKELETAL PROGENITOR CELLS AND LINEAGE DETERMINATION

- SAT-386** **Eif2ak4/GCN2 maintains bone homeostasis through regulation of skeletal stem cell proliferation**
 *Guoli Hu¹, Yilin Yu¹, Courtney Karner¹, Fanxin Long². ¹Department of Orthopaedic Surgery, Duke University School of Medicine, United States, ²Department of Orthopaedic Surgery, University of Pennsylvania, United States
Disclosures: Guoli Hu, None
- SAT-387** **Wnt responsive progenitor cells contribute to osseointegration of implants in lone bone.**
 *Zhijun Li¹, Xue Yuan¹, Jill Helms¹. ¹Stanford University, United States
Disclosures: Zhijun Li, None
- SAT-388** **Characterization of a novel perivascular DMP1+ osteoprogenitor associated with trans-cortical channels of long bone**
 *Sierra Root¹, Natalie Wee¹, Sanja Novak¹, Ivo Kalajzic¹, Brya Matthews². ¹Department of Reconstructive Sciences, University of Connecticut Health Center, United States, ²Department of Molecular Medicine, University of Auckland, New Zealand
Disclosures: Sierra Root, None
- SAT-389** **Oxidative Stress Partially Induces Tendon Cell Ossification via the ATP Metabolite Adenosine**
 *Tomomi Sakuma¹, Chantida Pawaputanon Na Mahasarakham², Yutaka Kobayashi³, Hirofumi Inose³, Atsushi Okawa³, Shuhei Kajikawa⁴, Masaki Noda⁵, Yoichi Ezura⁶. ¹Tokyo Medical and Dental University, Dept. Maxillofacial Surgery, Japan, ²Department of Restorative Dentistry, Khon Kaen University, Thailand, ³Tokyo Medical and Dental University, Dept. Orthopedics, Japan, ⁴Okayama University of Science, Japan, ⁵Tokyo Medical and Dental University, Japan, ⁶Tokyo Medical and Dental University, Medical Research Institute, Japan
Disclosures: Tomomi Sakuma, None

- SAT-390 Transgenic mice with improved spatiotemporal knockdown of Hdac3 in osteoprogenitor cells demonstrate low bone mass, high marrow fat, and osteoblastic lipid storage**
 *Anuj Sharma¹, Rachel Roberts¹, Jessica Pierce¹, Mohamed Awad¹, Mohammed Elsalanty¹, William Hill², Mark Hamrick³, Carlos Isales³, Meghan McGee-Lawrence³, ¹Augusta University, United States, ²Medical University of South Carolina, United States, ³Medical College of Georgia, Augusta University, United States
Disclosures: Anuj Sharma, None
- SAT-391 LncRNA-BMNCR-Overexpressing Synovial Mesenchymal Stem Cells: Efficient Seed Cells for Bone Tissue Repair**
 *Shi-Cong Tao¹, Shang-Chun Guo¹. ¹Shanghai Jiao Tong University Affiliated Sixth People's Hospital, China
Disclosures: Shi-Cong Tao, None
- SAT-392 The chemokine Cxcl12 regulates the bone mesenchymal/stromal cell homeostasis and marrow vascular morphogenesis**
 *Yi-shiuan Tzeng¹, Shih-yu Chen¹. ¹Institute of Biomedical Sciences, Academia Sinica, Taiwan, Province of China
Disclosures: Yi-shiuan Tzeng, None
- SAT-393 Gli1 labels a subpopulation of FAP cells that respond to muscle injury**
 *Lutian Yao¹, Elisia Tichy¹, Leilei Zhong¹, Luqian Wang¹, Foteini Mourikioti¹, Ling Qin¹, *Lutian Yao², Elisia Tichy², Leilei Zhong², Luqian Wang², Foteini Mourikioti², Ling Qin². ¹University of Pennsylvania, United States, ²University of Pennsylvania, United States Minor Outlying Islands
Disclosures: Lutian Yao, None
- SAT-394 Epigenetic Regulation of Bone Regeneration in Inflammation Disease**
 *Jun Ying¹, Taotao Xu¹, Cuicui Wang¹, Regis O'Keefe¹, Yousef Abu-Amer¹, Jie Shen¹. ¹Department of Orthopaedic Surgery, School of Medicine, Washington University in St. Louis, United States
Disclosures: Jun Ying, None
- SAT-395 Differential Response of Superior and Dura Periosteum to Intermittent Treatment of Teriparatide in Cranial Bone Defect Repair**
 *Yunkun Zhai¹, Xinping Zhang¹. ¹University of Rochester Medical Center, United States
Disclosures: Yunkun Zhai, None
- SAT-396 Calycosin ameliorates glucocorticoid-induced osteonecrosis of the femoral head by suppressing TLR4/ NF-κB pathway**
 *Dao-Yu Zhu¹. ¹Department of Orthopedic Surgery, Shanghai Jiao Tong University affiliated Sixth People's Hospital, Shanghai 200233, China, China
Disclosures: Dao-Yu Zhu, None

OSTEOARTHRITIS AND OTHER JOINT DISORDERS

- SAT-417 Serum Exosomal MiRNAs as Candidate Diagnostic Biomarkers in Steroid- Induced Osteonecrosis of Femoral Head**
 *Peng Chen¹, Delong Chen². ¹1st Affiliated Hospital, Guangzhou University of Chinese Medicine, China, ²Guangzhou University of Chinese Medicine, China
Disclosures: Peng Chen, None
- SAT-418 CRISPR/Cas9-mediated ablation of osteoarthritis-associated genes attenuates osteoarthritis progression**
 *Jian Huang¹, Lan Zhao¹, Yunshan Fan¹, Jun Li¹, Di Chen¹. ¹Rush University Medical Center, United States
Disclosures: Jian Huang, None

- SAT-419** **CRIF1 ameliorates autoimmune arthritis by suppressing Th17 cells**
 *Jin-Sil Park¹, Si-Young Choi¹, Sun-Hee Hwang¹, Sung-Min Kim¹, JeongWon Choi¹, Kyung-Ah Jung¹, Ji Ye Kwon¹, Mi-La Cho¹, Sung-Hwan Park¹, Young-Yun K ong². ¹The Catholic University of Korea, Republic of Korea, ²Seoul National University, Republic of Korea
Disclosures: Jin-Sil Park, None
- SAT-420** **Microstructural analysis of subchondral trabecular bone in patients with osteoarthritis of the knee using second-generation high-resolution peripheral quantitative computed tomography (HR-pQCT)**
 *Kazuteru Shiraishi¹, Ko Chiba¹, Narihiro Okazaki¹, Kazuaki Yokota¹, Makoto Osaki¹. ¹Department of Orthopedic Surgery, Nagasaki University Graduate School of Biomedical Sciences, Japan
Disclosures: Kazuteru Shiraishi, None
- SAT-421** **PDGF-BB Secreted by Pre-Osteoclasts Drives Subchondral bone Angiogenesis in OA Joints**
 *Weiping Su¹, Xiannan Liu¹, Qi Sun¹, Xu Cao¹, Mei Wan¹. ¹Department of Orthopaedic Surgery, United States
Disclosures: Weiping Su, None
- SAT-422** **Cell Determination during the Development of Post-Traumatic Osteoarthritis**
 *Yongmei Wang¹, Sun Hee Won-Kim¹, Daniel Bikle¹. ¹Endocrine Unit, University of California, San Francisco, San Francisco VA Health Care System, United States
Disclosures: Yongmei Wang, None
- SAT-423** **RGS12 is a critical proinflammatory factor in the pathogenesis of inflammatory arthritis via acting in Cox2-RGS12-NFκB pathway activation loop**
 *Gongsheng Yuan¹, Shuting Yang¹, Shuying Yang¹, Andrew Ng², Merry Jo Oursler³. ¹University of Pennsylvania, United States, ²State University of New York, United States, ³Mayo Clinic, United States
Disclosures: Gongsheng Yuan, None
- SAT-424** **Deficiency of mesenchymal miR-204/miR-211 induces multifaceted pathologic changes of osteoarthritis**
 *Lan Zhao¹, Jian Huang¹, Yunshan Fan¹, Lifan Liao¹, Di Chen¹. ¹Department of Orthopedic Surgery, Rush University Medical Center, United States
Disclosures: Lan Zhao, None

OSTEOBLASTS

- SAT-440** **ASBMR 2019 Annual Meeting Young Investigator Award**
Truncating Mutations in Recql4 Cause a Low Bone Mass Phenotype, but Not Osteosarcoma
 *Wilson Castillo-Tandazo¹, Monique Smeets¹, Natalie Sims¹, Carl Walkley². ¹St. Vincent's Institute; Department of Medicine, St. Vincent's Hospital, University of Melbourne, Australia, ²St. Vincent's Institute; Department of Medicine, St. Vincent's Hospital, University of Melbourne; Mary MacKillop Institute for Health Research, Australian Catholic University, Australia
Disclosures: Wilson Castillo-Tandazo, None
- SAT-441** **Autophagy Suppression by Atg5 Deletion Led to Osteopenia in Mice through mTORC1 Downregulation**
 *Han Kyoung Choi¹, Yuxun Zhang¹, Fei Liu¹. ¹University of Michigan School of Dentistry, United States
Disclosures: Han Kyoung Choi, None

- SAT-442 ASBMR 2019 Annual Meeting Young Investigator Award**
Macrophage-Lineage TRAP+ Cells Recruit Periosteum-Derived Cells for Periosteal Osteogenesis and Regeneration
 *Ruoxian Deng¹, Bo Gao², Yu Chai³, Hao Chen³, Bo Hu³, Xiao Wang³, Shouan Zhu³, Shuangfei Ni³, Yong Cao³, Mei Wan³, Liu Yang⁴, Zhuojing Luo⁴, Xu Cao⁵. ¹Department of Orthopaedic Surgery, Department of Biomedical Engineering, The Johns Hopkins University School of Medicine, United States, ²Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine; Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, United States, ³Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine, United States, ⁴Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, China, ⁵Department of Orthopaedic Surgery, Institute of Cell Engineering, The Johns Hopkins University School of Medicine, United States
Disclosures: Ruoxian Deng, None
- SAT-443 Zbtb40 Loss-of-Function Inhibits Osteoblast Mineralization, Affecting Lumbar Spine Bone Mass in Mice**
 *Madison Doolittle¹, Robert Maynard¹, Dana Godfrey¹, Cheryl Ackert-Bicknell¹, Gina Calabrese², Larry Mesner², Charles Farber². ¹University of Rochester, United States, ²University of Virginia, United States
Disclosures: Madison Doolittle, None
- SAT-444 Crosstalk between glycolysis and mitochondrial metabolism in osteoblasts**
 *Wen-Chih Lee¹, Fanxin Long¹. ¹Children's Hospital of Philadelphia, United States
Disclosures: Wen-Chih Lee, None
- SAT-445 The Progressive Osteosclerosis of Fra1 Transgenic Mice is Independent of Lrp5 and Wnt1 Expression by Osteoblasts**
 *Julia Luther¹, Timur Alexander Yorgan¹, Mona Neven¹, Olga Winter¹, Michael Amling¹, Thorsten Schinke¹, Jean-Pierre David¹. ¹Institute for Osteology and Biomechanics (IOBM), University Medical Center Hamburg-Eppendorf, Germany
Disclosures: Julia Luther, None
- SAT-446 Local administration of soluble Frizzled2 accelerates bony callus formation during bone fracture repair process in a mouse model**
 *Kenta Nakajima¹, Hisashi Hasegawa¹, Yuji Yamazaki¹, Kenji Nagao¹, Yoshiaki Kita², Ung-il Chung³, Shinsuke Ohba³. ¹Kyowa Kirin Co., Ltd, Japan, ²Department of Bioengineering, The University of Tokyo Graduate School of Engineering, Japan, ³Department of Clinical Biotechnology, The University of Tokyo Graduate School of Medicine, Japan
Disclosures: Kenta Nakajima, None
- SAT-447 Effect of SerpinB2 in mineralization, cytoprotection and proliferation of osteogenic cells**
 *Mairobys Socorro¹, Sana Khalid¹, Daisy Monier¹, Dobrawa Napierala¹. ¹University of Pittsburgh, United States
Disclosures: Mairobys Socorro, None
- SAT-448 Conditional Ablation of mTOR in Early Stages of Osteoblast Lineage Results in Defective Skeletogenesis through the Regulation of PI3K/AKT-mediated Chondrocyte Terminal Differentiation**
 *Diep Nguyen¹, Yun Lu¹, Wei Chen¹, Yi-Ping Li¹. ¹Department of Pathology, University of Alabama at Birmingham, United States
Disclosures: Diep Nguyen, None

- SAT-449 Biochemical and Molecular Characterization of the Osteoblastic Differentiation of Rat Bone Marrow Stem Cells Treated with KMN-159, a Novel Selective EP4 Prostaglandin Receptor Agonist**
 *Thomas Owen¹, Kaylah Birmingham¹, Samuel Sanchez¹, Natalie Chung¹, Alexa Cahill¹, Catherine Kauber¹, Shanjiao Wei², James O'Malley³, Maria Inés Morano⁴, Stephen Barrett⁴. ¹Ramapo College of New Jersey, United States, ²Cayman Chemical, United States, ³Myometrics, LLC, United States, ⁴Cayman Chemical, United States
Disclosures: Thomas Owen, Cayman Chemical, Consultant
- SAT-450 Interleukin-6 signaling in osteoblasts promotes osteoclast differentiation**
 *Biagio Palmisano¹, Subrata Chowdhury¹, Gerard Karsenty¹, Juan Hidalgo². ¹Department of Genetics and Development, Columbia University Irving Medical Center, United States, ²Department of Cellular Biology, Physiology and Immunology, Faculty of Biosciences, Universitat Autònoma de Barcelona, Spain
Disclosures: Biagio Palmisano, None
- SAT-451 ASBMR 2019 Annual Meeting Young Investigator Award
 APP promotes osteoblast survival and bone formation by regulating mitochondrial function and preventing oxidative stress**
 *Jinxu Pan¹, Fulei Tang², Kai Zhao², Lei Xiong³, Peng Zeng³, Bo Wang³, Haohan Guo³, Lin Mei³, Wen-Cheng Xiong³. ¹Case Western Reserve University, United States, ²Augusta University, United States, ³Case Western Reserve University, United States
Disclosures: Jinxu Pan, None
- SAT-452 Macf1 Facilitates Nuclear Translocation of SMAD7 to Promote Bone Formation**
 *Fan Zhao¹, Xiaoli Ma¹, Wuxia Qiu¹, Pai Wang¹, Zhihao Chen¹, Ru Zhang¹, Peihong su¹, Jianhua Ma¹, Dijie Li¹, Chong Yin¹, Yan Zhang¹, Lei Chen¹, Chaofei Yang¹, Siyu Li¹, Ye Tian¹, Xiao Lin¹, Lifang Hu¹, Airong Qian¹, Ge Zhang². ¹Lab for Bone Metabolism, Key Lab for Space Biosciences and Biotechnology, School of Life Sciences, Northwestern Polytechnical University, Xi'an, Shaanxi 710072, China, China, ²Northwestern Polytechnical University - Hong Kong Baptist University Joint Research Centre for Translational Medicine on Musculoskeletal Health in Space, Xi'an, Shaanxi 710072, China, Hong Kong
Disclosures: Fan Zhao, None
- SAT-453 Targeted deletion of Bmal1 in osteoblast causes differential effects on trabecular and cortical bone via BMP2 signaling pathway**
 *Zhuang Qian¹, Ying Zhang¹, Xiaomin Kang¹, Yan Zahng¹, Xinxin Jin¹, Mao Xu¹, Zhengmin Ma¹, Liting Zhang¹, Shufang Wu¹, Hui xia Li², Xin Gao², Zhuanmin Zhang², Hongzhi Sun². ¹Center for Translational Medicine, the First Affiliated Hospital of Xi'an Jiaotong University, China, ²Key Laboratory of Environment and Genes Related to Diseases, Ministry of Education, Medical School of Xi'an Jiaotong University, Xi'an, China
Disclosures: Zhuang Qian, None
- SAT-454 The Constitutive Photomorphogenesis 9 (COP9) Signalosome (CSN) Complex is Required for Proper Postnatal Skeletal Growth**
 *William Samsa¹, Murali Mamidi¹, Lindsay Bashur¹, Guang Zhou¹. ¹Case Western Reserve University, United States
Disclosures: William Samsa, None
- SAT-455 Expression of TRAF3 by mature osteoblasts protects mice from age- and menopausal-related osteoporosis**
 *Gengyang Shen¹, Rong Duan¹, Jinbo Li¹, Lianping Xing¹, Brendan Boyce¹, Zhenqiang Yao¹. ¹University of Rochester Medical Center, United States
Disclosures: Gengyang Shen, None
- SAT-456 PGC-1 α Deletion in Osteoblasts Causes Bone Loss through Inducing Mitochondrial Oxidative Stress**
 *Lige Song¹, Yuhua Wen², Huijuan Li², Xiaoya Zhang², Peipei Liu², Jing Ma². ¹Tongji Hospital, Tongji University School of Medicine, China, ²Tongji Hospital, Tongji University School of Medicine, China
Disclosures: Lige Song, None

SAT-457

The epigenetic basis for bone development and homeostasis: the role of Vitamin C

*Roman Thaler¹, Farzaneh Khani¹, Xianhu Zhou¹, Oksana Pichurin¹, Chris Paradise¹, Amel Dudakovic¹, Andre van Wijnen¹, Jian Zhong², Jeong-Heon Lee², Tamas Ordog², Eleftherios Paschalis³, Klaus Klaushofer³, David Deyle⁴. ¹Departments of Orthopedics, Mayo Clinic, United States, ²Epigenomics Program, Center for Individualized Medicine, Mayo Clinic, United States, ³Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUVA Trauma Centre Meidling, 1st Medical Department, Hanusch Hospital, Vienna, Austria, Austria, ⁴Department of Medical Genetics, Mayo Clinic, United States

Disclosures: Roman Thaler, None

SAT-458

Osteoblast-derived Wnt1 regulates cortical bone mass in adult mice

*Fan Wang¹, Petri Rummukainen¹, Outi Mäkitie², Roland Baron³, Riku Kiviranta⁴. ¹Institute of Biomedicine, University of Turku, Turku 20520, Finland, Finland, ²Folkhälsan Institute of Genetics, Helsinki 00290, Finland, Finland, ³Department of Oral Medicine, Infection and Immunity, Harvard School of Dental Medicine, Harvard University, Boston, MA 02115, USA, United States, ⁴Department of Endocrinology, Division of Medicine, University of Turku and Turku University Hospital, Turku 20521, Finland, Finland

Disclosures: Fan Wang, None

SAT-459

miR-196b-5p regulates osteogenic and adipogenic differentiation of mesenchymal progenitor cells and contributes to bone homeostasis by targeting semaphorin 3A

*Yan Xie¹, Yaru Shi², Lijie Tian², Yi Wang², Baoli Wang³. ¹first author, China, ²co-author, China, ³corresponding author, China

Disclosures: Yan Xie, None

SAT-460

Plasticity of Osteoblasts and Their Adipogenic Potential Dissected by Single-cell RNA-sequencing

*Hirotaka Yoshioka¹, Masashi Nakano², Tomoko Minamizaki², Katsuyuki Kozai², Yuji Yoshiko². ¹School of Medicine, International University of Health and Welfare, Japan, ²Hiroshima University Graduate School of Biomedical and Health Sciences, Japan

Disclosures: Hirotaka Yoshioka, None

SAT-461

Tiki Regulates Bone Mass via the Inhibition of Wnt Signaling

*Xinjun Zhang¹, Weiwei Zhao¹, Bryan MacDonald², Xi He², Alexander Robling³.

¹Huazhong University of Science and Technology, China, ²Harvard Medical School, United States, ³Indiana University School of Medicine, United States

Disclosures: Xinjun Zhang, None

OSTEOCLASTS

SAT-504

Tethering Function of Mitofusin2 Controls Osteoclast Differentiation

*Anna Ballard¹, Rong Zeng¹, Allahdad Zarei¹, Christine Shao¹, Linda Cox¹, Roberta Faccio¹, Deborah Veis¹. ¹Washington University School of Medicine, United States

Disclosures: Anna Ballard, None

SAT-505

Osteoclasts are a target of the sympathetic nervous system

*Audrey C Bergeron¹, Audrie L Langlais¹, Katherine J Motyl¹. ¹Maine Medical Center Research Institute, United States

Disclosures: Audrey C Bergeron, None

SAT-506

The CaV1.2 L-type calcium channel regulates bone homeostasis in the middle and inner ear

*Chike Cao¹, Matthew Greenblatt¹, Geoffrey Pitt¹, Aaron Oswald², Brian Fabella², Yinshi Ren³, Ramona Rodriguez³, Matthew Hilton³, George Trainor⁴. ¹Weill Cornell Medicine, United States, ²The Rockefeller University, United States, ³Duke University, United States, ⁴Innovation Support Center, United States

Disclosures: Chike Cao, None

- SAT-507 L-Plastin Deficiency Produces Increased Trabecular Bone Due to reduced osteoclast function**
 *Meenakshi Chellaiah¹, Hanan Alijohani¹, Megan Moorer², Sunipa Majumdar³, Sharon Morley⁴, Vanessa Yingling⁵, Joseph Stains⁶. ¹Department of Oncology and Diagnostic Sciences, School of Dentistry, University of Maryland, United States, ²Department of Orthopedics, University of Maryland School of Medicine, United States, ³Department of Oncology and Diagnostic Sciences, School of Dentistry, University of Maryland, United States, ⁴Department of Pediatrics, Division of Infectious Diseases, and Department of Pathology and Immunology, Washington University School of Medicine, United States, ⁵Department of Kinesiology, California State University, United States, ⁶Department of Orthopaedics, University of Maryland School of Medicine, United States
Disclosures: Meenakshi Chellaiah, None
- SAT-508 Identification of RBP-J/NFATc1-miR182 as a novel network regulating inflammatory osteoclastogenesis and bone resorption**
 *Kazuki Inoue¹, Christine Miller¹, Baohong Zhao¹. ¹Hospital For Special Surgery, United States
Disclosures: Kazuki Inoue, None
- SAT-509 Osteoclasts promote trabecular bone formation through the suppression of sclerostin expression**
 *Masanori Koide¹, Yasuhiro Kobayashi¹, Teruhito Yamashita¹, Shunsuke Uehara¹, Naoyuki Takahashi¹, Nobuyuki Udagawa¹, Kohei Murakami², Hisataka Yasuda³. ¹Matsumoto Dental University, Japan, ²Okayama University of Science, Japan, ³Oriental Yeast Co., Ltd., Japan
Disclosures: Masanori Koide, None
- SAT-510 Disruption of Heparan Sulfate–RAGE Interaction Impairs Osteoclastogenesis**
 *Miaomiao Li¹, Xiaoxiao Zhang¹, Ding Xu¹. ¹State University of New York at Buffalo, United States
Disclosures: Miaomiao Li, None
- SAT-511 Comprehensive Analysis of Osteoclastogenic Proteome Reshaping Reveals a Novel Regulator of Osteoclast Differentiation and Function**
 *Maria Materozzi¹, Luigi Gennari¹, Cecilia Facchi², Massimo Resnati², Enrico Milan², Simone Cenci². ¹Department of Medicine, Surgery and Neurosciences, University of Siena, Italy, ²Unit of Age Related Diseases, Division of Genetics and Cell Biology, San Raffaele Scientific institute, Italy
Disclosures: Maria Materozzi, None
- SAT-512 CTLA4-Ig directly inhibited osteoclastogenesis by interfering with intracellular calcium oscillations in bone marrow macrophages**
 *Hiroyuki Okada¹, Hiroshi Kajiya², Shunichi Sudo², Masashi Shin², Fujio Okamoto², Koji Okabe², Yasunori Omata³, Takumi Matsumoto³, Jun Hirose³, Sakae Tanaka³, Taku Saito⁴, Takeshi Miyamoto⁵. ¹Department of Orthopaedic Surgery, the University of Tokyo, Japan, ²Department of Physiological Science and Molecular Biology, Fukuoka Dental College, Japan, ³Department of Orthopedic Surgery, The University of Tokyo, Japan, ⁴Department of Orthopaedic Surgery, The University of Tokyo, Japan, ⁵*1 Department of Orthopedics, Keio University School of Medicine, *2 Department of Orthopaedic Surgery, Kumamoto University, Japan
Disclosures: Hiroyuki Okada, None
- SAT-513 Nrf2-Mediated Negative Regulation of MYC in Osteoclastogenesis**
 *Peter S. Park¹, Kaichi Kaneko¹, Seyeon Bae¹, Kyung-Hyun Park-Min¹. ¹Hospital for Special Surgery, United States
Disclosures: Peter S. Park, None
- SAT-514 Slit-ROBO Rho GTPase Activating Protein 2 (SRGAP2) in Osteoclasts Limits Inflammatory Osteoclastogenesis and Inhibits Expression of the Coupling Cytokine SLIT3**
 *Bongjin Shin¹, Anne Delany¹, Sun-Kyeong Lee¹, Justine Kupferman², Ewoud Schmidt², Franck Polleux². ¹UConn Health, United States, ²Columbia University, United States
Disclosures: Bongjin Shin, None

SAT-515

Ga13 restrains osteoclast function by cytoskeletal and mitochondrial regulation

*Kazuki Inoue¹, Jumpei Shirakawa¹, Shinichi Nakano¹, Cheng Xu¹, Zhonghao Deng¹, Gregory Vitone¹, Baohong Zhao¹, Viktoriya Syrovatkin², Xin-Yun Huang², Liang Zhao³.
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Disclosures: Kazuki Inoue, None

SAT-516

TAK1 inhibition effectively alleviates joint inflammation as well as bone destruction in rheumatoid arthritis: Suppression of NLRP3 inflammasome-mediated inflammation and osteoclastic bone resorption.

*Hirofumi Tenshin¹, Masahiro Hiasa¹, Mohannad Ashtar¹, Kotaro Tanimoto¹, Eiji Tanaka¹, Jumpei Teramachi², *Hirofumi Tenshin³, Masahiro Hiasa³, Mohannad Ashtar³, Kotaro Tanimoto³, Eiji Tanaka³, Asuka Oda⁴, Masami Iwasa⁴, Ariunzaya Bat-Erdene⁴, Takeshi Harada⁴, Masahiro Abe⁴, Asuka Oda⁵, Masami Iwasa⁵, Ariunzaya Bat-Erdene⁵, Takeshi Harada⁵, Masahiro Abe⁵, Itsuro Endo⁶, Toshio Matsumoto⁷.
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Disclosures: Hirofumi Tenshin, None

SAT-517

Novel Insights into the SHP2's Regulation of Osteoclastogenesis and Skeletal Remodeling

*Jiayu Wei¹, Lijun Wang², Jiahui Huang², Ryan Sperratore², Douglas Moore², Wentian Yang².
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Disclosures: Jiayu Wei, None

SAT-518

ASBMR 2019 Annual Meeting Young Investigator Award

Hematopoietic stem cell-independent erythromyeloid progenitors in the yolk-sac give rise to osteoclasts contributing to the postnatal bone remodeling

*Yasuhito Yahara¹, Benjamin Alman².
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Disclosures: Yasuhito Yahara, None

SAT-519

HES1 is a Novel Determinant of Osteoclast Differentiation

*Jungeun Yu¹, Lauren Schilling¹, Ernesto Canalis¹.
¹UConn Health, United States

Disclosures: Jungeun Yu, None

- SAT-520** **Cinacalcet hydrochloride improves bone disorder in chronic kidney disease by regulating osteoclast endoplasmic reticulum stress and autophagy**
 *Hui-Wen Chiu^{1,3}, Kuo-Cheng Lu^{1,4}, Yung-Ho Hsu^{1,3}, Mali-Szu Wu^{1,2,3}, Jia-Fuh Shyu⁵, Yuh-Feng Lin^{1,2,3}, Cai-Mei Zheng^{1,2,3}. ¹Graduate Institute of Clinical Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan, ²Division of Nephrology, Department of Internal Medicine, School of Medicine, Taipei Medical University, Taipei, Taiwan, ³Division of Nephrology, Department of Internal Medicine, Shuang Ho Hospital, Taipei Medical University, Taipei, Taiwan, ⁴Division of Nephrology, Department of Medicine, Fu Jen Catholic University Hospital, School of Medicine, Fu Jen Catholic University, New Taipei City, Taiwan, ⁵Division of Nephrology, Department of Medicine, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan
Disclosures: Hui-Wen Chiu, None
- OSTEOCYTES**
- SAT-557** **Regulatory mechanism of bone formation via Wnt/beta-catenin signaling by long non-coding RNA in osteocytes**
 *Makoto Arai¹, Hiroki Ochi¹, Satoko Sunamura¹, Shingo Sato¹, Shu Takeda². ¹Department of Physiology and Cell Biology, Tokyo Medical and Dental University, Japan, ²Division of Endocrinology, Toranomon Hospital Endocrine Center, Japan
Disclosures: Makoto Arai, None
- SAT-558** **PPAR γ Regulation of Osteocyte Fuel Dependency and Capacity Contributes to the Balance of Systemic Energy Metabolism**
 *Sudipta Baroi¹, Amit Chougule², Beata Lecka-Czernik², Patrick Griffin³. ¹University of Toledo College of Medicine & Life Sciences, United States, ²University of Toledo College of Medicine and Life Sciences, United States, ³The Scripps Research Institute, United States
Disclosures: Sudipta Baroi, None
- SAT-559** **Osteocyte Oxidative Stress Following Estrogen Loss, Microdamage and Disuse**
 *Dorra Frikha-Benayed¹, Mitchell Schaffler¹, Jelena Basta-Plajkic¹, Robert J Majeska¹. ¹The city college of New York, United States
Disclosures: Dorra Frikha-Benayed, None
- SAT-560** **Mechanical Loading Reduces the Adverse Effects of Fatty Acid Overload on Osteocytes**
 *Yukiko Kitase¹, Alberto Smargiassi¹, Lynda Bonewald¹, Nuria Lara², Mark Johnson³. ¹Indiana University, United States, ²University of Missouri at Kansas City, United States, ³University of Missouri-Kansas City, United States
Disclosures: Yukiko Kitase, None
- SAT-561** **Impaired 1,25 dihydroxyvitamin D action contributes to the abnormalities in lacuno-canalicular remodeling observed in the Hyp mouse model of XLH**
 *Eva Liu¹, Ye Yuan¹, Rakshya Rana¹, Janaina Martins². ¹Brigham and Womens Hospital, United States, ²Massachusetts General Hospital, United States
Disclosures: Eva Liu, None
- SAT-562** **Mechanical Loading-induced Changes in the Sclerostin Distribution around Osteocytes**
 *Ryuta Osumi¹, Yoshihito Ishihara¹, Naoya Odagaki¹, Ziyi Wang², Hiroshi Kamioka², Tadahiro Iimura³. ¹Department of Orthodontics, Okayama University Hospital, Japan, ²Department of Orthodontics, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Japan, ³Department of Pharmacology, Hokkaido University Graduate School of Dental Medicine, Japan
Disclosures: Ryuta Osumi, None
- SAT-563** **Live Cell and Intravital Imaging Reveals Differences in Mitochondrial Redox State, Morphology and Number between Osteoblasts and Osteocytes**
 *LeAnn Tiede-Lewis¹, Anthony Meljanac¹, Nuria Lara¹, Mark Johnson¹, Sarah Dallas¹, Yukiko Kitase², Lynda Bonewald². ¹University of Missouri Kansas City, United States, ²Indiana University, United States
Disclosures: LeAnn Tiede-Lewis, None

- SAT-564 Accelerated aging and bone loss in mice lacking PTH receptor in osteocytes**
 *Yuhei Uda¹, Alejandro Kochen¹, Roberto Santos¹, Paola Divieti Pajevic¹, Dongmin Kwak², Guoxian Wei², Basya Pearlmuter², LaDora Thompson², Hiroaki Saito³, Eric Hesse³.
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Disclosures: Yuhei Uda, None
- SAT-565 Hyperglycemia Alters Gene Expression of Sclerostin but not RANKL in Ocy454 Osteocytes**
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Disclosures: Rachana Vaidya, None
- SAT-566 Progranulin Has Pro-Inflammatory Effects In Bone**
 *Liping Wang¹, Robert Nissenson¹. ¹San Francisco VA Medical Center and Department of Medicine, University of California, San Francisco, United States
Disclosures: Liping Wang, None
- SAT-567 Osteocyte estrogen receptor-beta affects bone turnover and skeletal mechanotransduction differently in young and adult male mice.**
 *Xiaoyu Xu¹, Haisheng Yang², Whitney Bullock³, Teresita Bellido⁴, Russell Main⁵. ¹Purdue University, United States, ²Beijing University of Technology, China, ³Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, ⁴Indiana University School of Medicine, United States, ⁵Musculoskeletal Biology and Mechanics Lab, Department of Basic Medical Sciences, Purdue university, United States
Disclosures: Xiaoyu Xu, None

OSTEOPOROSIS - ASSESSMENT

- SAT-589 MRI-based textural analysis of trabecular bone: a novel method for opportunistic screening of bone quality**
 *Jonathan Cheah¹, Matthew Koff¹, Ryan Breighner¹, Bin Lin¹, Mikas Grewal¹, Emily Stein¹, Conor Jones², Janice Havasy². ¹Hospital for Special Surgery, United States, ²Weill Cornell Medicine, United States
Disclosures: Jonathan Cheah, None
- SAT-590 Force to Fracture: Simplified Biomechanical Model of Osteoporotic Fractures for the Medical Provider**
 *Mary Crowe¹, Andrew Culp¹, James Lin¹, Joshua Tuck¹, Robert Femlee², Jordan Smith², Davide Piovesan². ¹Lake Erie College of Osteopathic Medicine, United States, ²Gannon University, United States
Disclosures: Mary Crowe, None
- SAT-591 Local bone density defects in patients with femoral neck fracture**
 *Luis Del Rio¹, Lorena Brance¹, Silvana Di Gregorio², Silvia Martinez³, Ludovic Humbert⁴, Patricia Sanchez⁵. ¹Densitometria. CETIR. Grupo Ascires, Spain, ²Densitometria Ósea. CETIR. Grupo Ascires, Spain, ³Reumatología. Hospital Mutua de Terrassa, Spain, ⁴Galgo Medical, Spain, ⁵Centre tecnologia diagnostica, Spain
Disclosures: Luis Del Rio, None

SAT-592

Stratification of fracture risk in type 2 Diabetes: development and validation of clinical algorithms from a task force of relevant medical societies

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Disclosures: Iacopo Chiodini, Eli Lilly, Consultant

SAT-593

DXA appendicular lean mass, FRAX, BMD and incident fractures: Findings from the Women's Health Initiative (WHI)

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Disclosures: Nicholas Harvey, None

SAT-594

External bone size predicts age-changes in femoral neck structure and mass leading to increased fracture risk independent of bone mineral density: Findings from the Study of Women's Health Across the Nation and the Study of Osteoporotic Fractures in Men

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- SAT-595 Potential Impact of Recent Clinical Vertebral Fracture on FRAX 10-year Probability**
 *Helena Johansson¹, Enwu Liu¹, John A Kanis¹, Kristin Siggeirsdottir², Vilundur Gudnason², Gunnar Sigurdson², Nicholas C Harvey³, Eugene McCloskey⁴, Mattias Lorentzon⁵. ¹McKillop Health Institute, Australian Catholic University, Australia, ²Icelandic Heart Association, Iceland, ³MRC Lifecourse Epidemiology Unit, University of Southampton, United Kingdom, ⁴Centre for Metabolic Bone Diseases, University of Sheffield Medical School, United Kingdom, ⁵Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, University of Gothenburg, Sweden
Disclosures: Helena Johansson, None
- SAT-596 Anatomical factors associated with female femoral neck fractures in Beijing women**
 *Benjamin Khoo¹, Ling Wang², Xiao Guang Cheng², Joshua Lewis³, Keenan Brown⁴, Richard Prince⁵. ¹Sir Charles Gairdner Hospital, Australia, ²Beijing Jishuitan Hospital, China, ³Edith Cowan University, Australia, ⁴Mindways Software, United States, ⁵University of Western Australia, Australia
Disclosures: Benjamin Khoo, None
- SAT-597 ASBMR 2019 Annual Meeting Young Investigator Award**
Comparison of the predictive ability of quantitative and qualitative scoring methods of osteoporotic vertebral fractures using operational skeletal fragility outcomes
 *Fjorda Koromani¹, Katerina Trajanoska¹, Ling Oei¹, Carola Zillikens¹, Gabriel Krestin¹, Andre Uitterlinden¹, Edwin Oei¹, Fernando Rivadeneira¹, Enisa Shevroja². ¹Erasmus MC, Netherlands, ²Lausanne University Hospital, Switzerland
Disclosures: Fjorda Koromani, None
- SAT-598 Prevalence of Spinal Osteoporosis in Women and Men Considering Both Bone Strength and Volumetric BMD — A Comparison of Caucasians (in the United States) and Koreans (in Korea)**
 *David C. Lee¹, Namki Hong², Yumie Rhee², Sundeep Khosla³, Tony M. Keaveny⁴. ¹O.N. Diagnostics, United States, ²Yonsei University College of Medicine, Republic of Korea, ³Mayo Clinic, United States, ⁴University of California, Berkeley, United States
Disclosures: David C. Lee, O.N. Diagnostics, Other Financial or Material Support
- SAT-599 Measured Height Loss Predicts Incident Clinical Fractures Independently from FRAX: A Registry-Based Cohort Study**
 *William Leslie¹, Lisa Lix¹, John Schousboe², Suzanne Morin³, Patrick Martineau⁴, Helena Johansson⁵, John Kanis⁶, Eugene McCloskey⁶, Nicholas Harvey⁷. ¹University of Manitoba, Winnipeg, Canada, Canada, ²Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US; University of Minnesota, Minneapolis, US, United States, ³McGill University, Montreal, Canada, Canada, ⁴University of Manitoba, Winnipeg, Canada; Harvard Medical School, Boston, US, Canada, ⁵Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK; Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, United Kingdom, ⁶Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, ⁷MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK; NIHR Southampton Biomedical Research Centre, University of Southampton and University Hospital Southampton NHS Foundation Trust, Southampton, UK, United Kingdom
Disclosures: William Leslie, None
- SAT-600 Effect of Soft Tissue Corrections on Trabecular Bone Score (TBS) in Women and Men with Type 2 Diabetes: A Rising Tide Floats All Boats**
 *Patrick Martineau¹, William Leslie², Lisa Lix², John Schousboe³, Didier Hans⁴. ¹University of Manitoba/Harvard Medical School, Canada, ²University of Manitoba, Canada, ³Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US/University of Minnesota, United States, ⁴Center of Bone Diseases, Bone and Joints Department, Lausanne University Hospital & University of Lausanne, Lausanne, Sw, Lausanne, Switzerland, Switzerland
Disclosures: Patrick Martineau, None

SAT-601 Bone remodeling measurement by quantifying new bone formation and resorbed bone mass in calcified bones using quantitative computed tomography
 *Nobuhito Nango¹, Shogo Kubota¹, Kazutaka Nomura¹, Yusuke Horiguchi¹, Ko Chiba², Masafumi Machida³. ¹Ratoc System Engineering Co., LTD., Japan, ²Department of Orthopedic Surgery, Nagasaki University Graduate School of Biomedical Sciences, Japan, ³Department of Spine and Spinal Cord Surgery, Yokohama Brain and Spine Center, Japan
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SAT-602 Postmenopausal Women Presenting for Spinal Fusion Surgery Have Abnormal Microarchitecture Despite Normal DXA
 *Alexander Dash¹, Alexandra Krez¹, Han Jo Kim¹, Matthew Cunningham¹, Frank Schwab¹, Jonathan Cheah¹, Richard Bockman¹, Emily Stein¹, Brandon Carlson², Yi Liu³. ¹Hospital for Special Surgery, United States, ²University of Kansas, United States, ³Lahey Clinic, United States
Disclosures: Alexander Dash, None

OSTEOPOROSIS - EPIDEMIOLOGY

SAT-631 Five-fold Increased Atypical Femur Fracture Risk Among North American Asians is Similar Across Asian Ethnic Subgroups and Is Not Explained by Confounding Variables
 *Annette Adams¹, Bonnie Li¹, Denison Ryan¹, Richard Dell¹, Erik Geiger², Dennis Black². ¹Kaiser Permanente Southern California, United States, ²University of California, San Francisco, United States
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SAT-632 Risk of osteoporosis with non-vitamin K antagonist oral anticoagulant vs. warfarin among patients with atrial fibrillation: a real-world nationwide propensity score-matched cohort study
 *Huei-Kai Huang¹, Carol Chiung-Hui Peng², Shu-Man Lin³, Pin-Sung Liu⁴, Ching-Hui Loh⁴, Jin-Yi Hsu⁵. ¹Department of Family Medicine, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, ²Department of Internal Medicine, University of Maryland Medical Center Midtown Campus, United States, ³Department of Physical Medicine and Rehabilitation, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, ⁴Center for Aging and Health, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, ⁵Department of Neurology, Buddhist Tzu Chi General Hospital, Taiwan, Province of China
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SAT-633 Type 2 Diabetes Mellitus and the risk of osteoporotic vertebral fractures: a meta-analysis of summary and individual participant data from 852,705 individuals
 *Fjorda Koromani¹, Ling Oei¹, Katerina Trajanoska¹, Josje Schoufour¹, Taulant Muka¹, Oscar Franco¹, Arfan Ikram¹, Carola Zillikens¹, Andre Uitterlinden¹, Gabriel Krestin¹, Edwin Oei¹, Fernando Rivadeneira¹, Enisa Shevroja², Olivier Lamy², Didier Hans², Tassos Anastasiades³, William Leslie³, Robert Josse⁴, Jerilynn Prior⁴, Stephanie Kaiser⁵, David Goltzman⁶, Brian Lentle⁷, Robert Josse⁸, Jerilynn Prior⁸, Eugene McCloskey⁹. ¹Erasmus MC, Netherlands, ²Lausanne University Hospital, Switzerland, ³University of Manitoba, Canada, ⁴University of Toronto, Netherlands, ⁵Dalhousie University, Canada, ⁶McGill University, Canada, ⁷University of British Columbia, Canada, ⁸University of Toronto, Canada, ⁹The Mellenby Centre for Bone Research, University of Sheffield, Netherlands
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SAT-634 Positive effects of low LDL-C and statins on bone mineral density: an integrated epidemiological observation analysis and Mendelian Randomization study
 *Hoi-Yee Gloria Li¹, Ching-Lung Cheung¹, Philip Chun-Ming Au¹, Kathryn Choon-Beng Tan¹, Ian Chi-Kei Wong¹, Pak-Chung Sham¹. ¹The University of Hong Kong, Hong Kong
Disclosures: Hoi-Yee Gloria Li, None

- SAT-635 Longitudinal changes in bone mineral density during perimenopausal transition: the Vietnam Osteoporosis Study**
 *Lan Ho-Pham¹, Long Van¹, Linh Mai², Tuan Nguyen³. ¹Ton Duc Thang University, Viet Nam, ²Pham Ngoc Thach University of Medicine, Viet Nam, ³Garvan Institute of Medical Research, Australia
Disclosures: Lan Ho-Pham, None
- SAT-636 Relationship between Serum Sclerostin and the Bone Mass Measured by Quantitative Ultrasound in Community-Dwelling Men and Women Aged 40 Years and Over in Japan**
 *Takayuki Nishimura¹, Kazuhiko Arima¹, Yoshihito Tomita¹, Satoshi Mizukami¹, Yasuyo Abe¹, Kiyoshi Aoyagi¹. ¹Nagasaki University, Japan
Disclosures: Takayuki Nishimura, None
- SAT-637 Cardiovascular events in a population-based observational cohort of bisphosphonate users and untreated control subjects linked to BMD and comorbidity information**
 *Alexander Rodriguez¹, Peter Ebeling¹, Martin Ernst², Mads Nybo³, Pernille Hermann³, Daniel Prieto-Alhambra⁴, Bo Abrahamsen⁵. ¹Monash University, Australia, ²University of Southern Denmark, Denmark, ³Odense University Hospital, Denmark, ⁴University of Oxford, United Kingdom, ⁵University of Southern Denmark; Holbæk Hospital, Denmark
Disclosures: Alexander Rodriguez, None
- SAT-638 Secular Trends of Hip Fractures in Lebanon 2006 – 2017: Implications for Clinical Practice and Public Health Policy**
 *Randa Saad¹, Ghada El-Hajj Fuleihan¹, Hilda Harb², walid Ammar², Ibrahim Bou-Orm³. ¹Calcium Metabolism and Osteoporosis Program, WHO Collaborating Center for Metabolic Bone Disorders at the American University of Beirut-Medical Center, Beirut, Lebanon, Lebanon, ²Ministry of Public Health, Beirut – Lebanon, Lebanon, ³Higher Institute of Public Health, St. Josphh University of Beirut, Lebanon. Institute for Global Health and Development, Queen Margaret University - Edinburgh, United Kingdom, Lebanon
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- SAT-639 The Pattern of Incident Fractures in Patients with Type 2 Diabetes Mellitus**
 *Cindy Sarodnik¹, Nicklas Rasmussen², Sandrine Bours³, Nicolaas Schaper⁴, Frank de Vries⁵, Peter Vestergaard⁶, Joop van den Bergh⁷, Annemarië Driessen⁸. ¹NUTRIM Research School, Maastricht University, Maastricht, The Netherlands, Netherlands, ²Steno Diabetes Center North Jutland, Aalborg University Hospital, Aalborg, Denmark, Denmark, ³Department of Internal Medicine, Subdivision Rheumatology, Maastricht University Medical Centre+, CAPHRI Research School, Maastricht University, Maastricht, The Netherlands, Netherlands, ⁴NUTRIM Research School, Maastricht University, Department of Internal Medicine, Subdivision Endocrinology, Maastricht University Medical Centre+, Maastricht, The Netherlands, Netherlands, ⁵Utrecht University, Department of Pharmaceutical Sciences, Division of Pharmacoepidemiology & Clinical Pharmacology, Utrecht, the Netherlands, Netherlands, ⁶Steno Diabetes Center North Jutland, Department of Endocrinology, Aalborg University Hospital, Aalborg, Denmark, Denmark, ⁷NUTRIM Research School, Department of Internal Medicine, Maastricht University Medical Centre+, Department of Internal Medicine, VieCuri Medical Center, Venlo, the Netherlands, University Hasselt, Biomedical Research Institute, Hasselt, Belgium, Netherlands, ⁸NUTRIM Research School, Maastricht University, Department of Internal Medicine, Cardiovascular Research Institute Maastricht, and Department of Clinical Pharmacy and Toxicology, Maastricht University Medical Centre+, Maastricht, The Netherlands, Netherlands
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- SAT-640 The Risk of Hip and Non-Vertebral Fractures in Parkinson's Disease: A Systematic Review and Meta-Analysis**
 *Marian Schini¹, Tatiane Vilaca¹, Richard Eastell¹, Susan Harnan², Anthea Sutton², Edith Poku², Steve Cummings³. ¹Academic Unit of Bone Metabolism, The University of Sheffield, UK, United Kingdom, ²School of Health and Related Research, The University of Sheffield, UK, United Kingdom, ³University of California, San Francisco, United States
Disclosures: Marian Schini, None
- SAT-641 Differential Risk of Fracture Attributable to Type 2 Diabetes Mellitus According to Skeletal Site**
 *John Schousboe¹, Suzanne Morin², Patrick Martineau³, Lisa Lix⁴, William Leslie⁴. ¹Park Nicollet Clinic and HealthPartners Institute, United States, ²Research Institute of the McGill University Health Centre, Canada, ³University of Manitoba and Harvard University, Canada, ⁴University of Manitoba, Canada
Disclosures: John Schousboe, None
- SAT-642 Associations of Clinically Unrecognized vs Clinically Recognized Vertebral Fracture with Subsequent Mortality**
 *John Schousboe¹, Lisa Lix², William Leslie², Suzanne Morin³. ¹Park Nicollet Clinic and HealthPartners Institute, United States, ²University of Manitoba, Canada, ³Research Institute of the McGill University Health Centre, Canada
Disclosures: John Schousboe, None
- SAT-643 Effect of Time Since Prior Fracture on Mortality at the Time of Clinical Assessment: A Registry-Based Cohort Study**
 *John Schousboe¹, Suzanne Morin², Patrick Martineau³, Lisa Lix⁴, William Leslie⁴. ¹Park Nicollet Clinic and HealthPartners Institute, United States, ²Research Institute of the McGill University Health Centre, Canada, ³University of Manitoba and Harvard University, Canada, ⁴University of Manitoba, Canada
Disclosures: John Schousboe, None
- SAT-644 Real-World Outcomes and Imminent Fractures After Index Fragility Fracture: A Population Study**
 *Jonathan D Adachi¹, Jacques P Brown², Emil H Schemitsch³, Jean-Eric Tarride⁴, Ponda Motsepe-Ditshego⁵, Natasha Burke⁵, Stephen M Colgan⁵, Lubomira Slatkovska⁵. ¹St Joseph's Healthcare, McMaster University, Canada, Canada, ²CHU de Québec (CHUL) Research Centre, Laval University, Canada, Canada, ³Division of Orthopaedics, Department of Surgery, Western University, Canada, Canada, ⁴Department of Health Research Methods, Evidence and Impact (HEI), McMaster University, Canada, ⁵Amgen Canada Inc, Canada
Disclosures: Jonathan D Adachi, Eli Lilly, Consultant, BMS, Grant/Research Support, Amgen, Grant/Research Support, Pfizer, Grant/Research Support, Amgen, Consultant, Amgen, Speakers' Bureau
- SAT-645 Lower-extremity muscle power and grip strength are related to HR-pQCT radius and tibia bone parameters**
 *Elsa Strotmeyer¹, Robert Boudreau¹, Mary Winger¹, Jane Cauley¹, Sheena Patel², Peggy Cawthon², Paolo Caserotti³, Andrew Burghardt⁴. ¹Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, United States, ²California Pacific Medical Center Research Institute, United States, ³Department of Sports Science and Clinical Biomechanics and the Center for Active and Healthy Ageing, University of Southern Denmark, Denmark, ⁴Department of Radiology & Biomedical Imaging, University of California, United States
Disclosures: Elsa Strotmeyer, None
- SAT-646 The Association between Osteocalcin, Adiposity and Bone health: results from a population-based cohort**
 *Katerina Trajanoska¹, Carolina Medina Gomez¹, M Carola Zillikens¹, Andre G. Uitterlinden¹, Fernando Rivadeneira¹. ¹Department of Internal Medicine, Erasmus MC University, Rotterdam, The Netherlands, Netherlands
Disclosures: Katerina Trajanoska, None

- SAT-647 Does the Size, Speed and Timing of Pubertal Growth Impact Fracture in Later Life? The 1946 British Birth Cohort**
 *Kate Ward¹, Camille Parsons¹, Cyrus Cooper¹, Rachel Cooper², Diana Kuh³. ¹MRC Lifecourse Epidemiology, University of Southampton, United Kingdom, ²Musculoskeletal Science and Sports Medicine Research Centre, Department of Sport and Exercise Sciences, Faculty of Science and Engineering, Manchester Metropolitan University, United Kingdom, ³MRC Lifelong Health and Ageing at University College London, United Kingdom
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- SAT-648 Different Trends in Bone Mineral Density and Osteoporosis among Adults with Type 2 Diabetes, Living in the United States, 2005-2006 through 2013-2014**
 *Yingke Xu¹, Qing Wu¹. ¹UNIVERSITY OF NEVADA LAS VEGAS, United States
Disclosures: Yingke Xu, None
- SAT-649 Detecting Causal Relationship Between Multiple Risk Factors and Osteoporosis Using Multivariable Mendelian Randomization**
 *Qiang Zhang¹, Hong-Wen Deng¹. ¹Tulane University, United States
Disclosures: Qiang Zhang, None

OSTEOPOROSIS - HEALTH SERVICES RESEARCH

- SAT-687 Real-World Outcomes and Cost of Management of Osteoporotic Fractures in Ontario, Canada**
 *Jean-Eric Tarride¹, Johnathan D Adachi², Jacques P Brown³, Emil H Schemitsch⁴, Ponda Motsepe-Ditshego⁵, Stephen M Colgan⁵, Natasha Burke⁵. ¹Department of Health Research Methods, Evidence and Impact (HEI), McMaster University, Canada, Canada, ²St Joseph's Healthcare, McMaster University, Canada, Canada, ³CHU de Québec (CHUL) Research Centre, Laval University, Canada, Canada, ⁴Division of Orthopaedics, Department of Surgery, Western University, Canada, Canada, ⁵Amgen Canada Inc, Canada
Disclosures: Jean-Eric Tarride, Amgen Canada Inc, Consultant
- SAT-688 True costs of patient management over 18 months following a hip, vertebral, distal radius, or proximal humerus fragility fracture in France – Results from the ICUROS Study**
 *Astrid Coassy¹, Hervé Locrelle¹, Thierry Thomas¹, Axel Svedbom², Roland Chapurlat³, Bernard Cortet⁴, Patrice Fardellone⁵, Orsel Philippe⁶, Christian Roux⁷, John Kanis⁸. ¹INSERM U1059 - Université de Lyon, CHU de St-Etienne, France, ²Mapi, Sweden, ³INSERM Research Unit 1033–Université de Lyon, Hospices Civils de Lyon, France, ⁴CHU de Lille, France, ⁵CHU Amiens-Picardie, France, ⁶Hôpitaux Universitaires Saint-Louis-Lariboisière-Fernand-Widal, AP-HP - Inserm UMR132 BIOSCAR, Université Paris Diderot, France, ⁷Hôpital Cochin, AP-HP - INSERM U1153, Université Paris Descartes, France, ⁸Centre for Metabolic Bone Diseases, University of Sheffield Medical School, United Kingdom
Disclosures: Astrid Coassy, None
- SAT-689 Social Isolation: An Important Predictor of Adverse Events and Patient Reported Outcome Measures (PROMs) in Elderly Hip Fracture Patients**
 *Dina Sheira¹, Joseph M. Lane¹, Jackie Finik¹, Marianna B. Frey¹, Serena Lian¹, Michael Tiongson¹, Kirsten Grueter¹, Lisa A. Mandl¹. ¹Hospital for Special Surgery, United States
Disclosures: Dina Sheira, None
- SAT-690 Improved Osteoporosis Treatment Rates Utilizing a Multidisciplinary Team Approach**
 *Violet Lagari¹. ¹Miami VA Healthcare System, United States
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SAT-691

Improving Pain Control Following Fractures in the Emergency Department: the PAINFREE Initiative

*Suzanne Morin¹, David Lussier¹, Jose Morais¹, Céline Gélinas¹, Nancy Mayo¹, Michelle Wall², Marija Djekic-Ivankovic³, Claudie Berger³, Amel Baghdadli³, Daoust Raoul⁴.

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Disclosures: Suzanne Morin, None

SAT-692

A pioneering attempt to approach non-responders to FLS invitation by home visits and questionnaires.

*Peter van den Berg¹, Paul van Haard², Piet Geusens³, Joop van den Bergh⁴, Dave Schweitzer⁵. ¹Dept. of Orthopedics en Traumatology, Fracture Liaison Service Reinier de Graaf Gasthuis Delft, Netherlands, ²Dept. of Medical Laboratories Association of Clinical Chemistry Reinier de Graaf Gasthuis Delft, Netherlands, ³Dept. of Internal Medicine, Subdivision Rheumatology, Maastricht Medical Center; Hasselt University Belgium; Biomedical Research Center Hasselt University Diepenbeek Belgium., Netherlands, ⁴Dept. of Internal Medicine, Subdivision Rheumatology, Maastricht Medical Center; Hasselt University Belgium; Biomedical Research Center Hasselt University Diepenbeek Belgium; Dept. of Internal Medicine VieCuri.Medical Center Venlo., Netherlands, ⁵Dept. of Internal Medicine, Reinier de Graaf Gasthuis Delft, Netherlands

Disclosures: Peter van den Berg, None

SAT-693

A Hardware and software integrated system enhance the treatment effect in osteoporosis patients' whole process management using internet and Internet of Things in China

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Disclosures: Li Xin, None

OSTEOPOROSIS - NUTRITION, DIETARY SUPPLEMENTS AND PHYSICAL ACTIVITY

SAT-706

The Effect of Exercise or Bisphosphonate Use on Bone Density and Microarchitecture among Postmenopausal Women with Low Bone Mass Experiencing Modest Weight Loss

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Disclosures: Kristen Beavers, None

SAT-707

Evaluating the Relationship Between Physical Activity Level and Bone Structure: a pQCT Analysis

*Laura Flores¹, Sarah Nelson¹, Kevin Kupzyk¹, Nancy Waltman¹, Sophia Pankratz¹, Laura Bilek¹, Joan Lappe². ¹University of Nebraska Medical Center, United States, ²Creighton University, United States

Disclosures: Laura Flores, None

SAT-708

Effectiveness of Resistance and Jump Training or Machine-based Isometric Training for Middle-aged and Older Men with Osteopenia and Osteoporosis: LIFTMOR for Men Trial Preliminary Findings

*Amy T Harding¹, Benjamin K Weeks¹, Lisa J Weis², Conor Lambert³, Steven L Watson³, Belinda R Beck³. ¹School of Allied Health Sciences, Griffith University, Australia, ²The Bone Clinic, Australia, ³School of Allied Health Sciences, Australia

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ASBMR 2019 Annual Meeting Young Investigator Award

SAT-709 High impact exercise increased femoral neck bone density with no adverse effects on imaging markers of knee osteoarthritis in postmenopausal women

*Chris Hartley¹, Jonathan P Folland¹, Katherine Brooke-Wavell¹, Robert Kerslake².

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SAT-710 A comparison of DXA-derived bone responses to impact versus resistance training in young adult women: The OPTIMA-Ex trial.

*Conor Lambert¹, Amy Harding¹, Steven Watson¹, Benjamin Weeks¹, Belinda Beck². ¹1

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SAT-711 Fermented Dairy Consumption and Risk of Fractures in Postmenopausal Women: Is There an Association? Women's Health Initiative Study (WHI)

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SAT-712 Identification of factors that affect serum levels of 25-hydroxyvitamin D

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SAT-713 Time of Day Does Not Appear to Influence Changes in Bone Biomarkers in Response to Exercise

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OSTEOPOROSIS - PATHOPHYSIOLOGY

SAT-728 TRAF3 in mesenchymal progenitor cells limits low-level chronic inflammation associated with osteoporosis by inhibiting GSK-3 β induced NF-KB activation

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SAT-729 Interactive Effects of Lactation History and Estrogen Status on Cellular Activities of Rat Maternal Bone

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Disclosures: Yihan Li, None

- SAT-730** **Inverse correlation between trabecular bone volume and bone marrow adipose tissue in rats treated with osteoanabolic agents**
 *Michaela Reagan¹, Samantha Costa¹, Heather Fairfield¹. ¹Maine Medical Center Research Institute, United States
Disclosures: Michaela Reagan, UCB Pharma, Grant/Research Support
- OSTEOPOROSIS - SECONDARY OSTEOPOROSIS**
- SAT-737** **Long term consequences of bariatric surgery: the obesity of bone and a subnormal ratio of bone mass to body weight**
 *Maria Augusta Alencar¹, Iana de Araujo¹, Luciana Parreiras e Silva¹, Adriana Carvalho¹, Marcello Nogueira Barbosa¹, Wilson Salgado Jr¹, Francisco Jose de Paula¹, Carlos Salmon². ¹Ribeirao Preto Medical School, USP, Brazil, ²FFCLRP, USP, Brazil
Disclosures: Maria Augusta Alencar, None
- SAT-738** **Utility of Trabecular Bone Score (TBS) for Fracture Risk Assessment in Glucocorticoid-Induced Osteoporosis**
 *Helena Florez¹, Silvia Ruiz-Gaspà¹, Ana Monegal¹, Núria Guañabens¹, Pilar Peris¹, José Hernández-Rodríguez², Sergio Prieto-González², Maria C. Cid², Africa Muxi³, Josep Lluís Carrasco⁴. ¹Metabolic Bone Diseases Unit. Department of Rheumatology. Hospital Clinic, University of Barcelona, Spain, ²Vasculitis Research Unit, Department of Autoimmune Diseases, Hospital Clínic, University of Barcelona, Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona, Spain., Spain, ³Department of Nuclear Medicine. Hospital Clínic, University of Barcelona, Spain, ⁴Biostatistics, Department of Basic Clinical Practice, University of Barcelona, Barcelona, Spain., Spain
Disclosures: Helena Florez, None
- SAT-739** **Impaired Cortical and Trabecular microstructure of Proximal Femur in HIV-infected Men Compared to Age-matched Uninfected Men measured by 3D Cortical Bone Mapping**
 *Namki Hong¹, Jung Ho Kim¹, Heejae Jung¹, Woon Ji Lee¹, Hyeon Chang Kim¹, Yumie Rhee¹, Graham Treece², J. Keenan Brown³. ¹Yonsei University College of Medicine, Republic of Korea, ²Department of Engineering, University of Cambridge, United Kingdom, ³Mindways, United States
Disclosures: Namki Hong, None
- SAT-740** **Effects of SGLT2 Inhibitors on Fractures and Bone Mineral Density in Type 2 Diabetes Mellitus: An Updated Meta-analysis**
 *Xiaoyu Li¹, Bei Sun¹, Liming Chen¹. ¹NHC Key Laboratory of Hormones and Development (Tianjin Medical University), Tianjin Key Laboratory of Metabolic Diseases, Tianjin Medical University Metabolic Diseases Hospital & Tianjin Institute of Endocrinology, Tianjin Medical University, China
Disclosures: Xiaoyu Li, None
- SAT-741** **Glycemic control and changes in hip bone mineral density in men and women with type 2 diabetes: The Health, Aging and Body Composition Study**
 *Kendall Moseley¹, Ann Schwartz², Elsa Strotmeyer³, Jane Cauley³, Steven Cummings⁴, Tamara Harris⁵, Kenneth Feingold⁶, Frances Tylavsky⁷, Deborah Sellmeyer⁸. ¹Johns Hopkins University, United States, ²University of California San Francisco, United States, ³University of Pittsburgh, United States, ⁴University of California San Francisco, United States, ⁵Laboratory of Epidemiology and Population Sciences (NIA-IRP-LEPS), United States, ⁶University of California, San Francisco, United States, ⁷University of Tennessee HSC, United States, ⁸Stanford University, United States
Disclosures: Kendall Moseley, None
- SAT-742** **Trabecular Bone Score and Bone Mineral Density in Adults with Cystic Fibrosis**
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Disclosures: Erin Norris, None

SAT-743

Fabry disease: elevated prevalence of vertebral fractures and correlation with Mainz Severity Score Index

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Disclosures: Nilton Salles Rosa Neto, Shire HGT, Speakers' Bureau, Sociedade Brasileira de Reumatologia, Grant/Research Support

SAT-744

Subclinical hyperthyroidism is associated with increased fracture risk: The MrOS Sweden Study

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Disclosures: Johan Svensson, None

SAT-745

Rheumatoid Arthritis Disease Activity is Associated with Lower Femoral Neck Bone Mineral Density

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OSTEOPOROSIS - TREATMENT

SAT-764

Effects of ibandronate on bone mineral density and microstructure in patients with primary osteoporosis after treatment with teriparatide

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SAT-765

A sensitive method to monitor the migration of human bone marrow mesenchymal stem cells in mice models.

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SAT-766

Modeling-based Bone Formation Persists in the Femoral Neck Despite Remodeling Inhibition in Subjects Treated with Denosumab

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SAT-767

Effect of Bisphosphonate on Prevention of Bone Loss after Gastrectomy: A Randomized Controlled Trial

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SAT-768

Predictors of Bone Treatment Recommendation Following Fragility Fracture Within the UK

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Disclosures: Samuel Hawley, None

SAT-769

Osteosarcoma Surveillance Program Using Real World Data from US Pharmacy Claims Linked to State Cancer Registry Data to Estimate the Incidence of Osteosarcoma Among Patients Treated with Teriparatide (Forteo)

*Nicole Kellier-Steele¹. ¹Eli Lilly and Company, United States

Disclosures: Nicole Kellier-Steele, Eli Lilly and Company, Other Financial or Material Support

SAT-770

A POST HOC ANALYSIS OF ROMOSUZUMAB EFFICACY AND BASELINE FRACTURE RISK – GREATER REDUCTION IN FRACTURE OUTCOMES IN PATIENTS AT HIGHER RISK

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Disclosures: Eugene McCloskey, Astellas, Grant/Research Support, UCB, Grant/Research Support, Amgen, Grant/Research Support

SAT-771

Denosumab 10 Year Simulation of Bone Remodeling In Human Biopsies

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SAT-772

The early effect of the anti-sclerostin antibody

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SAT-773

The impact of switching short-term teriparatide to denosumab comparing with treating denosumab alone in patients with osteoporotic hip fracture : 1-year follow-up

*Chan Ho Park¹, Jun-Il Yoo², Dong Won Byun³. ¹Yeungnam University Medical center, Republic of Korea, ²Gyeongsang National University Hospital, Republic of Korea, ³Soonchunhyang University Seoul Hospital, Republic of Korea

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SAT-774

Is severely suppressed bone turnover in patients on long term bisphosphonate treatment causally related atypical femoral fracture?

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SAT-775

Bone Balance in Postmenopausal Women Treated with Combined High-Dose Teriparatide and Denosumab: The DATA-HD Randomized Controlled Trial

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SAT-776

Risk predictors for seniors at imminent risk of fracture

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SAT-777

To determine the therapeutic potential of senolytic bone marrow MSCs for frailty with bone fracture

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- SAT-778 Study of Twice-Weekly Injections of Teriparatide by Comparing Efficacy with Once-Weekly Injections in Osteoporosis Patients: The TWICE Study**
 *Toshitsugu Sugimoto¹, Masataka Shiraki², Hiroshi Hagino³, Takeshi Yoshimura⁴, Toshitaka Nakamura⁵. ¹Eikokai Ono Hospital, Japan, ²Research Institute and Practice for Involuntal Diseases, Japan, ³School of Health Science, Tottori University, Japan, ⁴Medical Affairs Department, Asahi Kasei Pharma Corporation, Japan, ⁵Toto Sangenjaya Rehabilitation Hospital, Japan
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- SAT-779 Assessment and risk factors of denosumab discontinuation in women with postmenopausal osteoporosis on telephone survey.**
 *Koki Tsuchiya¹, Koji Ishikawa¹, Soji Tani¹, Takuma Kuroda¹, Chikara Hayakawa¹, Yoshifumi Kudo¹, Toshiyuki Shirahata¹, Takashi Nagai², Tomoaki Toyone¹, Katsunori Inagaki¹, Yusuke Oshita². ¹Department of Orthopaedic Surgery, Showa University School of Medicine, Japan, ²Department of Orthopaedic Surgery, Yamanashi Red Cross Hospital, Japan
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- SAT-780 The effect of only daily teriparatide without calcium and vitamin D supplementation**
 *Itaru Yoda¹, Toshinobu Omiya², Shinji Adachi², Toshiyuki Sakimura², Aki Nishi², Yoshihiro Yabe². ¹Juko Memorial Nagasaki Hospital, Japan, ²Juko Memorial Nagasaki Hospital, Japan
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- SAT-781 Bisphosphonates Prevent Bone Loss Associated with Denosumab Treatment Discontinuation**
 *María Belén Zanchetta¹, Carolina Pelegrin¹, Fernando Silveira², Cesar Bogado², Jose Zanchetta², Helena Salerni³, Pablo Costanzo³. ¹IDIM, Universidad del Salvador, Argentina, ²IDIM, Argentina, ³Consultorios de Investigación Clínica Endocrinológica y del Metabolismo Óseo (CICEMO), Argentina
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PARACRINE REGULATORS

- SAT-821 Gut Microbiota-Derived Outer Membrane Vesicle Promotes Skeletal Bone Mass in Aging Mice**
 *Jyotirmaya Behera¹, Jessica Ison¹, Michael John Voor¹, Suresh C Tyagi¹, Neetu Tyagi¹. ¹University of Louisville, United States
Disclosures: Jyotirmaya Behera, None
- SAT-822 Suppression of RANKL expression using a CRISPR interference transgene mimics gene deletion in mice: a loss-of-function approach that may offer improved cell type-specificity compared to the Cre-loxP system**
 *Ryan Macleod¹, Keisha Cawley¹, Qiang Fu¹, Melda Onal¹, Charles O'Brien¹. ¹University of Arkansas for Medical Sciences, United States
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- SAT-823 Possible roles of IL-12 cytokine family in management of post-menopausal osteoporosis**
 *Priyanka Shukla¹, Mohd Nizam Mansoori¹, Divya Singh¹. ¹Central Drug Research Institute, India
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- SAT-824 The Composition Of The Gut Microbiota Is A Non-Genomic Contributor To Bone Mass Heritability**
 *Abdul M Tyagi¹, Emory Hsu¹, Mingcan Yu¹, Jau-Yi Li¹, Jonathan Adams¹, Rheinallt M. Jones¹, Roberto Pacifici¹. ¹Emory University, United States
Disclosures: Abdul M Tyagi, None

PRECLINICAL MODELS OF MUSCULOSKELETAL DISORDERS

- SAT-833** **Insights from Lexicon Pharmaceuticals' Genome5000™ Mouse Gene Knockout Campaign**
 *Robert Brommage¹, David R. Powell¹, Peter Vogel². ¹Lexicon Pharmaceuticals, United States, ²St Jude Children's Research Hospital, United States
Disclosures: Robert Brommage, Lexicon Pharmaceuticals, Grant/Research Support
- SAT-834** **Novel model of restricted mobility induced skeletal detriment in zebrafish (*Danio rerio*)**
 *Deepak Kumar Khajuria¹, David Karasik². ¹(1)The Musculoskeletal Genetics Laboratory, The Azrieli Faculty of Medicine, Bar-Ilan University, Safed 1311502, Israel (2)Department of Orthopaedics and Rehabilitation, Penn State University, College of Medicine, Hershey, PA 17033-0850, USA, United States, ²The Musculoskeletal Genetics Laboratory, The Azrieli Faculty of Medicine, Bar-Ilan University, Safed 1311502, Israel, Israel
Disclosures: Deepak Kumar Khajuria, None
- SAT-835** **Anti-interleukin-6 therapy (tocilizumab) improves chronic hip synovitis and bone healing in a piglet model of ischemic osteonecrosis of the femoral head**
 *Harry Kim¹, Yinshi Ren¹, Olumide Aruwajove¹, Zhuo Deng¹, Thomas Mitchell², Michael Kutschke². ¹Texas Scottish Rite Hospital, United States, ²UT Southwestern Medical Center, United States
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- SAT-836** **The SH3BP2-SYK Axis Regulates Alveolar Bone Loss in a Mouse Model for Periodontitis**
 *Mizuho Kittaka¹, Tetsuya Yoshimoto¹, Yasuyoshi Ueki¹, Collin Schlosser², Mikihiro Kajiya³, Hidemi Kurihara³, Ernst Reichenberger¹. ¹Department of Biomedical Sciences and Comprehensive Care, Indiana University School of Dentistry, Indianapolis, United States, ²Department of Orthodontics and Dentofacial Orthopedics, University of Missouri-Kansas City, School of Dentistry, United States, ³Department of Periodontal Medicine, Applied Life Sciences, Institute of Biomedical & Health Sciences, Graduate School of Biomedical & Health Sciences, Hiroshima University, Japan, ⁴Department of Reconstructive Sciences, School of Dental Medicine, University of Connecticut Health, United States
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- SAT-837** **Novel partial weight bearing model leads to dose-dependent skeletal deficits in rats**
 *Frank Ko¹, Marie Mortreux¹, Janice Nagy¹, Seward Rutkove¹, Mary Bouxsein¹, Daniela Riveros². ¹Beth Israel Deaconess Medical Center, United States, ²Beth J, United States
Disclosures: Frank Ko, None
- SAT-838** **Investigating Global Changes in Gene Expression in a Murine Model of Cherubism**
 *Peter Maye¹, Tulika Sharma¹, Ernst Reichenberger¹, Archana Sanjay¹, Justin Cotney¹. ¹UCONN Health Center, United States
Disclosures: Peter Maye, None
- SAT-839** **Time Course of Cortical Porosity Development in Mice with Adenine-Induced Chronic Kidney Disease**
 *Corinne E Metzger¹, Elizabeth A Swallow¹, Matthew R Allen¹. ¹Indiana University School of Medicine, United States
Disclosures: Corinne E Metzger, None
- SAT-840** **CaMKK2-AMPK-p38 MAPK Axis in Osteoarthritis**
 *Uma Sankar¹, Elsa Mevel¹, Justin Williams¹. ¹Indiana University School of Medicine, United States
Disclosures: Uma Sankar, None
- SAT-841** **The Osteopenic Phenotype Observed in Winnie Mice Model of Inflammatory Bowel Disease Is Associated with Alterations in The Canonical Beta-Catenin Pathway**
 *Shilpa Sharma¹, Gustavo Duque¹, Kulmira Nurgali¹, Ahmed Saedi¹. ¹AIMSS, Australia
Disclosures: Shilpa Sharma, None

- SAT-842 Treatment-induced cortical porosity infilling in an animal model of Progressive Chronic Kidney Disease**
 *Elizabeth A. Swallow¹, Corinne E. Metzger¹, Demi R. Lehmkuhler¹, Neal X. Chen¹, Sharon M. Moe¹, Matthew R. Allen¹. ¹Indiana University, United States
Disclosures: Elizabeth A. Swallow, None
- SAT-843 Targeted Deletion of Erythropoietin Receptor (EPOR) in Schwann Cells Abolishes the Neuroprotective Effect of EPO on Peripheral Nerve Injury Recovery and Exacerbates Muscle Atrophy**
 *M A Hassan Talukder¹, Jung Lee¹, Mary O'Brien¹, Zara Karuman¹, John Elfbar¹. ¹Penn State College of Medicine, United States
Disclosures: M A Hassan Talukder, None
- SAT-844 OI fractures show delayed healing and increased possibility of re-fracture in murine models**
 *Jennifer Zieba¹, Elda Munivez¹, Alexis Castellon¹, Brendan Lee¹. ¹Baylor College of Medicine, United States
Disclosures: Jennifer Zieba, None

PRECLINICAL MODELS: NUTRITION AND PHARMACOLOGY

- SAT-869 Different effects of Abaloparatide and hPTH(1-34) on Bone Resorption and Bone Formation**
 *Tara Mullarkey¹, Heike Arlt¹, Dorothy Hu², Roland Baron², Tadatashi Sato³, Marc Wein⁴, Bruce Mitlak⁵, Beate Lanske⁶, Tatiana Besschetnova⁶. ¹Radius Health, Inc., United States, ²Harvard Dental and Harvard Medical School, United States, ³Endocrine Unit, Massachusetts General Hospital, Harvard Medical School, Boston, United States, ⁴Endocrine Unit, Massachusetts General Hospital, Harvard Medical School, United States, ⁵Radius Health, Inc., United States, ⁶Radius Health, Inc., United States
Disclosures: Tara Mullarkey, Radius Health Inc, Major Stock Shareholder
- SAT-870 Bone vascular remodeling and pericytes mobilization during the transient anabolic response to anti-sclerostin antibodies treatment and its rescue by iPTH**
 *Maude Gerbaix¹, Serge Ferrari¹, Bernard Roche², Marie-Hélène Lafage Proust². ¹Division of Bone Diseases, Geneva University Hospitals and Faculty of Medicine, Geneva, Switzerland, Switzerland, ²INSERM U1059, Université de Lyon, Saint Etienne, France, France
Disclosures: Maude Gerbaix, None
- SAT-871 Comparisons between Teriparatide and Abaloparatide on Their Anabolic Effects and Responses to Treatment Discontinuation in Ovariectomized (OVX) Rats**
 *Wei-Ju Tseng¹, Wenzheng Wang¹, Hongbo Zhao¹, Xiaowei Sherry Liu¹. ¹University of Pennsylvania, United States
Disclosures: Wei-Ju Tseng, None
- SAT-872 Chemical Homing to Localize Anabolic Extracellular Matrix Cues to Accelerate Bone Fracture Repair**
 *Jeffery Jay Nielsen¹, Stewart Low¹, Philip Low¹, Neal Ramseier¹, Rahul Hadap¹, Nicholas Young¹. ¹Purdue university, United States
Disclosures: Jeffery Jay Nielsen, None

SAT-873

A blueberry-enriched diet counteracts the effects of estrogen deficiency in mice on bone, skeletal muscle, and peripheral fat, and alters the gut microbiome.

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SAT-874

Dynamics of Modeling- and Remodeling-Based Bone Formation in Response to Intermittent Parathyroid Hormone (PTH) in Male, Female, and Ovariectomized (OVX) Rats

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Disclosures: Wenzheng Wang, None

SAT-875

Effects of a novel EP4 agonist on bone metabolism in vitro

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Disclosures: Shanqiao Wei, Cayman Chemical, Grant/Research Support

RARE BONE DISEASES: CLINICAL

SAT-890

Mazabraud syndrome is often associated with complications of FD/MAS; a multicenter international cohort study.

*Marlous Hagelstijn-Rotman¹, Natasha Appelman-Dijkstra¹, Alison Boyce², Bas Majoor³, Deborah Gensburger⁴, Michiel van de Sande⁵, Sander Dijkstra⁵, Roland Chapurlat⁶. ¹Center for Bone Quality, dept. of Internal Medicine, division of Endocrinology, Leiden University Medical Center (LUMC), Netherlands, ²Skeletal Disorders and Mineral Homeostasis Section, National Institute of Dental and Craniofacial Research, National Institutes of Health, United States, ³Dept. of Orthopaedic surgery, Leiden University Medical Center (LUMC), Netherlands, ⁴INSERM UMR 1033, University of Lyon, Hôpital Edouard Herriot, France, ⁵Dept. of Orthopaedic surgery, Leiden University Medical Center (LUMC), Netherlands, ⁶INSERM UMR 1033, University of Lyon, Hôpital Edouard Herriot, Lyon, France, France

Disclosures: Marlous Hagelstijn-Rotman, None

SAT-891

Teriparatide (TPTD) for Premenopausal Idiopathic Osteoporosis: A Randomized Single Switch-Over Trial

*Adi Cohen¹, Stephanie Shiau¹, Sanchita Agarwal¹, Mafo Kamanda-Kosseh¹, Mariana Bucovsky¹, John Williams¹, Elizabeth Shane¹, Robert R. Recker², Joan M. Lappe², Julie Stubby², David W. Dempster³, Hua Zhou³. ¹Columbia University Irving Medical Center, United States, ²Creighton University School of Medicine, United States, ³Helen Hayes Hospital, United States

Disclosures: Adi Cohen, None

- SAT-892 A Phase 1 PK/PD Study of Once vs Twice Daily Administration of rhPTH(1-84) in Patients With Hypoparathyroidism: Interim Analysis**
 *Steven Wai Ing¹, Michael Mannstadt², Lars Rejnmark³, István Takács⁴, Ivy Song⁵, Helen Shapiro⁵, Ping He⁵, Richard D Finkelman⁵. ¹Division of Endocrinology, Diabetes and Metabolism, Ohio State University Wexner Medical Center, United States, ²Endocrine Unit, Massachusetts General Hospital and Harvard Medical School, United States, ³Department of Clinical Medicine, Aarhus University Hospital, Denmark, ⁴Department of Medicine, Faculty of Medicine, Semmelweis University, Hungary, ⁵Shire Human Genetic Therapies, Inc., Lexington, MA, USA, a member of the Takeda group of companies, United States
Disclosures: Steven Wai Ing, Shire, a member of Takeda group of companies, Grant/Research Support
- SAT-893 Physical Function and Health-Related Quality of Life in Adults Treated with Asfotase Alfa for Pediatric-Onset Hypophosphatasia**
 *Lothar Seefried¹, Dominik Rak¹, Franca Genest¹, Ulrike von Hehn², Anna Petryk³. ¹Orthopaedic Clinic King-Ludwig-Haus, University of Würzburg, Germany, ²Medistat GmbH, Germany, ³Alexion Pharmaceuticals, Inc., United States
Disclosures: Lothar Seefried, Alexion Pharmaceuticals, Inc., Grant/Research Support, Alexion Pharmaceuticals, Inc., Consultant
- SAT-894 The Impact of Musculoskeletal Comorbidities of X-Linked Hypophosphatemia on Gait and Functional Range of Motion**
 *Amy Steele¹, Carolyn Macica¹, Richard Feinn¹, Juan Garbalosa², Steven Tommasini³. ¹Quinnipiac University, Frank H. Netter MD School of Medicine, United States, ²Quinnipiac University, School of Health Sciences, United States, ³Yale University School of Medicine, Department of Orthopaedics and Rehabilitation, United States
Disclosures: Amy Steele, None
- SAT-895 Identification of a mutation in the first β -propeller domain of LRP4 in a sclerosteosis patient broadens the LRP4 mutation spectrum**
 *Eveline Boudin¹, Ellen Steenackers¹, Geert Mortier¹, Wim Van Hul¹, Neveen Hamdy², Natasha Appelman-Dijkstra², Guillermo Martinez³, Milagros Sierra Bracamonte³. ¹University of Antwerp, Belgium, ²LUMC, Netherlands, ³12 de Octubre University Hospital, Spain
Disclosures: Eveline Boudin, None
- SAT-896 Intermittent Parathyroid Hormone Treatment Reduces Marrow Adipose Tissue In Patients With Hypoparathyroidism**
 *Annegreet G. Veldhuis-Vlug¹, Melissa A. Mariano-Garrett¹, Clifford J. Rosen¹, Rachel I. Gafni², Michael T. Collins², Dennis M. Black³. ¹Maine Medical Center Research Institute, Center for Clinical and Translational Medicine, United States, ²Skeletal Disorders and Mineral Homeostasis Section, National Institute of Dental and Craniofacial Research, National Institutes of Health, United States, ³Department of Epidemiology and Biostatistics, University of California San Francisco, United States
Disclosures: Annegreet G. Veldhuis-Vlug, None
- SAT-897 Clinical and Biochemical Phenotypes of Adults with Monoallelic and Biallelic ENPP1 Mutations**
 *Anupam Kotwal¹, Alejandro Ferrer¹, Rajiv Kumar¹, Ravinder Singh¹, Vishakantha Murthy¹, Laura Schultz-Rogers¹, Brandan Lanpher¹, Eric Klee¹, Robert Wermers¹, Michael Zimmermann², Demetrios Braddock³. ¹Mayo Clinic, United States, ²Medical College of Wisconsin, United States, ³Yale University, United States
Disclosures: Anupam Kotwal, None

SAT-898

Hypophosphatemic Osteosclerosis Associated With Novel Homozygous Mutations Of DMP1 Encoding Dentin Matrix Protein 1 and SPPI Encoding Osteopontin: The First Digenic SIBLING Protein Osteopathy

*Michael P. Whyte¹, Deborah J. Veis¹, S. Deepak Amalnath², Suhas Alur², William H. McAlister³, Marc D. McKee⁴, Margaret Huskey⁵, Shenghui Duan⁵, Vinieth N. Bijanki⁶, Steven Mumm⁷. ¹Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children-St. Louis; Division of Bone and Mineral Diseases, Department of Internal Medicine, Washington University School of Medicine at Barnes-Jewish Hospital, United States, ²Department of Medicine, Jawaharlal Institute of Postgraduate Medical Education and Research, India, ³Mallinckrodt Institute of Radiology, Washington University School of Medicine at St. Louis Children's Hospital, United States, ⁴Faculty of Dentistry, and Department of Anatomy and Cell Biology, McGill University, Canada, ⁵Division of Bone and Mineral Diseases, Department of Internal Medicine, Washington University, United States, ⁶Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children-St. Louis, United States, ⁷Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children - St. Louis; Division of Bone and Mineral Diseases, Department of Internal Medicine, Washington University School of Medicine at Barnes-Jewish Hospital, United States

Disclosures: Michael P. Whyte, None

RARE BONE DISEASES: TRANSLATIONAL

SAT-916

Multiple Modalities of Signaling by FOP Mutant BMP Receptor in the Developing Zebrafish

*Robyn Allen¹, Eileen Shore¹, Mary Mullins¹. ¹University of Pennsylvania School of Medicine, United States

Disclosures: Robyn Allen, None

SAT-917

MEKK2 Mediates Pathologic ERK Activation Downstream of NF1 in Osteoblasts In Vitro and In Vivo

*Seoyeon Bok¹, Dong Yeon Shin¹, Mark Eiseman¹, Ren Xu¹, Alisha Yallowitz¹, Na Li¹, Matthew B. Greenblatt¹, Jae-Hyuck Shim². ¹Department of Pathology and Laboratory Medicine, Weill Cornell Medicine, United States, ²Department of Medicine, University of Massachusetts Medical School, United States

Disclosures: Seoyeon Bok, None

SAT-918

Notch2 Antisense Oligonucleotides Ameliorate the Osteopenia of Hajdu Cheney Syndrome Mutants

*Ernesto Canalis¹, Jungeun Yu¹, Tamar Grossman², Michele Carrer³. ¹UConn Health, United States, ²Ionis Pharmaceuticals, Inc, United States, ³Ionis Pharmaceuticals, Inc., United States

Disclosures: Ernesto Canalis, None

SAT-919

New mouse model with Ifitm5 S42L connects types V and VI osteogenesis imperfecta

*Gali Guterman Ram¹, Joan C Marini¹, Ghazal Hedjazi², Stéphane Blouin², Paul Roschger², Klaus Klaushofer², Nadja Fratzl-Zelman², Chris Stephan³, Kenneth M Kozloff³. ¹Section on Heritable Disorders of Bone and Extracellular Matrix, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, United States, ²Ludwig Boltzmann Institute of Osteology, 1st Medical Department, Hanusch-Hospital, Austria, ³Departments of Orthopaedic Surgery and Biomedical Engineering, University of Michigan, United States

Disclosures: Gali Guterman Ram, None

SAT-920

Therapeutic Targeting of Autophagy in Osteogenesis Imperfecta

*Elena Makareeva¹, Shakib Omari¹, Anna M. Roberts-Pilgrim¹, Laura Gorrell¹, Ed Mertz¹, Sergey Leikin¹, Basma Khoury², Chris Stephan², Kenneth Kozloff². ¹National Institutes of Health, United States, ²University of Michigan, United States

Disclosures: Elena Makareeva, None

- SAT-921 X-Linked Hypophosphatemia: All Eight Individuals Representing Separate American Families Carrying the PHEX 3'UTR Mutation c.*231A>G Tested Positive for an Exon 13-15 Duplication**
 *Steven Mumm¹, Margaret Huskey¹, Shenghui Duan¹, Valerie Wollberg², Vinieth Bijanki², Gary S. Gottesman², Michael P. Whyte², Pamela Smith³. ¹Division of Bone and Mineral Diseases, Department of Internal Medicine, Washington University School of Medicine, St. Louis, Missouri, USA, United States, ²Center for Metabolic Bone Disease and Molecular Research, Shriners Hospital for Children, St. Louis, Missouri, USA, United States, ³Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children-St. Louis, St. Louis, Missouri, USA, United States
Disclosures: Steven Mumm, None
- SAT-922 Detection of GNAS Mutations in Circulating Cell Free DNA in Patients with Fibrous Dysplasia of bone/McCune Albright Syndrome (FD/MAS)**
 *Kelly Roszko¹, Michael Collins¹, Luis Fernandez De Castro Diaz¹, Alison Boyce¹. ¹NIH/NIDCR, United States
Disclosures: Kelly Roszko, None
- SAT-923 Fibrous dysplasia exhibits increased array of cytokines in peripheral blood and bone marrow stromal cells**
 *Tiahna Spencer¹, Kristen Pan¹, Pablo Florenzano Valdes¹, Kelly Roszko¹, Alison Boyce¹, Michael Collins¹, Luis Fernandez de Castro Diaz¹, *Tiahna Spencer², Kristen Pan², Pablo Florenzano Valdes², Kelly Roszko², Alison Boyce², Michael Collins², Luis Fernandez de Castro Diaz². ¹National Institutes of Health, United States, ²National Institutes of Health, Chile
Disclosures: Tiahna Spencer, None
- SAT-924 Effect of Zolendronic Acid Treatment on Bone in +/-G610C Mouse Model of Osteogenesis Imperfecta**
 *Jukka Vääräniemi¹, Jussi M Halleen¹, Jaakko Lehtimäki¹, Jukka Morko¹. ¹Pharmatest Services, Finland
Disclosures: Jukka Vääräniemi, None
- SAT-925 SIRT1 Promoter SNP rs932658 Associated with Bisphosphonates-related Osteonecrosis of the Jaw**
 *Guang Yang¹, Sonal Singh¹, Taimour Langae¹, Jatinder Lamba², Yan Gong². ¹Department of Pharmacotherapy and Translational Research and Center for Pharmacogenomics and Precision Medicine, College of Pharmacy, University of Florida., United States, ²Department of Pharmacotherapy and Translational Research and Center for Pharmacogenomics and Precision Medicine, College of Pharmacy, University of Florida. UF Health Cancer Center, United States
Disclosures: Guang Yang, None
- SAT-926 Heterozygous SH3BP2 Cherubism Mutation Exacerbates Alveolar Bone Loss in a Mouse Model for Periodontitis**
 *Tetsuya Yoshimoto¹, Yasuyoshi Ueki¹, Mizuho Kittaka¹, Collin Schlosser². ¹Department of Biomedical Sciences and Comprehensive Care, Indiana University School of Dentistry, United States, ²Department of Orthodontics and Dentofacial Orthopedics, University of Missouri-Kansas City, School of Dentistry, United States
Disclosures: Tetsuya Yoshimoto, None

SAT-927

Plasma miR-145 is a Prognostic Biomarker to Evaluate Risk of Reaching Surgical Threshold in Adolescent Idiopathic Scoliosis (AIS) – a 6 Years Longitudinal Study Beyond Skeletal Maturity

*Jiajun Zhang¹, Kayee Cheuk¹, Yujia Wang¹, Ka-lo Cheng¹, Tsz-ping Lam¹, Bobby Kin Wah Ng¹, Jack Chun Yiu Cheng¹, Wayne Yuk-wai Lee¹, Yong Qiu². ¹1. Department of Orthopaedics and Traumatology, SH Ho Scoliosis Research Laboratory, The Chinese University of Hong Kong 2. Joint Scoliosis Research Center of the Chinese University of Hong Kong and Nanjing University, The Chinese University of Hong Kong, Hong Kong, ²1. Joint Scoliosis Research Center of the Chinese University of Hong Kong and Nanjing University 2. Spine Surgery, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, China, China

Disclosures: Jiajun Zhang, None

SARCOPENIA, MUSCLE AND FALLS

SAT-950

The Role of Individual Components of Sarcopenia and Their Rate of Decline in Fracture Risk in Elderly Women and Men

*Dima Alajlouni¹, Tuan Nguyen¹, John Eisman¹, Jacqueline Center¹, Dana Bliuc², Thach Tran². ¹Garvan Osteoporosis and Bone Biology, Garvan Institute of Medical research, Sydney, New South Wales, Australia; Faculty of Medicine, University of New South Wales (UNSW) Australia, Sydney, Australia, Australia, ²Garvan Osteoporosis and Bone Biology, Garvan Institute of Medical research, Sydney, New South Wales, Australia, Australia

Disclosures: Dima Alajlouni, None

SAT-951

Higher Circulating Standardized 25(OH)D is Not Associated With Increased Falls Risk

*Neil Binkley¹, Christopher Sempas², Ramon Durazo-Arvizu³, Joan Lappe⁴. ¹University of Wisconsin Madison, United States, ²Vitamin D Standardization Program, United States, ³Loyola University Chicago, United States, ⁴Creighton University, United States

Disclosures: Neil Binkley, None

SAT-952

Effect of High-Intensity Interval Training on Peripheral Quantitative Computed Tomography Measures of Quadriceps Muscle and Adipose Tissue Properties in Obese, Osteopenic Older Women

*Jenna C Gibbs¹, Livia P Carvalho², Vincent Marcangeli², Guy El Hajj Boutros², Maude C Dulac², Mylène Aubertin-Leheudre². ¹McGill University, Canada, ²Université du Québec à Montréal, Canada

Disclosures: Jenna C Gibbs, None

SAT-953

Muscle dysfunction in Female Fibroblast Growth Factor 2 Knockout Mice

*Marja Hurley¹, Liping Xiao¹. ¹UConn Health, United States

Disclosures: Marja Hurley, None

SAT-954

One Leg Standing Time Predicts Fractures in Older Women Independent of Clinical Risk Factors and Bone Mineral Density

*Maria Falkdal¹, Anna Nilsson¹, Lisa Johansson¹, Daniel Sundh¹, Mattias Lorentzon¹.

¹Geriatric Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden

Disclosures: Maria Falkdal, None

SAT-955

Effectiveness of a Systematic Multifactorial Falls Risk Screening, Assessment and Management Intervention to Reduce In-Hospital Falls in Older Patients

*Mélany Hars¹, René Rizzoli¹, Serge Ferrari¹, François Herrmann², Gabriel Gold², Jean-Luc Reny³, Andrea Trombetti⁴. ¹Division of Bone Diseases, Department of Medicine, Geneva University Hospitals and Faculty of Medicine, Switzerland, ²Division of Geriatrics, Department of Readaptation and Geriatrics, Geneva University Hospitals and Faculty of Medicine, Switzerland, ³Division of General Internal Medicine, Department of Medicine, Geneva University Hospitals and Faculty of Medicine, Switzerland, ⁴Division of Bone Diseases, Department of Medicine & Division of Geriatrics, Department of Readaptation and Geriatrics, Geneva University Hospitals and Faculty of Medicine, Switzerland

Disclosures: Mélany Hars, None

SAT-956 **TRAF6 mediates impaired muscle regeneration induced by TNF α**
*Xiangjiao Yi¹, Jinbo Li¹, Lianping Xing¹, Zhenqiang Yao², Brendan Boyce². ¹Pathology, United States, ²Pathology, United States
Disclosures: Xiangjiao Yi, None

LATE-BREAKING POSTERS I

12:30 pm - 2:30 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23.

ADULT METABOLIC BONE DISORDERS

LB SAT-971 **Bone Health in Chronic Kidney Disease (CKD) is regulated by Inflammation**
*Shampa Chatterjee¹, Chamith Rajapakse². ¹University of Pennsylvania School of Medicine, Department of Physiology, United States, ²University of Pennsylvania School of Medicine, Department of Radiology, United States
Disclosures: Shampa Chatterjee, None

BIOMECHANICS AND BONE QUALITY

LB SAT-974 **Deep Learning-Based Segmentation of Vertebral Image Data Outperforms Other Automated Methods**
*Emilie Henning¹, Ryan Reger¹, Todd L. Bredbenner¹, Daniella M. Patton², Robert W. Goulet², Karl J. Jepsen², Benjamin Provencher³, Nicolas Piché³, Mike Marsh³, Roberto J. Fajardo⁴, Ellen E. Quillen⁵. ¹University of Colorado Colorado Springs, United States, ²University of Michigan, United States, ³Object Research Systems, Canada, ⁴University of the Incarnate Word School of Medicine, United States, ⁵Wake Forest School of Medicine, United States
Disclosures: Emilie Henning, None

LB SAT-975 **BONE MATERIAL PROPERTIES IN PREMENOPAUSAL TYPE 2 DIABETES MELITUS PATIENTS**
*Stamatia Rokidi¹, Klaus Klaushofer¹, Eleftherios P. Paschalis¹, Vicente F.C. Andrade², Victoria Z.C. Borba², Carolina A. Moreira³. ¹Ludwig Boltzmann Institute of Osteology, Austria, ²Divisão de Endocrinologia (SEMPR), Departamento de Medicina Interna, Universidade Federal do Paraná (UFPR), Brazil, ³Divisão de Endocrinologia (SEMPR), Departamento de Medicina Interna, Universidade Federal do Paraná (UFPR) & Laboratório PRO, section of bone histomorphometry, Pro Renal Foundation, Brazil
Disclosures: Stamatia Rokidi, None

LB SAT-976 **The Degradation and Osteogenesis of SrHPO₄-coated Mg–Nd–Zn–Zr Alloy Intramedullary Nail in Femoral Shaft Fractured Rat Model mediated by Tlr4/ PI3K/Akt Signaling Pathway**
*Zhe Wang¹, Xinyuan Wang¹, Chang Jiang¹, Junming Huang¹, Hao Wang¹, Zuoqin Yan¹, Zhiying Pang¹, Xiuhui Wang². ¹Zhongshan Hospital, Fudan University, China, ²Shanghai Pudong Zhoupu Hospital, China
Disclosures: Zhe Wang, None

BONE ACQUISITION AND PEDIATRIC BONE DISORDERS

LB SAT-981 **Do specific fat depots influence the potential for optimal bone development in growing children?**
*Rachel L. Duckham¹, Emma M. Laing², Richard D. Lewis². ¹Institute for Physical Activity and Nutrition Research, Deakin University, Australia, ²Department of Foods and Nutrition, The University of Georgia, United States
Disclosures: Rachel L. Duckham, None

BONE INTERACTIONS WITH MUSCLE AND OTHER TISSUES

- LB SAT-986 Oral Antibiotic Therapy Critically Regulates Osteoimmune Response Effects and Skeletal Homeostasis in the Alveolar Bone Complex**
*Brooks Swanson¹, Jessica Hathaway-Schrader¹, Amy Warner¹, Matthew Carson¹, Joy Kirkpatrick¹, Alex Alekseyenko¹, Sakamuri Reddy¹, Chad Novince¹. ¹MUSC, United States
Disclosures: Brooks Swanson, None

BONE MARROW MICROENVIRONMENT AND NICHES

- LB SAT-991 Retinoid X receptor α (RxR) phosphorylation at serine 265 regulates fat disturbance and bone strength in mouse**
*Jiarong Li¹, Richard Kremer². ¹McGill university, Canada, ²McGill university Health Center, Canada
Disclosures: Jiarong Li, None

BONE TUMORS AND METASTASIS

- LB SAT-993 The therapeutic targeting of human receptor activator of nuclear factor kappa-B ligand (RANKL) directly impairs colonization of the bone marrow by RANK-expressing human breast cancer cells in vivo.**
*Sofia Sousa¹, Evelyne Gineyts¹, Sandra Geraci¹, Lamia Bouazza¹, Martine Croset¹, Philippe Clezardin¹, Isabelle Treilleux², Marie Brevet³, Gabriel Ichim⁴, Inês Gomes⁵, Sandra Casimiro⁵, Luis Costa⁵, Jude Canon⁶. ¹INSERM, Research Unit UMR1033, France, ²Centre Leon Berard, France, ³Hospices Civils de Lyon, France, ⁴Center for Research on Cancer of Lyon, France, ⁵Instituto de Medicina Molecular, Portugal, ⁶Amgen, United States
Disclosures: Sofia Sousa, None

CHONDROCYTES

- LB SAT-995 Degrading products of chondroitin sulfate can induce hypertrophy-like changes and MMP-13/ADAMTS5 production in chondrocytes**
*Youn-Kwan Jung¹, Seungwoo Han². ¹Biomedical Research Institute, Gyeongsang National University Hospital, Jinju, Rep. of Korea, Republic of Korea, ²Department of Internal medicine, Kyungpook National University Hospital, Daegu, Rep. of Korea, Republic of Korea
Disclosures: Youn-Kwan Jung, None

- LB SAT-996 Automated Indentation of Femoral and Temporomandibular Joints for Characterization of Cartilage Tissue Quality in Fgf2 KO Mice**
*Paige Woods¹, Alyssa Morin¹, Po-Jung Chen¹, Sarah Mahonski¹, Marja Hurley¹, Sumit Yadav¹, Tannin Schmidt¹, Liping Xiao². ¹University of Connecticut Health Center, United States, ²sarah.a.mahonski@gmail.com, United States
Disclosures: Paige Woods, None

CLINICAL CASE REPORTS

- LB SAT-1000 Relapsing Tumor induced Osteomalacia**
*Natalia Elias¹, Luisa Plantalech¹, Marina Curriá¹, Maria Diehl². ¹no, Argentina, ²yes, Argentina
Disclosures: Natalia Elias, None

ENERGY METABOLISM, BONE, MUSCLE AND FAT

- LB SAT-1002 Loss of Function in Lysosomal Acid Lipase (LAL) Impairs Osteoblastogenesis and Increases Fracture Risk**
*Ron Helderman¹, Clifford Rosen¹, Elizabeth Rendina-Ruedy¹, Daniel Whitney², Madalina Duta-Mare³, Dagmar Kratky³, Michael Czech⁴. ¹Maine Medical Center Research Institute, United States, ²Department of Physical Medicine & Rehabilitation, University of Michigan, United States, ³Medical University of Graz, Austria, ⁴University of Massachusetts Medical School, United States
Disclosures: Ron Helderman, None

MECHANOBIOLOGY

- LB SAT-1007 Intracellular Ca²⁺ signaling encodes mechanotransduction in periodontal ligament fibroblast**
**Ei Eihshlaing¹, Ziyi Wang¹, Hiroshi Kamioka¹, Yoshihito Ishihara², Naoya Odagaki².*
¹Department of Orthodontics, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Japan, ²Department of Orthodontics, Okayama University Hospital, Japan
Disclosures: Ei Eihshlaing, None
- LB SAT-1008 3D Shape Modelling Analysis of the Hip using 3D-SHAPER Software – A Comparison Between Contralateral, Ipsilateral, and Baseline Hips for RTRK, TKR, and Control Participants**
**Michael Gundry¹, Karen Knapp¹, Susan Hopkins¹, Renaud Winzenrieth², Laureen Ferchaud².* ¹University of Exeter Medical School, United Kingdom, ²Galgo Medical, Spain
Disclosures: Michael Gundry, None

MINERAL METABOLISM

- LB SAT-1011 Transcriptional profiling reveals a different signature in metastatic and non-metastatic parathyroid carcinomas**
**Filomena Cetani¹, Vincenzo Condello², Maria Denaro², Liborio Torregrossa², Elena Pardi³, Simona Borsari³, Claudio Marcocci³, Vito Guarnieri⁴, Alfredo Scillitani⁴, Giovanni Tallini⁵, Fulvio Basolo⁶.* ¹University Hospital of Pisa, Unit of Endocrinology, Italy, ²University Hospital of Pisa, Division of Surgical Pathology, Italy, ³Department of Clinical and Experimental Medicine, University of Pisa, Italy, ⁴Division of Medical Genetics IRCCS “Casa Sollievo della Sofferenza”, Italy, ⁵Anatomical Pathology, Molecular Diagnostic Unit, University of Bologna, Italy, ⁶Department of Surgical, Medical, Molecular Pathology and Critical Area, University of Pisa, Italy
Disclosures: Filomena Cetani, None

MUSCULOSKELETAL AGING

- LB SAT-1013 Depression of Vitamin D Levels after Adult Primary Posterior Spinal Fusion. Are We Adding Insult to Injury?**
**Isabel Smith¹, Samuel Golenbock¹, Gerald Miley¹, Scott Tromanhauser¹.* ¹New England Baptist Hospital, United States
Disclosures: Isabel Smith, None

MUSCULOSKELETAL PROGENITOR CELLS AND LINEAGE DETERMINATION

- LB SAT-1016 Role of the Wnt gatekeeper Sfrp4 in the maintenance of the pool of periosteal stem cells/progenitors**
**Ruiying Chen¹, Kun Chen¹, Han Dong², Mahesh Raundhal², Roland Baron³, Matthew Greenblatt⁴, Francesca Gori⁵.* ¹Department of Bone and Mineral Research, Harvard School of Dental Medicine, Boston, MA, United States, ²Department of Cancer Immunology and Virology, Dana-Farber Cancer Institute and Harvard Medical School, Boston, MA, United States, ³Department of Bone and Mineral Research, Harvard School of Dental Medicine, & Endocrine Unit, Massachusetts General Hospital, Boston, MA, United States, ⁴Department of Pathology and Laboratory Medicine, Weill Medical College of Cornell University/, New York Presbyterian, New York, NY, United States, ⁵Department of Bone and Mineral Research, Harvard School of Dental Medicine, Boston, MA, United States
Disclosures: Ruiying Chen, None
- LB SAT-1017 A Novel Chondro-Osseous Progenitor Induced During Heterotopic Bone Formation**
**Julio Mejia¹, Elizabeth Olmsted-Davis¹, Alan Davis¹, Elizabeth Salisbury², Zbigniew Gugala².* ¹Center for Cell and Gene Therapy, Baylor College of Medicine, Texas Children's Hospital and Houston Methodist Hospital, United States, ²Department of Orthopedic Surgery and Rehabilitation, University of Texas Medical Branch, United States
Disclosures: Julio Mejia, None

- LB SAT-1023 Novel synthetic peptide derived from silk fibroin enhances cellular adhesion and tissue regeneration via the glycosaminoglycan binding of extracellular matrix**
 *Won-Joon Yoon¹, Weonu Choe¹, Sung Eun Kim¹, Ye Ji Lee¹, Kyunghwa Baek², Je-Yong Choi³, Hyun-Mo Ryoo⁴. ¹Bio R&D Center, Sewon Biotechnology, Inc., Republic of Korea, ²Department of Pharmacology, College of Dentistry and Research Institute of Oral Science, Gangneung-Wonju National University, Republic of Korea, ³Department of Biochemistry and Cell Biology, Kyungpook National University School of Medicine, Republic of Korea, ⁴Department of Molecular Genetics, School of Dentistry and Dental Research Institute, BK21 Program, Seoul National University, Republic of Korea
Disclosures: Won-Joon Yoon, Sewon Biotechnology, Inc., Grant/Research Support

- LB SAT-1024 Role of Mitophagy during osteoblast differentiation**
 *Li Tian¹, clifford Rosen², anyonya guntur². ¹MMCRI, United States, ²mmcri, United States
Disclosures: Li Tian, None

OSTEOCLASTS

- LB SAT-1027 Distinct Role of Endogenous and Exogenous Leukotrienes on Osteoclastogenesis**
 *Jose Burgos Ponce¹, Flavia Oliveira², Cintia Tokuhara³, Adriana Matos³, Camila Peres Buzalaf³, Rodrigo Oliveira³, Vimal Veeriah⁴. ¹University Center of Adamantina, Brazil, ²Sanford Burnham Prebys Medical Discovery Institute, United States, ³University of São Paulo, Brazil, ⁴ Sanford Burnham Prebys Medical Discovery Institute, United States
Disclosures: Jose Burgos Ponce, None

- LB SAT-1028 ASXL2-Bap1 epigenetic complex regulates bone homeostasis**
 *Nidhi Rohatgi¹, Wei Zou¹, Yongjia Li¹, Steven Teitelbaum¹, Anwesha Dey². ¹Washington University-School of Medicine, United States, ²Genentech, Inc, United States
Disclosures: Nidhi Rohatgi, None

OSTEOCYTES

- LB SAT-1033 Connexin43 hemichannels mediate intracellular Ca²⁺-regulated mechanotransduction in osteocytes**
 *Yoshihito Ishihara¹, Naoya Odagaki¹, Ziyi Wang², Ei Ei Hsu Hlaing², Yasuyo Sugawara², Hiroshi Kamioka². ¹Okayama University Hospital, Japan, ²Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Japan
Disclosures: Yoshihito Ishihara, None

- LB SAT-1034 CRISPR/CAS9 mediated SOST knockout ameliorates glucocorticoid-associated osteonecrosis of femoral head in rats**
 *Chang Jiang¹, Xinyuan Wang¹, Zhiying Pang¹, Junming Huang¹, Yiming Wang¹, Hengfeng Yuan¹, Zuoqin Yan¹, Zhe Wang². ¹Zhongshan Hospital, China, ²Johns Hopkins Hospital, United States
Disclosures: Chang Jiang, None

- LB SAT-1035 TNF α , IL6: Potential drug targets for glucocorticoid-induced bone loss**
 *Tiantian Wang¹, Chengqi He¹. ¹rehabilitation medicine center, China
Disclosures: Tiantian Wang, None

OSTEOPOROSIS - ASSESSMENT

- LB SAT-1041 DXA-based 3D mapping of hip cortical thinning correlates with incident fractures in postmenopausal women from the GERICO cohort**
 *Emmanuel Biver¹, Magaly Hars¹, René Rizzoli¹, Serge Ferrari¹, Renaud Winzenrieth². ¹Division of Bone Diseases, Geneva University Hospitals and Faculty of Medicine, University of Geneva, Switzerland, ²Musculoskeletal Unit, Galgo Medical, Barcelona, Spain
Disclosures: Emmanuel Biver, None

- LB SAT-1042 A Deep Learning Artificial Intelligence (AI) Method to Improve Spine Segmentation in AP spine DXA Scans and subsequently its BMD and TBS Accuracy**
 *François De Guio¹, El hassan Ahmed¹, Franck Michelet¹, Enisa Shevroja², Olivier Lamy², Didier Hans². ¹Medimaps, France, ²CHUV, Switzerland
Disclosures: François De Guio, Medimaps, Other Financial or Material Support

LB SAT-1043 Effects of Denosumab on Trabecular Bone Score (TBS) compared with Bone Mineral Density (DXA)

*Natalia Bravo Martín¹, Rosa Arboiro Pinel¹, Marjorie Andrade Poveda¹, Manuel Díaz Curiel¹, María Jesús Moro Álvarez², Ignacio Mahillo Fernández³. ¹Bone Mineral Department, Fundación Jiménez Díaz, Quirónsalud, Spain, Spain, ²Hospital Infanta Leonor, Spain, Spain, ³Epidemiology and Biostatistics Unit, Fundación Jiménez Díaz, Spain, Spain
Disclosures: Natalia Bravo Martín, None

OSTEOPOROSIS - EPIDEMIOLOGY

LB SAT-1050 The mortality rate of hip fracture within 1 year after in Korea: A nationwide population-based cohort study

*Woong Hwan Choi¹, Sang Mo Hong². ¹hanyang university hospital, Republic of Korea, ²Hanlim university hospital, Republic of Korea
Disclosures: Woong Hwan Choi, None

LB SAT-1051 Men 80-89 Years with Osteopenic BMD have Substantial 5-year Risk of Hip Fracture Accounting for Competing Mortality and Chronic Conditions

*Lisa Langsetmo¹, Allyson Kats¹, Peggy Cawthon², Katie Stone², John Schousboe³, Susan Diem⁴, Brent Taylor⁵, Kristine Ensrud⁵, Bauer Douglas⁶, Eric Orwoll⁷. ¹University of Minnesota, United States, ²San Francisco Coordinating Center, United States, ³Park Nicollet, Health Partners, University of Minnesota, United States, ⁴University of Minnesota, Minneapolis Veterans Administration Health Care System, United States, ⁵University of Minnesota, Minneapolis VA Health Care System, United States, ⁶University of California, San Francisco, United States, ⁷Oregon Health and Science University, United States
Disclosures: Lisa Langsetmo, None

LB SAT-1052 The imminent subsequent fracture risk in patients with a recent fracture at the FLS is mainly associated with falls – a 3 year prospective cohort study.

*L. Vranken¹, C.E. Wyers¹, R.Y. Van der Velde¹, I.J.A. De Bruin¹, J.P.W. Van den Bergh¹, H.M.J. Janzing², S. Kaarsemakers³, J.A. Eisman⁴, J.R. Center⁵, T.V. Nguyen⁶, D. Bliuc⁷, T. Tran⁷, P.P.M.M. Geusens⁸. ¹Department of Internal Medicine, VieCuri MC, Venlo, The Netherlands / Department of Internal Medicine, MUMC+, Maastricht, The Netherlands / School of Nutrition and Translational Research in Metabolism, Maastricht University, Maastricht, The Netherlands, Netherlands, ²Department of Surgery, VieCuri MC, Venlo, The Netherlands, Netherlands, ³Department of Orthopedic Surgery, VieCuri MC, Venlo, The Netherlands, Netherlands, ⁴Osteoporosis and Bone Biology, Garvan Institute of Medical Research, Sydney, Australia / School of Medicine Sydney, University of Notre Dame Australia, Sydney, Australia, Australia, ⁵Osteoporosis and Bone Biology, Garvan Institute of Medical Research, Sydney, Australia / Clinical School, Faculty of Medicine, St Vincent's Hospital, UNSW, Sydney, Australia, Australia, ⁶Osteoporosis and Bone Biology, Garvan Institute of Medical Research, Sydney, Australia / Clinical School, Faculty of Medicine, St Vincent's Hospital, UNSW, Sydney, Australia / School of Biomedical Engineering, University of Technology Sydney, Australia, Australia, ⁷Osteoporosis and Bone Biology, Garvan Institute of Medical Research, Sydney, Australia, Australia, ⁸Department of Rheumatology, MUMC+, Maastricht, The Netherlands / CAPRI School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands / Biomedical Research Center, Hasselt University, Diepenbeek, Belgium, Netherlands
Disclosures: L. Vranken, None

OSTEOPOROSIS - HEALTH SERVICES RESEARCH

LB SAT-1062 Salivary IL-1β but not dietary flavonoids are associated with healing after periodontal therapy to prevent tooth loss

*Stephanie Klok¹, Jenalyn Yumol¹, Taylor Sparrow¹, Philip Sullivan¹, Wendy Ward¹, Peter Fritz². ¹Brock University, Canada, ²Periodontal Wellness and Implant Surgery Clinic, Canada
Disclosures: Stephanie Klok, None

LB SAT-1063 Dual effects of marine natural extracts that affect the treatment of osteoporosis and diabetes

*Yongjin Lee¹, Young-Jin Son¹. ¹Sunchon National University, Republic of Korea

Disclosures: Yongjin Lee, None

OSTEOPOROSIS - SECONDARY OSTEOPOROSIS

LB SAT-1068 Fracture risk following bariatric surgery: a systematic review and meta-analysis of observational studies

*Marlene Chakhtoura², Randa Saad², Rawaa El Sabbagh², Dalal Habli², Ramzi Alami¹.

¹American University of Beirut - Lebanon, Lebanon, ²American University of Beirut - Lebanon, Lesotho

Disclosures: Marlene Chakhtoura, None

OSTEOPOROSIS - TREATMENT

LB SAT-1069 Oral vs Intravenous Bisphosphonates for Preventing Bone Loss After Denosumab Discontinuation

*Laura Dickens¹, Tamara Vokes¹. ¹University of Chicago, United States

Disclosures: Laura Dickens, None

LB SAT-1070 Early recurrence of increased bone turnover markers after initial response to single dose zoledronate following denosumab discontinuation in postmenopausal women

*Albrecht Popp¹, Oliver Bock¹, Christoph Senn¹, Sandra Grifone¹, Kurt Lippuner¹.

¹Department of Osteoporosis, Inselspital, Bern University Hospital, University of Bern, Switzerland

Disclosures: Albrecht Popp, None

PARACRINE REGULATORS

LB SAT-1074 Optimization of sclerostin and Dkk1 neutralizing antibody ratio to maximize anabolic action in the skeleton

*Roy Byung-Jun Choi¹, Alexander Robling¹. ¹Indiana University School of Medicine, United States

Disclosures: Roy Byung-Jun Choi, None

PRECLINICAL MODELS OF MUSCULOSKELETAL DISORDERS

LB SAT-1077 L-Glutamine Effect on Cortical and Trabecular Bone in Sickie Mice

*Mykel Green¹, Mitch Schaffler¹, Gilda Barabino¹. ¹The City College of New York, United States

Disclosures: Mykel Green, None

PRECLINICAL MODELS: NUTRITION AND PHARMACOLOGY

LB SAT-1080 PDE5A Inhibition Prevents Bone Resorption

*Se-Min kim¹, Charit Taneja¹, Yaoting Ji¹, Anisa Gumerova¹, Vitaly Ryu¹, Sakshi Gera¹, Tan-Chun Kuo¹, Daria Lizneva¹, Li Sun¹, Tony Yuen¹, Mone Zaidi¹. ¹Department of Medicine and Mount Sinai Bone Program, Icahn School of Medicine at Mount Sinai, United States

Disclosures: Se-Min kim, None

RARE BONE DISEASES - TRANSLATIONAL

LB SAT-1084 Visualization of Asfotase Alfa-Binding to Sites of Calcification In Vivo

*Flavia Amadeu de Oliveira¹, Sonoko Narisawa¹, Massimo Bottini¹, José Luis Millán².

¹Sanford Burnham Prebys Medical Discovery Institute, United States, ²Sanford Burnham Prebys Medical Discovery Institute, United States

Disclosures: Flavia Amadeu de Oliveira, None

LB SAT-1085 Sensory neuron dysfunction underlies ACVR1-mediated pain in human heterotopic ossification
 *Amy Ton¹, Xiaobing Yu¹, Jiadong Chen¹, Emilie Barruet¹, Syed Ali¹, Tea Chan¹, Katie Bigay¹, Jennifer Ho¹, Ina Nikolli¹, Arnold Kriegstein¹, Edward Hsiao¹, Blanca Morales², Hongju Liu³, Kin Cheung⁴. ¹University of California, San Francisco, United States, ²University of California, San Francisco, United States, ³Peking Union Medical College Hospital, China, ⁴BioSAS Consulting, Inc., United States
Disclosures: Amy Ton, None

ORAL POSTER SESSION I

12:45 pm - 1:35 pm **Orange County Convention Center**
West Hall C

New this year! Come hear a select number of plenary poster presenters give an overview of their poster on digital touch screen displays. Following the oral poster presentations, visit their poster board to ask questions and continue the discussion.

BASIC & TRANSLATIONAL

12:45 pm FRI-174	<p>DDRGK1 is required for the proper chondrogenesis and the regulation of osteochondroprogenitors *Yangjin Bae¹, Monika Weisz-Hubshman¹, Adetutu Egunsola¹, Ming-Ming Jiang ¹, Brendan Lee¹. ¹Baylor College of Medicine, United States <i>Disclosures:</i> Yangjin Bae, None</p>
12:50 pm FRI-175	<p>Pinch regulates chondrogenesis by control of TGF-β1 signaling and expression of Sox9 and Runx2 in chondrocytes *Yiming Lei¹, Huiling Cao¹, Pengyu Li¹, Xin Liu¹, Qinnan Yan¹, Simin Lin¹, Liting Ma¹, Yuxi Guo¹, Yumei Lai², Yiran Zhao³, Wei Yang³, Yishu Wang³, Ruxuan Li³, Guozhi Xiao³. ¹Guangdong Provincial Key Laboratory of Cell Microenvironment and Disease Research, Shenzhen Key Laboratory of Cell Microenvironment, and Department of Biology, Southern University of Science and Technology, , China, ²Department of Orthopedic Surgery, Rush University Medical Center, United States, ³Guangdong Provincial Key Laboratory of Cell Microenvironment and Disease Research, Shenzhen Key Laboratory of Cell Microenvironment, and Department of Biology, Southern University of Science and Technology, China <i>Disclosures:</i> Yiming Lei, None</p>
12:55 pm FRI-263	<p>CXCL12 Deletion in Osteoprogenitors Causes a Dramatic, Albeit Balanced, Increase in the Rate of Bone Remodeling and Attenuates the Loss of Cortical Bone Mass Caused by Estrogen Deficiency in Mice *Filipa Ponte¹, Warren Aaron¹, Ha-neui Kim¹, Srividhya Iyer¹, Li Han¹, Maria Almeida¹, Manolagas Stavros¹. ¹UAMS, United States <i>Disclosures:</i> Filipa Ponte, None</p>
1:00 pm FRI-92	<p>ASBMR 2019 Annual Meeting Young Investigator Award The Muscle Metabolite, β-aminoisobutyric acid, L-BAIBA, Enhances the Effects of Suboptimal Mechanical Loading on New Bone Formation *Alberto Smargiassi¹, Alexander Robling¹, Lynda Bonewald¹, Marco Brotto². ¹IUPUI, United States, ²University of Texas at Arlington, United States <i>Disclosures:</i> Alberto Smargiassi, None</p>
1:05 pm FRI-181	<p>Runx1 Mediates Articular Cartilage Repair in Osteoarthritis through Upregulating Yap and Downregulating Wnt/β-catenin Signaling Pathway *Yan Zhang¹, Yun Lu¹, Tao Zuo¹, Guochun Zhu¹, Jinjin Wu¹, Wei Chen¹, Yi-Ping Li¹. ¹Department of Pathology, University of Alabama at Birmingham, SHEL 810, 1825 University Blvd, Birmingham AL 35294-2182, USA, United States <i>Disclosures:</i> Yan Zhang, None</p>

Posters

1:10 pm
FRI-135

PREX1 drives spontaneous bone metastasis of ER+ breast cancer cells

*Miranda E. Clements¹, Rachele W. Johnson². ¹Vanderbilt University, United States, ²Vanderbilt University Medical Center, United States
Disclosures: Miranda E. Clements, None

1:15 pm
FRI-136

TBK1/IKK ϵ inhibitor Amlexanox blocks Multiple Myeloma cell growth in vitro and in vivo

*Quanhong Sun¹, Juraj Adamik¹, Peng Zhang¹, Konstantinos Lontos¹, Deborah L. Galson¹, Valentina Marchica², Nicola Giuliani², Rebecca Silberman³, G.David Roodman⁴, Lea Nyiranshuti⁵, Joseph Latoche⁵, Carolyn J. Anderson⁵, Konstantinos Verdelis⁶. ¹Department of Medicine, Hem-Onc Division, UPMC Hillman Cancer Center, University of Pittsburgh, United States, ²Myeloma Unit, Department of Clinical and Experimental Medicine, University of Parma, Italy, Italy, ³Department of Medicine, Hematology-Oncology Division, Indiana University, Indianapolis, IN, USA, United States, ⁴Department of Medicine, Hem-Onc Division, Indiana University, Indianapolis, IN; ⁵Veterans Administration Medical Center, Indianapolis, IN, USA, United States, ⁶Department of Medicine, Cardiology Division, University of Pittsburgh, United States, ⁶Department of Oral Biology, The Center for Craniofacial Regeneration, McGowan Institute for Regenerative Medicine, University of Pittsburgh, United States
Disclosures: Quanhong Sun, None

1:20 pm
FRI-219

Housing temperature influences bone and brown adipose tissue side effects of atypical antipsychotic drugs in female mice

*Audrie Langlais¹, Katherine J. Motyl¹, Roni F. Kunst², Karen Houseknecht³. ¹Maine Medical Center Research Institute, United States, ²Maine Medical Center Research Institute, United States, ³University of New England, United States
Disclosures: Audrie Langlais, None

1:25 pm
FRI-138

ASBMR 2019 Annual Meeting Young Investigator Award

Circulating osteocalcin-positive cells predict the progression of breast cancer bone metastasis

*Kyoung Jin Lee¹, Serk In Park¹, Hyun Jin Sun², Kyung-Hun Lee², Tae Young Kim², Seock-Ah Im², Sun Wook Cho². ¹Department of Biochemistry and Molecular Biology, Korea University College of Medicine, Republic of Korea, ²Department of Internal Medicine, Seoul National University Hospital, Republic of Korea
Disclosures: Kyoung Jin Lee, None

1:30 pm
FRI-30

Material Properties of Cortical Bone Do Not Differ between Donors with and without Type 2 Diabetes

*Jeffry Nyman¹, Sasidhar Uppuganti¹, Nora Ward², Mark Does². ¹Vanderbilt University Medical Center, United States, ²Vanderbilt University, United States
Disclosures: Jeffry Nyman, ActiveLife Scientific, Inc., Other Financial or Material Support

CLINICAL

12:45 pm
FRI-75

Molecular Mechanisms for Pamidronate Rescue of Post-burn Muscle Loss in Children

*Fabrizio Pin¹, Lynda Bonewald¹, Andrea Bonetto², Gordon Klein³. ¹Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, ²Department of Surgery, Indiana University School of Medicine, United States, ³Department of Orthopaedic Surgery, University of Texas Medical Branch, United States
Disclosures: Fabrizio Pin, None

12:50 pm
FRI-591

Local bone density defects in patients with femoral neck fracture

*Luis Del Rio¹, Lorena Brance¹, Silvana Di Gregorio², Silvia Martinez³, Ludovic Humbert⁴, Patricia Sanchez⁵. ¹Densitometria. CETIR. Grupo Ascires, Spain, ²Densitometria Ósea. CETIR. Grupo Ascires, Spain, ³Reumatología. Hospital Mutua de Terrassa, Spain, ⁴Galgo Medical, Spain, ⁵Centre tecnologia diagnostica, Spain
Disclosures: Luis Del Rio, None

12:55 pm
FRI-632

Risk of osteoporosis with non-vitamin K antagonist oral anticoagulant vs. warfarin among patients with atrial fibrillation: a real-world nationwide propensity scorematched cohort study

*Huei-Kai Huang¹, Carol Chiung-Hui Peng², Shu-Man Lin³, Pin-Sung Liu⁴, Ching-Hui Loh⁴, Jin-Yi Hsu⁵. ¹Department of Family Medicine, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, ²Department of Internal Medicine, University of Maryland Medical Center Midtown Campus, United States, ³Department of Physical Medicine and Rehabilitation, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, ⁴Center for Aging and Health, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, ⁵Department of Neurology, Buddhist Tzu Chi General Hospital, Taiwan, Province of China
Disclosures: Huei-Kai Huang, None

1:00 pm
FRI-2

In vivo detection of vasculature and fat within cortical bone pores: a validation study

*Brian Leahy¹, Barbara Garita¹, Po-Hung Wu¹, Gabrielle Joseph¹, Misung Han¹, Roland Krug¹, Thomas Link¹, Galatea Kazakia¹. ¹UCSF, United States
Disclosures: Brian Leahy, None

1:05 pm
FRI-3

An Overview of the Etiology, Clinical Manifestations, Management Strategies, and Complications of Hypoparathyroidism from the Canadian National Hypoparathyroidism Registry

*Yousef Alalawi¹, Hajar Abu Alrob¹, Haniah Shaikh², Manoela Braga², Zubin Punthakee², Rafik El Werfalli², J.E.M. Young², Aliya Khan², Adam Millar³, Muhammad Shrayyef³, Susan Teschke³, Heather Zariffah⁴, Iman M'Hiri⁴, Tayyab Khan⁵, Adam Waldbilling⁶. ¹McMaster University, Canada, ²McMaster University, Canada, ³University of Toronto, Canada, ⁴Bone Research and Education Centre, Canada, ⁵LCM, Canada, ⁶CHEO, Canada
Disclosures: Yousef Alalawi, None

1:10 pm
FRI-5

Clinical, Biochemical and Radiological Profile of Normocalcaemic Hyperparathyroidism: a Multicentric Cross-Sectional Evaluation

*Anda Mihaela Naciu¹, Gaia Tabacco¹, Daria Maggi¹, Luca D'Onofrio¹, Silvia Briganti¹, Nicola Napoli¹, Paolo Pozzilli¹, Silvia Manfrini¹, Andrea Palermo¹, Stefania Falcone², Andrea Fabbri², Assunta Santonati³, Domenico Castellitto⁴, Alessandro Casini⁴, Roberto Cesareo⁴, Diana Lelli⁵, Claudio Pedone⁵. ¹Unit of Endocrinology, University Campus Bio-Medico, Italy, ²Unit of Endocrinology and Metabolic Diseases, CTO A. Alesini Hospital, University Tor Vergata, Italy, ³Department of Endocrinology, San Giovanni Addolorata Hospital, Italy, ⁴Thyroid and Metabolic Bone Diseases Center, Santa Maria Goretti Hospital, Italy, ⁵Unit of Geriatric, University Campus Bio-Medico, Italy
Disclosures: Anda Mihaela Naciu, None

1:15 pm
FRI-420

Microstructural analysis of subchondral trabecular bone in patients with osteoarthritis of the knee using second-generation high-resolution peripheral quantitative computed tomography (HR-pQCT)

*Kazuteru Shiraishi¹, Ko Chiba¹, Narihiro Okazaki¹, Kazuaki Yokota¹, Makoto Osaki¹. ¹Department of Orthopedic Surgery, Nagasaki University Graduate School of Biomedical Sciences, Japan
Disclosures: Kazuteru Shiraishi, None

1:20 pm
FRI-204

First Report of Burosumab (Anti-FGF23 Monoclonal Antibody) for Rickets Complicating HRAS-Associated Cutaneous Skeletal Hypophosphatemia Syndrome

*Pamela Smith², Susan Bayliss², Marwan Shinawi², William McAlister², Ana Maria Arbelaez², Gary Gottesman³, Valerie Wollberg³, Michael Whyte³, Jeffrey Sugarman⁴. ¹University of Arizona College of Medicine - Phoenix, United States, ²Washington University School of Medicine in St. Louis, United States, ³Shriners Hospitals for Children - St. Louis, United States, ⁴University of California - San Francisco, United States
Disclosures: Pamela Smith, None

1:25 pm **PDGF-BB Secreted by Pre-Osteoclasts Drives Subchondral bone Angiogenesis in OA**
FRI-421 **Joints**

*Weiping Su¹, Xiannan Liu¹, Qi Sun¹, Xu Cao¹, Mei Wan¹. ¹Department of Orthopaedic Surgery, United States

Disclosures: Weiping Su, None

1:30 pm **Deficiency of mesenchymal miR-204/miR-211 induces multifaceted pathologic changes**
FRI-424 **of osteoarthritis**

*Lan Zhao¹, Jian Huang¹, Yunshan Fan¹, Lifan Liao¹, Di Chen¹. ¹Department of Orthopedic Surgery, Rush University Medical Center, United States

Disclosures: Lan Zhao, None

POSTER SESSION II

12:30 pm - 2:30 pm

**Orange County Convention Center
West Hall C**

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23.

ADULT METABOLIC BONE DISORDERS

SUN-9 **Neurogenic heterotopic ossification in post intensive care rehabilitation unit: a matter of degree?**

*Vincent T. Carpentier¹, Marjorie Salga¹, Pierre Meunier¹, Louis Deversnay¹, François Genêt¹, Julie Paquereau¹. ¹Department of Physical Medicine & Rehabilitation, Raymond Poincaré Hospital, AP-HP, France

Disclosures: Vincent T. Carpentier, None

SUN-10 **Establishment of Biomarkers for Antiresorptives-related Osteonecrosis of the Jaw: In vivo and preliminary clinical results**

*Jing-Wen Li¹, Jin-Woo Kim¹, Sun-Jong Kim¹. ¹Ewha Womans University Medical Center, Republic of Korea

Disclosures: Jing-Wen Li, None

SUN-11 **The utility of SRS/SRPET and systemic FGF23 venous sampling for tumor localization in 20 consecutive tumor-induced osteomalacia cases**

*Minae Koga¹, Hajime Kato¹, Nobuaki Ito¹, Yuka Kinoshita², Seiji Fukumoto³. ¹Division of Nephrology and Endocrinology, The University of Tokyo Hospital, Japan, ²Division of Nephrology and Endocrinology, The University of Tokyo Hospital, Japan, ³Fujii Memorial Institute of Medical Sciences, Institute of Advanced Medical Sciences, Tokushima University, Japan

Disclosures: Minae Koga, None

SUN-12 **Vitamin D and Acute Respiratory Infections - The PODA Trial**

*mageda mikhail¹, john aloia¹, shahidul islam¹. ¹nyu winthrop hospital, United States

Disclosures: mageda mikhail, None

SUN-13 **Gestational hypercalcemia: Prevalence and biochemical profile**

*Inez Schoenmakers¹, Shereen Baban¹, Isabelle Piec¹, Darrell Green¹, Christopher Washbourne¹, Jonathan Tang¹, William D. Fraser¹, Linnea Bärebring², Hanna Augustin².

¹University of East Anglia, United Kingdom, ²University of Gothenburg, Sweden

Disclosures: Inez Schoenmakers, None

- SUN-14** **Effect of obesity on bone microstructure and strength following parathyroidectomy in primary hyperparathyroidism.**
 *Donovan Tay¹, Natalie Cusano², Mishaela Rubin³, John Williams³, Sanchita Agarwal³, Rukshana Majeed³, Beatriz Omeragic³, John Bilezikian³, Gaia Tabacco⁴. ¹Department of Medicine, Sengkang General Hospital, Singapore, ²Department of Medicine, Division of Endocrinology, Lenox Hill Hospital, United States, ³Department of Medicine, Division of Endocrinology, College of Physicians & Surgeons, Columbia University, United States, ⁴University Campus Bio-Medico, Italy
Disclosures: Donovan Tay, None
- SUN-15** **Fourier Transform Infrared Spectroscopy in the Examination of Renal Osteodystrophy and Kidney Transplantation**
 *Xiaoyu Tong¹. ¹Kuopio Musculoskeletal Research Unit, Finland
Disclosures: Xiaoyu Tong, None

BIOMECHANICS AND BONE QUALITY

- SUN-40** **Strontium treatment has synergistic effects with PTH as evaluated in OVX rats**
 *Patrick Ammann¹, Isabelle Badoud². ¹Division of Bone Diseases, department of Medicine, Switzerland, ²Division of bone Diseases, Department of Medicine, Switzerland
Disclosures: Patrick Ammann, servier, Grant/Research Support
- SUN-41** **Statistical shape modeling of the fractured and non-fractured scaphoid bone based on HR-pQCT images**
 *Melissa S.A.M. Bevers¹, Anne M. Daniëls², Caroline E. Wyers³, Emmanuel A. Audenaert⁴, Bert van Rietbergen⁵, Piet P.M.M. Geusens⁶, Sjoerd Kaarsemaker⁷, Heinrich M.J. Janzing⁸, Pascal F.W. Hannemann⁹, Martijn Poeze¹⁰, Joop P.W. van den Bergh¹¹. ¹Department of Biomedical Engineering, Eindhoven University of Technology, Netherlands, ²Department of Surgery, VieCuri Medical Centre; NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University, Netherlands, ³Department of Internal Medicine, VieCuri Medical Centre; NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University; Department of Internal Medicine, Maastricht University Medical Centre, Netherlands, ⁴Department of Orthopedic Surgery and Traumatology, Ghent University Hospital; Department of Electromechanics, Op3Mech research group, University of Antwerp, Belgium, ⁵Department of Biomedical Engineering, Eindhoven University of Technology; Department of Orthopaedic Surgery, Research School CAPHRI, Maastricht University Medical Centre, Netherlands, ⁶Department of Internal Medicine, Maastricht University Medical Centre; Faculty of Medicine, Hasselt University, Netherlands, ⁷Department of Orthopaedic Surgery, VieCuri Medical Centre, Netherlands, ⁸Department of Surgery, VieCuri Medical Centre, Netherlands, ⁹Department of Surgery and Trauma Surgery, Maastricht University Medical Centre, Netherlands, ¹⁰NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University; Department of Surgery and Trauma Surgery, Maastricht University Medical Centre, Netherlands, ¹¹Department of Internal Medicine, VieCuri Medical Centre; NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University; Department of Internal Medicine, Maastricht University Medical Centre; Hasselt University, Netherlands
Disclosures: Melissa S.A.M. Bevers, None
- SUN-42** **Bone Quality In Postmenopausal Women With Severe Osteoporosis**
 *Federica Biamonte¹, Jessica Pepe¹, Luciano Colangelo¹, Piergianni Biondi¹, Maurizio Angelozzi¹, Salvatore Minisola¹, Cristiana Cipriani¹, Luciano Nieddu². ¹Department of Internal Medicine and Medical Disciplines, Sapienza University of Rome, Italy, ²Faculty of Economics, UNINT University, Italy
Disclosures: Federica Biamonte, None
- SUN-43** **Cortical Bone Mechanics Technology Detects Collagen-Mediated Degradation of Cadaveric Human Ulna Bending Stiffness**
 *Sarah Warnock¹, Erica Custer¹, Laura Jackam¹, Alyssa McCarthy¹, Erin Stewart¹, Anne Loucks¹, Lyn Bowman². ¹Ohio University, United States, ²AEIOU Scientific, LLC, United States
Disclosures: Sarah Warnock, None

- SUN-44** **Short Duration of Type 1 Diabetes Does Not Alter Material Properties in Juvenile Mice**
 *Amy Creecy¹, Jennifer Hatch¹, Joseph Wallace¹, John Damrath². ¹IUPUI, United States, ²Purdue University, United States
Disclosures: Amy Creecy, None
- SUN-45** **Superior Detection of Scaphoid Fractures with High Resolution peripheral Quantitative Computed Tomography Compared to Conventional CT**
 *Anne M. Daniels¹, Sander Sassen¹, Joop P. van den Bergh¹, Caroline E. Wyers², Bert van Rietbergen², Sjoerd Kaarsemaker², Heinrich M.J. Janzing², Piet P.M.M. Geusens³, Pascal F.W. Hannemann⁴, Martijn Poeze⁴. ¹VieCuri MC, Netherlands, ²VieCuri MC, Netherlands, ³Maastricht University Medical Centre, Netherlands, ⁴Maastricht University MC, Netherlands
Disclosures: Anne M. Daniels, None
- SUN-46** **Combination Therapy of Teriparatide and Anti-RANKL Monoclonal Antibody Increases Bone Mass and Promotes Bone Regeneration of Glucocorticoid-Induced Osteoporosis in Mice.**
 *Yuki Etani¹, Gensuke Okamura¹, Kosuke Ebina¹, Makoto Hirao¹, Akira Miyama¹, Hideki Yoshikawa¹, Kenji Takami². ¹None, Japan, ²NONE, Japan
Disclosures: Yuki Etani, None
- SUN-47** **Tibial macro- and microstructure adaptations to prolonged arduous military training in women**
 *Julie Greeves¹, Rebecca Double¹, Sophie Wardle¹, Thomas O'Leary¹, Robert Gifford². ¹HQ Army, UK Ministry of Defence, United Kingdom, ²University of Edinburgh, United Kingdom
Disclosures: Julie Greeves, None
- SUN-48** **Exploration of functional co-variation within the human rib**
 *Ranee Hunter¹, Zac Haverfield¹, Amanda Agnew¹, Sven Holcombe², Karen Briley³. ¹Skeletal Biology Research Laboratory, The Ohio State University, United States, ²Morphomics Analysis Group, University of Michigan, United States, ³Wright Center of Innovation in Biomedical Imaging, United States
Disclosures: Rane Hunter, None
- SUN-49** **Acoustically stimulated electric polarization in osteoporotic bone**
 *Yoshitsugu Kojima¹, Nobuo Niimi¹, Kenji Ikushima², Yutaka Yabe³, Yoshihiro Hagiwara³. ¹Nippon Sigmax Co., Ltd., Japan, ²Tokyo University of A & T, Japan, ³Tohoku University, Japan
Disclosures: Yoshitsugu Kojima, Nippon Sigmax Co., Ltd., Speakers' Bureau
- SUN-50** **The missense mutations p.Met16Leu, p.Ala41Thr, p.Tyr74Phe and p.Arg120Leu in DKK1 affect its inhibitory capacity**
 *Núria Martínez-Gil¹, Neus Roca-Ayats², Daniel Grinberg², Susanna Balcells², Natàlia Garcia-Giralt³, Wim Van Hul⁴, Xavier Nogués⁵, Leonardo Mellibovsky⁵, Adolfo Díez-Pérez⁵. ¹Department of Genetics, Microbiology and Statistics, Facultat de Biologia, Universitat de Barcelona, Centro de Investigación Biomédica en Red de Enfermedades Raras (CIBERER), ISCIII, IBUB, IRSJD, Spain, ²Department of Genetics, Microbiology and Statistics, Facultat de Biologia, Universitat de Barcelona, Centro de Investigación Biomédica en Red de Enfermedades Raras (CIBERER), ISCIII, IBUB, IRSJD, Spain, ³Musculoskeletal Research Group, IMIM (Hospital del Mar Medical Research Institute), Centro de Investigación Biomédica en Red en Fragilidad y Envejecimiento Saludable (CIBERFES), ISCIII, Spain, ⁴Center of Medical Genetics, University of Antwerp & Antwerp University Hospital, Prins Boudewijnlaan 43, Edegem, 2650, Belgium, ⁵Musculoskeletal Research Group, IMIM (Hospital del Mar Medical Research Institute), Centro de Investigación Biomédica en Red en Fragilidad y Envejecimiento Saludable (CIBERFES), ISCIII, Spain
Disclosures: Núria Martínez-Gil, None

- SUN-51 Sex-Specific Difference in Local Regions of Bone Microstructure Best Predict Strength in the Proximal Femur**
 *Daniella Patton¹, Erin Bigelow¹, Robert Goulet¹, Sean Carroll¹, Stephen Schlecht¹, Karl Jepsen¹, Benjamin Provencher², Nicolas Piche², Mathieu Gendron², Mike Marsh², Todd Bredbenner³. ¹University of Michigan, United States, ²Object Research Systems, Canada, ³University of Colorado Colorado Springs, United States
Disclosures: Daniella Patton, None
- SUN-52 Non-invasive near infrared spectroscopic method for bone quality assessment in osteogenesis imperfecta**
 *No'ad Shanas¹, William Querido¹, Nancy Pleshko¹, Elizabeth Yonko², Erin Carter², Cathleen Raggio². ¹Department of Bioengineering, Temple University, Philadelphia, PA, United States, ²Department of Pediatric Orthopedic Surgery, Hospital for Special Surgery, New York, NY, United States
Disclosures: No'ad Shanas, None
- SUN-53 A Col1a2 Mutation Reveals Bone Fragility, Hyperelasticity of Skin and Degeneration of Articular Cartilage in Mice**
 *Sotcheadt Sim¹, Eric Quenneville¹, Martin Garon¹, Andrew Blease², Paul Keith Potter³. ¹Biomomentum Inc., Canada, ²MRC Harwell Institute, United Kingdom, ³Oxford Brookes University, United Kingdom
Disclosures: Sotcheadt Sim, Biomomentum Inc., Other Financial or Material Support
- SUN-54 Evaluation of the Influence of Variation in Mineralized Collagen Fibril Orientation between Lamellae on Mechanical Behavior of Bone Using Multiscale Finite Element Modeling**
 *Yaothui Wang¹, Ani Ural¹. ¹Villanova University, United States
Disclosures: Yaothui Wang, None
- SUN-55 Effect of tissue heterogeneity on micromechanics of the trabecular bone as examined by in vivo microCT-based DVC and FEA**
 *Changhao Zhang¹, Youjun Liu¹, Haisheng Yang¹. ¹Beijing University of Technology, China
Disclosures: Changhao Zhang, None
- SUN-56 Precision of Bone Strength Estimation using HR-pQCT-Based Homogenized Finite Element Analysis**
 *Denis Schenk¹, Andrea Mathis¹, Philippe Zysset¹, Kurt Lippuner². ¹ARTORG Center for Biomedical Engineering Research, University of Bern, Switzerland, ²Department of Osteoporosis, Inselspital, Bern Univ. Hospital, University of Bern, Switzerland
Disclosures: Denis Schenk, None

BONE ACQUISITION AND PEDIATRIC BONE DISORDERS

- SUN-77 Heterozygous Mutation in WNT1 gene in Brothers with Early-Onset Osteoporosis**
 *Mona Al Mukaddam¹, Staci Kallish², Anna Raper², Stephanie Asher², Amna N Khan³. ¹University of Pennsylvania, United States, ²University of Pennsylvania, United States, ³University of Pennsylvania, United States
Disclosures: Mona Al Mukaddam, None
- SUN-78 Bone Density in Children and Young Adults with Type 2 Diabetes**
 *Joseph Kindler¹, Babette Zemel¹, Philip Khoury², Elaine Urbina². ¹Children's Hospital of Philadelphia, United States, ²Cincinnati Children's Hospital Medical Center, United States
Disclosures: Joseph Kindler, None
- SUN-79 Adult height of patients with achondroplasia treated with growth hormone**
 *Takuo Kubota¹, Hirofumi Nakayama¹, Kei Miyata¹, Yasuki Ishihara¹, Shinji Takeyari¹, Kenichi Yamamoto¹, Yukako Nakano¹, Makoto Fujiwara¹, Yasuhisa Ohata¹, Taichi Kitaoka¹, Keiichi Ozono¹. ¹Department of Pediatrics, Osaka University Graduate School of Medicine, Japan
Disclosures: Takuo Kubota, Novo Nordisk Pharma, Other Financial or Material Support

- SUN-80** **Determining Bone Parameter Percentile Curves for Japanese Adolescents**
 *Saki Yamanaka¹, Hiromi Ishida¹, Kazuhiro Uenishi¹. ¹Kagawa Nutrition University, Japan
Disclosures: Saki Yamanaka, None

BONE INTERACTIONS WITH MUSCLE AND OTHER TISSUES

- SUN-98** **Correction of muscle dysfunction by osteocalcin in sarcopenia**
 *Julian Meyer Berger¹, Logan Schulz¹, Gerard Karsenty¹. ¹Columbia University Medical Center, United States
Disclosures: Julian Meyer Berger, None
- SUN-99** **RANKL is a novel regulator of male fertility**
 *Martin Blomberg Jensen¹, Anne Jørgensen¹, Christine Hjort Andreassen¹, ida Boisen¹, Peter Schwarz¹, Anders Juul¹, Roland Baron², beate Lanske². ¹Rigshospitalet, Denmark, ²Harvard University, United States
Disclosures: Martin Blomberg Jensen, None
- SUN-100** **Osteocytic peri-lacunar remodeling and angiogenesis in lactating mice treated with osteoprotegerin (OPG)**
 *Lisa Cruz-Aviles¹, Pamela Dann¹, Jackie Fretz¹, Steven Tommasini¹, John Wysolmerski¹. ¹Yale School of Medicine, United States
Disclosures: Lisa Cruz-Aviles, None
- SUN-101** **Lack of osteocytic-miR21 promotes skeletal muscle mass growth in a sex-specific manner**
 *Alyson Essex¹, Hannah Davis², Padmini Desolthate², Andrea Bonetto³, Lilian Plotkin⁴. ¹Indiana University School of Medicine Department of Anatomy and Cell Biology, Indiana Center for Musculoskeletal Health, United States, ²Indiana University School of Medicine Department of Anatomy and Cell Biology, United States, ³Indiana University School of Medicine Department of Surgery, Indiana Center for Musculoskeletal Health, United States, ⁴Indiana University School of Medicine Department of Anatomy and Cell Biology, Indiana Center for Musculoskeletal Health, Roudebush Veterans Administration Medical Center, United States
Disclosures: Alyson Essex, None
- SUN-102** **Prx1Cre is expressed early in brain development and in adult brain.**
 *Carolina Figueroa¹, Victoria DeMambro¹, Anyonya Guntur¹, Patrizia Stohn¹, Arturo Hernandez¹, Clifford Rosen¹, Mark Horowitz². ¹Maine Medical Center Research Institute, United States, ²Department of Orthopaedics and Rehabilitation, Yale University School of Medicine, United States
Disclosures: Carolina Figueroa, None
- SUN-103** **Total bioactive VEGF-A ELISA – a high sensitivity immunoassay**
 *Andreea Ana-Maria Suci¹, Elisabeth Gadermaier¹, Jacqueline Wallwitz¹, Gottfried Himmler¹, Gabriela Berg², Annegret Bitzer². ¹The Antibody Lab GmbH, Austria, ²Biomedica Medizinprodukte GmbH, Austria
Disclosures: Andreea Ana-Maria Suci, None
- SUN-104** **Zoledronic acid improves muscle function in mice treated with chemotherapy**
 *Brian Hain¹, Baptiste Jude¹, Haifang Xu¹, Dallas Smuin¹, Edward Fox¹, John Elfart¹, David Waning¹. ¹Penn State College of Medicine, United States
Disclosures: Brian Hain, None
- SUN-105** **The role of Fam20C on the tooth dentin formation**
 *Katsutoshi Hirose¹, Yu Usami¹, Kohei Naniwa¹, Kaori Oya¹, Satoru Toyosawa¹, Toshihisa Komori². ¹Osaka University Graduate School of Dentistry, Japan, ²Nagasaki University Graduate School of Biomedical Sciences, Japan
Disclosures: Katsutoshi Hirose, None

- SUN-106 Bowel Inflammation Measured by [18F] FDG Correlates with Hip and Spine CT Data in Healthy Subjects**
 *Brandon Jones¹, David Gelston¹, Jennifer Vazquez¹, Olivia Sorci¹, Chamith Rajapakse¹.
¹University of Pennsylvania, United States
Disclosures: Brandon Jones, None
- SUN-107 Opioids Paradoxically Exacerbate Fracture Pain Despite Evidence of Bone Union**
 *Melissa Kacena¹, Zachary Gunderson¹, Aamir Tucker¹, Natalie Taylor-Nguyen¹, Peter Malicky¹, Rachel Blosser¹, Fletcher White¹. ¹Indiana University School of Medicine, United States
Disclosures: Melissa Kacena, None
- SUN-108 Heat-killed Lactobacillus reuteri Can Decrease Alveolar Bone Resorption On Induced Periodontitis In Rats**
 *Renata Moraes¹, Carlos Matheus Lescura¹, Jaqueline Ribeiro¹, Luma Collino¹, Giovanna Lotto¹, Ana Lia Anbinder¹. ¹São Paulo State University (Unesp), Institute of Science and Technology, Brazil
Disclosures: Renata Moraes, None
- SUN-109 Modulators of Fam210a and effects of Fam210a on myoblastic differentiation and degradation**
 *Ken-ichiro Tanaka¹, Ippei Kanazawa¹, Toshitsugu Sugimoto¹, J Brent Richards², David Goltzman³. ¹Internal Medicine 1, Shimane University Faculty of Medicine, Japan, ²Departments of Medicine, Human Genetics, Epidemiology and Biostatistics, McGill University, Jewish General Hospital, Canada, ³Division of Endocrinology, Department of Medicine, McGill University, Canada
Disclosures: Ken-ichiro Tanaka, None
- SUN-110 Elucidating the crosstalk among lncRNAs, microRNAs and mRNAs in the bone metabolism related genes associated with Coronary Vascular Calcification in elderly women cohort of the São Paulo Aging and Health Study**
 *Zofia Wicik¹, Levi H Jales Neto¹, Liliam Takayama¹, Valeria F Caparbo¹, Georgea H Fernandes¹, Rosa MR Pereira¹, Neuza Lopes², Luis FE Guzman², Alexandre C Pereira². ¹Rheumatology Division, Hospital das Clinicas HCFMUSP, Universidade de Sao Paulo, Brazil, ²Heart Institute (INCOR), Hospital das Clinicas HCFMUSP Faculdade de Medicina da Universidade de Sao Paulo, Brazil
Disclosures: Zofia Wicik, None

BONE MARROW MICROENVIRONMENT AND NICHES

- SUN-128 Mechanosensitivity of Suspension Cells and Its Potential Clinical Implication for Bioprocessing**
 *M. Ete Chan¹, Vihitaben Patel¹, Clinton Rubin¹. ¹Stony Brook University, United States
Disclosures: M. Ete Chan, None
- SUN-129 Pretreatment with the antidiabetic drug metformin alters the bone microenvironment to increase myeloma tumour burden and bone disease in vivo**
 *Beatriz Gamez¹, Emma V Morris¹, Christina J Turner¹, Sam WZ Olechnowicz², Aneka Sowman², Claire M Edwards³. ¹Nuffield Department of Surgical Sciences. University of Oxford, United Kingdom, ²Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences. University of Oxford, United Kingdom, ³Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences. Nuffield Department of Surgical Sciences. University of Oxford, United Kingdom
Disclosures: Beatriz Gamez, None
- SUN-130 Purified Human Bone Marrow Stromal Cells Co-Expressing CD146, CD271, and LEPR Show In Vivo Trilineage Differentiation Characteristic of Skeletal Stem Cells**
 *Randall Merling¹, Pamela Robey¹, Sergei Kuznetsov², Joseph Featherall², Natasha Cherman². ¹Skeletal Biology Section, National Institute of Dental and Craniofacial Research, National Institutes of Health, United States, ² Skeletal Biology Section, National Institute of Dental and Craniofacial Research, National Institutes of Health, United States
Disclosures: Randall Merling, None

SUN-131

Specificity of Osteal Macrophage Efferocytosis

*Laura Zweifler¹, Amy Koh¹, Veeral Patel¹, Yuji Mishina¹, Laurie McCauley¹. ¹University of Michigan, United States

Disclosures: Laura Zweifler, None

BONE TUMORS AND METASTASIS

SUN-148

Integrin $\beta 6$ upregulation by the Prostate Tumor-secreted Protein Mindin is Associated with Increased Adhesion of Cancer Cells to the Bone Microenvironment

*Luis Alvarez Carrion¹, Irene Gutierrez-Rojas¹, Juan A Ardura¹, Veronica Alonso¹, Peter A Friedman². ¹Bone Physiopathology laboratory, Applied Molecular Medicine Institute (IMMA), Universidad San Pablo-CEU, CEU Universities, Campus Monteprincipe, 28925 Alcorcón, Madrid, Spain., Spain, ²Laboratory for G Protein-Coupled Receptor Biology, Department of Pharmacology & Chemical Biology, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania 15261, USA., United States

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SUN-149

Cholesterol promotes myeloma cell viability and increases bone marrow myeloma tumour burden in vivo

*Gamez Beatriz¹, Seint T Lwin¹, Emma V Morris², Christina J Turner², Sam WZ Olechnowicz³, Sowman Aneka³, Matthew T Drake⁴, Claire M Edwards⁵. ¹Nuffield Department of Surgical Sciences. University of Oxford, United Kingdom, ²Nuffield Department of Surgical Sciences. University of Oxford., United Kingdom, ³Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences. University of Oxford., United Kingdom, ⁴Division of Endocrinology, Department of Medicine, Mayo Clinic College of Medicine, United States, ⁵Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences. Nuffield Department of Surgical Sciences. University of Oxford, United Kingdom

Disclosures: Gamez Beatriz, None

SUN-150

Investigating the Role of ATRX in Osteosarcoma Progression

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SUN-151

Artificial Intelligence (AI) Can Detect Bone Marrow Lesions (BMLs) on Plain Radiographs

*Hans P. Dimai¹, Tiago Paixao², Zsolt Bertalan², Richard Ljuhar², Christoph Goetz², Davul Ljuhar³, Stefan Nehrer⁴, Astrid Fahrleitner-Pammer⁵. ¹Medical UNiversity of Graz, Division of Endocrinology & Diabetology, Austria, ²Image Biopsy Lab, Austria, ³Braincon, Austria, ⁴Donau Universität Krems, Center for Regenerative Medicine, Austria, ⁵Medical University of Graz, Division of Endocrinology & Diabetology, Austria

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SUN-152

Characterization of TIE2 Function in Cancer Cell Dormancy and Bone Metastases

*Florian Drescher¹, Salvador Dueñas¹, Patricia Juarez¹, Alexei Licea-Navarro¹, Pierrick Fournier¹, Felipe Olvera-Rodriguez². ¹Biomedical Innovation Department, CICESE, Mexico, ²Instituto de Biotecnología, UNAM, Mexico

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SUN-153

Understanding the action of RAR γ agonists on human osteochondroma explants.

*Sonia Garcia¹, Hongying Tian², Akiko Suzuki², Vincent Ng², Masahiro Iwamoto², Motomi Enomoto-Iwamoto², Ashley Cellini³, John E. Herzenberg⁴. ¹Molecular Medicine Graduate Program and Department of Orthopaedics, School of Medicine, University of Maryland, Baltimore, United States, ²Department of Orthopaedics, School of Medicine, University of Maryland, Baltimore, United States, ³Pathology Biorepository Shared Service Core, School of Medicine, University of Maryland, Baltimore, United States, ⁴Department of Orthopaedics, University of Maryland, Baltimore and Pediatric Orthopaedics, Sinai Hospital, United States

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- SUN-154 Prostate cancer bone metastasis model for preclinical evaluation of radiopharmaceuticals**
 *Tiina E Kähkönen¹, Mari I Suominen¹, Jenni HE Mäki-Jouppila¹, Jussi M Halleen¹, Jenni Bernoulli¹. ¹Pharmatest Services, Finland
Disclosures: Tiina E Kähkönen, None
- SUN-155 Factors Released from Highly Bone-metastatic Cancer Cells Play a Critical Role in Osteolysis**
 *Haemin Kim¹, Hyung Joon Kim², Bongjun Kim³, Zang Hee Lee³, Hong-Hee Kim³, Sang Il Kim⁴, Junho Chung⁴, Dong-Young Noh⁴. ¹Weill Cornell Medicine/Hospital for Special Surgery, United States, ²Pusan National University School of Dentistry, Republic of Korea, ³Seoul National University School of Dentistry, Republic of Korea, ⁴Seoul National University College of Medicine, Republic of Korea
Disclosures: Haemin Kim, None
- SUN-156 Runx2 Mediated Microtubule Stabilization Promotes Autophagy in Bone Metastatic Breast Cancer Cells**
 *Ahmad Othman¹, Marcus Winogradzki¹, Di Chen¹, Jitesh Pratap¹, Manish Tandon². ¹Rush University Medical Center, United States, ²KBI Pharma, United States
Disclosures: Ahmad Othman, None
- SUN-157 Bone matrix miR-125b suppresses the progression of osteolytic bone metastasis by targeting not only osteoclasts but also cancer cells**
 *Nushrat Sarmin¹, Tomoko Minamizaki¹, Yuji Yoshiko¹, Mentari Zaurasari². ¹Department of Calcified Tissue Biology, Graduate School of Biomedical & Health Sciences, Hiroshima University, Japan, ²Faculty of Dentistry, Hiroshima University, Japan
Disclosures: Nushrat Sarmin, None
- SUN-158 Determining the impact of mechanical loading on the arrival of prostate cancer in bone**
 *Hector Arredondo¹, Alexandria Sprules¹, Colby Eaton¹, Ning Wang¹. ¹Department of Oncology & Metabolism, University of Sheffield, United Kingdom
Disclosures: Hector Arredondo, None
- SUN-159 The bone microenvironment drives up-regulation of the pentose phosphate pathway in prostate cancer, promoting a pro-antioxidant environment and regulating tumour growth and chemosensitivity.**
 *Jessica Whitburn¹, Srinivasa Rao¹, Freddie Hamdy¹, Claire Edwards¹, Sho Tabata², Akiyoshi Hirayama², Tomoyoshi Soga². ¹University of Oxford, United Kingdom, ²Keio University, Japan
Disclosures: Jessica Whitburn, None
- SUN-160 Tetrahedron DNA nanostructure, a novel drug vehicle for tumor therapy.**
 *Xueping Xie¹, Yunfeng Lin¹. ¹State Key Laboratory of Oral Diseases, National Clinical Research Center for Oral Diseases, West China Hospital of Stomatology, Sichuan University, China
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CHONDROCYTES

- SUN-183 Inflammation-Induced Metabolic Reprogramming in Chondrocytes is a Therapeutic Target in Joint Disease**
 *Manoj Arra¹, Gaurav Swarnkar¹, Regis O'Keefe¹, Jie Shen¹, Yousef Abu-Amer¹. ¹Washington University School of Medicine, United States
Disclosures: Manoj Arra, None
- SUN-184 Hyperactivation of IL36 α signaling induces OA-like phenotype, pain and upregulated pain-associated gene expression in DRG**
 *Fang Fang¹, Tieshi Li¹, Alessandra Esposito¹, Marissa Cruz¹, Anna Spagnoli¹, Xin Jin². ¹University of Nebraska Medical Center, United States, ²Department of Orthopaedics, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, China
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- SUN-185 Inhibition of Osteoarthritis Progression by Blocking Connexin Channels**
 *Rui Hua¹, Yi Tian¹, Manuel Riquelme¹, Liang Ma¹, Sumin Gu¹, Jean X. Jiang¹. ¹Department of Biochemistry and Structural Biology, UT Health San Antonio, United States
Disclosures: Rui Hua, None
- SUN-186 Neuropeptide Y Acts Directly in the Periphery on Cartilage Homeostasis and Exacerbates Progression of Osteoarthritis through NPY2R**
 *xiaomin kang¹, zhuang qian¹, xinxin jin¹, shufang wu¹, hongzhi sun². ¹1.Center for Translational Medicine, the First Affiliated Hospital of Xi'an Jiaotong University School of Medicine, China, ²2.Key Laboratory of Environment and Genes Related to Diseases, Ministry of Education, Medical School of Xi'an Jiaotong University, China
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- SUN-187 Conditional Disruption of TCF7L2 in Chondrocytes Produces Contrasting Effects on Cortical and Trabecular Bone Phenotypes in Mice**
 *Chandrasekhar Kesavan¹, Subburaman Mohan¹. ¹JLP VA Medical Center, United States
Disclosures: Chandrasekhar Kesavan, None
- SUN-188 P2Y Purinoceptor 2 Positively Regulates Cyclic Tension Strain-induced ECM Anabolism In Chondrogenic Cells**
 *Di Liu¹, Masako Naito², Natsuko Tanabe³, Naoto Suzuki⁴. ¹Shandong Provincial Key Laboratory of Oral Tissue Regeneration, Department of Prosthodontics, School of Stomatology, Shandong University, China, ²Department of Anatomy, Nihon University School of Dentistry, Japan, ³Division of Functional Morphology, Dental Research Center, Department of Biochemistry, Nihon University School of Dentistry, Japan, ⁴Division of Functional Morphology, Dental Research Center, Department of Biochemistry, Nihon University School of Dentistry, Japan
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- SUN-189 Detection of knee stress prior to the onset of overt articular cartilage damage using fluorescence-based cryohistology of non-decalcified tissue sections.**
 *David Rowe¹, Xiaonan Xin¹, Li Chen¹. ¹University of Connecticut Health, United States
Disclosures: David Rowe, None
- SUN-190 Fibrocartilage Stem Cells derived from Human Condylar Surface Revealed Distinct Chondrogenic Capacity Regulated by SOX9.**
 *Qing Yin¹, Songsong Zhu¹, Ruiye Bi¹. ¹West China Hospital of Stomatology, Sichuan University, China
Disclosures: Qing Yin, None

CLINICAL CASE REPORT

- SUN-209 A Possible Case of Larsen Syndrome in a Young Man with Severe Kyphoscoliosis, Reduced Bone Mass and Valvular Heart Disease**
 *cheng cheng¹, kelly wentworth¹, edward hsiao¹, dolores shoback¹, alekos theologis¹. ¹UCSF, United States
Disclosures: cheng cheng, None
- SUN-210 Successful Bisphosphonate Therapy for Vertebral Avascular Necrosis in an Adolescent with Sickle Cell Disease**
 *Chelsey Grimbly¹, Rose Girgis¹, Aisha Bruce², Jacob L Jaremko³. ¹Division of Pediatric Endocrinology, Department of Pediatrics, University of Alberta, Canada, ²Ihope Division, section Pediatric Hematology, Department of Pediatrics, University of Alberta, Canada, ³Department of Radiology, University of Alberta, Canada
Disclosures: Chelsey Grimbly, None
- SUN-211 The first case of genetically confirmed adult hypophosphatasia in Korean population**
 *Yeonhee Lee¹, Namki Hong¹, Yumie Rhee¹. ¹Department of Internal Medicine, Severance Hospital, Endocrine Research Institute, Yonsei University College of Medicine, Republic of Korea
Disclosures: Yeonhee Lee, None

- SUN-212** **Variability of Bone Disease in HIV Patients: A Case Series**
 *Amita Maibam¹, Madhumathi Rao¹, Florence Lima¹, Marie Monier Faugere¹, Alice Thornton¹, Hartmut Malluche¹. ¹University of Kentucky, United States
Disclosures: Amita Maibam, None
- SUN-213** **Use of Zoledronic Acid for management of Sclerosing Osteomyelitis of the Mandible**
 *Isabel Marciano¹, Hilary Whitlatch². ¹University of Maryland Medical Center, United States, ²University of Maryland Medical Center, United States
Disclosures: Isabel Marciano, None
- SUN-214** **Diagnosis of Genetic Odontohypophosphatasia in an Adult**
 *Eli Miller¹, Amy Iwamaye¹, Glenn Gerhard², Rajesh Jain². ¹Temple University Hospital, United States, ²Lewis Katz School of Medicine at Temple University, United States
Disclosures: Eli Miller, None
- SUN-215** **Clinical Case of low calcium intake combined with pregnancy and lactation leads to low bone mineral density and fracture.**
 *Kristi Tough DeSapri¹. ¹Northwestern University, United States
Disclosures: Kristi Tough DeSapri, None
- SUN-216** **Persistent elevation of markers of bone resorption in a patient who developed multiple spontaneous vertebral fractures two months after a missed dose of Denosumab**
 *Sikarin Upala¹, Sonaina Intiaz¹, Tamara Vokes¹. ¹University of Chicago, United States
Disclosures: Sikarin Upala, None
- SUN-217** **Scurvy: A Largely Forgotten, Yet Still Relevant Cause of Musculoskeletal Disease in Children**
 *David R Weber¹, Inna Hughes¹, Apeksha Chaturvedi¹, Leeann Habben¹, Natasha O'Malley¹, Homaira Rahimi¹, Geoffrey A Weinberg¹. ¹Golisano Children's Hospital, University of Rochester, United States
Disclosures: David R Weber, None
- SUN-218** **Severe Hypercalcemia as Manifestation of Large Granular Lymphocytic Leukemia**
 *Keren Zhou¹, Allison Winter¹, Matt E. Kalaycio¹, Susan E. Williams¹. ¹Cleveland Clinic, United States
Disclosures: Keren Zhou, None

ENERGY METABOLISM, BONE, MUSCLE AND FAT

- SUN-225** **O-glycosylation a Novel Post-Translational Modification of Osteocalcin Increases its Half-life In Vivo**
 *Omar Al Rifai¹, Catherine Julien¹, Denis Faubert¹, Mathieu Ferron¹, Yoshiki Narimatsu², Henrik Clausen². ¹Institut de Recherches Cliniques de Montréal, Canada, ²Department of Cellular and Molecular Medicine, Copenhagen Center for Glycomics and University of Copenhagen, Denmark
Disclosures: Omar Al Rifai, None
- SUN-226** **Sympathetic inhibition prevents but high fat, high protein diet causes bone loss during cold exposure in young C57BL/6J mice**
 *Amy Robbins¹, Christina Tom¹, Rebecca Tutino¹, Miranda Cosman¹, Taylor Spencer¹, Cleo Moursi¹, Rachel Hurwitz¹, Maureen Devlin². ¹University of Michigan, United States, ²UNIVERSITY OF MICHIGAN, United States
Disclosures: Amy Robbins, None
- SUN-227** **Measurement of Uncarboxylated Osteocalcin in Humans Using a Novel Immunoassay Reveals Association with Insulin Sensitivity and Diabetes**
 *Julie Lacombe¹, Omar Al Rifai¹, Rémi Rabasa-Lhoret¹, Mathieu Ferron¹, Anne-Frédérique Turcotte², Claudia Gagnon², André Carpentier³, Gerard Karsenty⁴. ¹IRCM, Canada, ²Université Laval, Canada, ³Université de Sherbrooke, Canada, ⁴Columbia University Medical Center, United States
Disclosures: Julie Lacombe, None

SUN-228 **KLF10 is a novel regulator of TCA cycle metabolism and mediates skeletal muscle cell differentiation and function.**
 *Malayannan Subramaniam¹, Michael Emch¹, Elizabeth Bruinsma¹, Molly Nelson Holte¹, John Hawse¹, Malek Kammoun², Sabine Bensamoun². ¹Mayo Clinic, United States, ²Université de Technologie de Compiègne, France
Disclosures: Malayannan Subramaniam, None

SUN-229 **Longitudinal Study of Obesity Effect on Bone and Marrow Adipose Tissue (MAT) in Skeletally-Mature Mice**
 *Cody McGrath¹, Buer Sen¹, Zhihui Xie¹, Guniz Bas¹, Janet Rubin¹, Maya Styner¹, Gunes Uzer², Xiaopeng Zong³, Samuel W. Reid⁴, Martin Styner⁵. ¹Division of Endocrinology and Metabolism, Department of Medicine, UNC-Chapel Hill, United States, ²Mechanical and Biomedical Engineering Boise State University, United States, ³Biomedical Research Imaging Center, University of North Carolina, United States, ⁴School of Medicine, University of North Carolina, United States, ⁵Department of Computer Science and Psychiatry, University of North Carolina, United States
Disclosures: Cody McGrath, None

GENOMICS, TRANSCRIPTOMICS, PROTEOMICS AND METABOLOMICS OF MUSCULOSKELETAL DISEASE

SUN-243 **Genome-Wide Association Study Reveals Meteorin-like as a Novel Regulator of Whole Bone Strength**
 *Douglas Adams¹, Cheryl Ackert-Bicknell¹, Olivia Hart², Apurva Chitre³, Oksana Polesskaya³, Abraham Palmer³. ¹University of Colorado, United States, ²University of Connecticut, United States, ³University of California - San Diego, United States
Disclosures: Douglas Adams, None

SUN-244 **Identifying pleiotropic SNPs associated with femoral neck BMD and heel BMD estimated by quantitative ultrasound**
 *Pei He¹, Xiang-He Meng², Xu Lin³, Ri-Li Jiang⁴, Hong-Wen Deng⁴. ¹School of Public Health, Medical College of Soochow University, China, ²College of Life Sciences, Hunan Normal University, China, ³Southern Medical University, China, ⁴Department of Biostatistics and Bioinformatics, Tulane University School of Public Health and Tropical Medicine, United States
Disclosures: Pei He, None

SUN-245 **Metabolites Associated with Bone Mineral Density in Chinese Women during Menopause Transition and Beyond**
 *Rui Gong¹, Xu Lin¹, Kuan-Jui Su², Qing Tian², Jonathan Greenbaum², Qi Zhao³, Fengye Lyu⁴, Hongmei Xiao⁵, Jie Shen⁶, Hong-Wen Deng⁷. ¹Department of Endocrinology and Metabolism, The 3rd Affiliated hospital of Southern Medical University Southern Medical University, China, ²Tulane Center of Bioinformatics and Genomics, Department of Global Biostatistics and Data Science, Tulane University School of Public Health and Tropical Medicine, United States, ³Department of Preventive Medicine, College of Medicine, University of Tennessee Health Science Center, United States, ⁴LC-Bio Technologies (Hangzhou) CO.LTD, China, ⁵School of Basic Medical Science, Central South University, China, ⁶Department of Endocrinology and Metabolism, The 3rd Affiliated hospital of Southern Medical University Southern Medical University, China, ⁷Tulane Center of Bioinformatics and Genomics, Department of Global Biostatistics and Data Science, United States
Disclosures: Rui Gong, None

SUN-246 **A Biorepository for Genomic Inquiry within the Shriners Hospitals for Children**
 *Gary S Gottesman¹, Anxhela G Gustafson¹, Vinieth N Bijanki¹, Shannon Terkoski¹, Tristin Morse¹, Fan Zhang¹, Marc Lalande¹, Kamran Shazand¹. ¹Shriners Hospitals for Children, United States
Disclosures: Gary S Gottesman, None

SUN-247

Genetic Risk Scores to Improve Osteoporosis Screening: Validation in External Cohorts

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SUN-248

New insights into the multiorgan alterations caused in mice by the ADO2 CLCN7G213R mutation: an unbiased transcriptome approach

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SUN-249

Prediction of bone mineral density by using various genetic profiling: A comparative analysis in independent samples

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HORMONAL REGULATORS

SUN-267

Delta Like 1(DLK1) is a Possible Mediator of Vitamin D Effects on Bone and Energy Metabolism

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- SUN-268** **Voluntary Wheel Running Partially Compensates for the Effects of Global Estrogen Receptor- α Knockout on Cortical Bone in Young Male Mice**
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- SUN-269** **The effects of estradiol are modulated in a tissue-specific manner in mice with inducible inactivation of ER α after sexual maturation**
 *Helen Farman¹, Lina Lawenius¹, Jianyao Wu¹, Karin Gustafsson¹, Karin Nilsson¹, Cecilia Engdahl¹, Louise Grahnen¹, Sofia Movérare-Skrtic¹, Marie Lagerquist¹, Claes Ohlsson¹, Jan-Åke Gustafsson². ¹Centre for Bone and Arthritis Research at Institute of Medicine, Sahlgrenska Academy at University of Gothenburg, SE-41345 Gothenburg, Sweden, Sweden, ²Center for Medical Innovations, Department of Biosciences and Nutrition at NOVUM, Karolinska Institute, Stockholm, Sweden, Sweden
Disclosures: Helen Farman, None
- SUN-270** **Antimicrobial CAMP/LL-37 is Upregulated by Vitamin D Metabolites in Human Mesenchymal Stromal/Stem Cells**
 *Julie Glowacki¹, Simon Luu¹, Yuan Gao¹, Patrick Nian¹, Shuanhu Zhou¹. ¹Brigham and Women's Hospital, United States
Disclosures: Julie Glowacki, None
- SUN-271** **A Pilot Study of α -KLOTTH Serum Concentrations in CKD Patients using a Highly Sensitive Fluorescence Immunoassay based on Plasmonic Microtiter Plates**
 *Gerhard Hawa¹, Albert Missbichler¹, Linda Sonnleitner². ¹FIANOSTICS GmbH, Austria, ²FIANOSTICS GmbH, Austria
Disclosures: Gerhard Hawa, FIANOSTICS GmbH, Other Financial or Material Support
- SUN-272** **Nutrigenomics of 1,25(OH)2D3 Action in the Intestine: Evidence for a Role of 1,25(OH)2D3 in Manganese Transport**
 *Shanshan Li¹, Jessica De La Cruz¹, Sylvia Christakos¹, Joseph Hur², Oscar Pellon-Cardenas², Michael Verzi², Noah Shroyer³, James Fleet⁴. ¹Rutgers New Jersey Medical School, United States, ²Rutgers University, United States, ³Baylor College of Medicine, United States, ⁴Purdue University, United States
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- SUN-273** **Role of MEK1/2 and MEK5 in melatonin-mediated osteoblastogenesis and osteoclastogenesis and bone formation in vitro and in a Balb(c) calvarial defect model.**
 *Fahima Munmun¹, Paula Witt-Enderby¹, Omair Mohiuddin², Bruce Bunnell², Van Hoang², Matt Burow². ¹Duquesne University School of Pharmacy, United States, ²Tulane University School of Medicine, United States
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- SUN-274** **The Polycomb Protein Bmi1 Plays a Crucial Role in the Prevention of 1,25(OH)2D Deficiency-induced Osteoporosis**
 *Haijian Sun¹, Wanxin Qiao¹, Min Cui¹, Cuicui Yang¹, Jianliang Jin¹, Dengshun Miao¹, David Goltzman². ¹Nanjing Medical University, China, ²McGill University, Canada
Disclosures: Haijian Sun, None
- SUN-275** **SOMATOPAUSE-DRIVEN SENILE OSTEOPOROSIS**
 *Zhongbo Liu¹, Gozde Yildirim¹, Shoshana Yakar¹, Mitchell B Schaffler², Silvana Duran Ortiz², John J Kopchick³. ¹David B. Kriner Dental Center, Department of Basic Science and Craniofacial Biology New York University College of Dentistry New York, NY 10010-4086, United States, ²Department of Biomedical Engineering, City College of New York, New York 10031, United States, ³Edison Biotechnology Institute, and Dept. of Biomedical Sciences, Ohio University, Athens, OH, United States
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MECHANOBIOLOGY

- SUN-293** **Circadian rhythm effect on load-induced bone formation and gene expression in mice**
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Disclosures: Alice Bouchard, None
- SUN-294** **Irisin Treatment Prevents dysregulation of Osteoblast Differentiation and Activity in 3D in vitro bone cocultures exposed to microgravity during the space flight CRS-14 mission**
 *Graziana Colaianne¹, Silvia Concetta Colucci¹, Giacomina Brunetti¹, Maria Grano¹, Giorgio Mori². ¹University of Bari, Italy, ²University of Foggia, Italy
Disclosures: Graziana Colaianne, None
- SUN-295** **Hypergravity and microgravity oppositely controlled the bone and muscle mass in mice**
 *Ryota Ichimaru¹, Tsukasa Tominari¹, Chiho Matsumoto¹, Michiko Hirata¹, Chisato Miyaaura¹, Masaki Inada¹, Dai Shiba². ¹Tokyo University of Agriculture and Technology, Japan, ²JEM Utilization Center, Human Spaceflight Technology Directorate, JAXA, Japan
Disclosures: Ryota Ichimaru, None
- SUN-296** **Osteocyte Wnt/ β -catenin pathway activation upon Mechanical loading is Altered in OVX Mice**
 *Erica Jackson¹, Nuria Lara-Castillo¹, Yixia Xie¹, Mark Johnson¹, Mark Dallas², Mohammed Akhter³. ¹UMKC School of Dentistry, United States, ²UMKC, United States, ³Creighton University, United States
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- SUN-297** **Pulsating Fluid Flow Modulates Bone Cell and Nucleus Morphology - Implications for Bone Cell Function?**
 *Jianfeng Jin¹, Astrid D. Bakker¹, Jenneke Klein-Nulend¹, Joannes A.M. Korfage², Gang Wu³, Richard T. Jaspers⁴. ¹Department of Oral Cell Biology, Academic Centre for Dentistry Amsterdam (ACTA), University of Amsterdam and Vrije Universiteit Amsterdam, Amsterdam Movement Sciences, Netherlands, ²Department of Functional Anatomy, Academic Centre for Dentistry Amsterdam (ACTA), University of Amsterdam and Vrije Universiteit Amsterdam, Amsterdam Movement Sciences, Netherlands, ³Department of Oral Implantology and Prosthetic Dentistry, Academic Centre for Dentistry Amsterdam (ACTA), University of Amsterdam and Vrije Universiteit Amsterdam, Amsterdam Movement Sciences, Netherlands, ⁴Laboratory for Myology, Faculty of Behavioral and Movement Sciences, Vrije Universiteit Amsterdam, Amsterdam Movement Sciences, Netherlands
Disclosures: Jianfeng Jin, None
- SUN-298** **Piezo1 Channel Activation in Osteoblastic Cells under Low-intensity Pulsed Ultrasound Stimulation**
 *Guangdao Zhang¹, Xiaofei Li¹, Lin Wu¹, Yi-Xian Qin¹. ¹Stony Brook University, United States
Disclosures: Guangdao Zhang, None
- SUN-299** **A bispecific soluble receptor fusion protein targeting TNF- α and IL-21 attenuates rheumatoid arthritis**
 *SeungCheon Yang¹, Mi-La Cho², Jin-Sil Park². ¹The Catholic university of Korea, Republic of Korea, ²The Catholic University of Korea, Republic of Korea
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- SUN-300** **Promoting bone formation in Marfan Syndrome through in vivo mechanical loading and sclerostin neutralizing antibody treatment**
 *Elizabeth A. Zimmermann¹, David Bertrand¹, Kerstin Tiedemann¹, Catherine Julien¹, Kyle Kavaseri¹, Svetlana V. Komarova¹, Bettina M. Willie¹, Dieter P. Reinhardt². ¹McGill University & Shriners Hospitals for Children, Canada, ²McGill University, Canada
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MINERAL METABOLISM

SUN-319

Effect of vitamin D supplementation on bone resorption in patients with type 2 diabetes

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SUN-320

Calcium sensing receptor in male germ cells is essential for processes leading to fertilization

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SUN-321

Factors Affecting Bone-Metabolism Markers in Female High-School Students

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SUN-322

Regulation of α -klotho Expression by Dietary Phosphate During Growth Periods

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SUN-323

Lycopene Protects Against Glucocorticoid-Induced Osteoporosis In Mice: Impact On Oxidative Stress And Osteocyte Senescence

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SUN-324

Etelcalcetide decreases PTH-calcium set point without changing maximum and minimum PTH secretion in vivo in mice model of primary hyperparathyroidism

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Disclosures: Yasuo Imanishi, ONO Pharmaceutical Co., Ltd., Grant/Research Support

- SUN-325** **Establishment of model mice of FGF23-related hypophosphatemia induced by iron solution administration.**
 *Mai Kanai¹, Itsuro Endo¹, Yuichi Takashi², Junpei Teramachi³, Hirofumi Tenshin⁴, Masahiro Hiasa⁴, Seiji Fukumoto⁵, Masahiro Abe⁶, Toshio Matsumoto⁷. ¹Department of Chronomedicine, Tokushima University Graduate School of Health Sciences, Japan, ²Department of Endocrinology and Diabetes Mellitus, Fukuoka University Chikushi Hospital, Japan, ³Department of Tissue Regeneration, Tokushima University, Japan, ⁴Department of Orthodontics and Dentofacial Orthopedic, Tokushima University, Japan, ⁵Fujii Memorial Institute of Medical Sciences, Tokushima University, Japan, ⁶Department of Hematology, Endocrinology and Metabolism, Tokushima University, Japan, ⁷Fujii Memorial Institute of Medical Sciences, Tokushima University, Japan
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- SUN-326** **TXNIP participates in GIO bone loss through mitochondrial oxidative phosphorylation pathway**
 *Liao Cui¹, Yilin Mo¹, Yajun Yang¹. ¹Guangdong Medical University, China
Disclosures: Liao Cui, None
- SUN-327** **Regulation of cyclophilin D and mitochondrial permeability transition pore during osteogenic differentiation**
 *Rubens Sautchuk, Jr¹, Brianna Shares¹, Roman Eliseev¹. ¹Center for Musculoskeletal Research, University of Rochester, United States
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- MUSCULOSKELETAL AGING**
- SUN-342** **PAI-1 accelerates sarcopenia and ageing-related osteoporosis.**
 *Aidehamu Aihemaiti¹, Naoki Yamamoto¹, Alkebaier Aobuliksimu¹, Hiroki Ochi¹, Shingo Sato¹, Atsushi Okawa¹, Yoshinori Asou¹, Takuya Oyaizu², Kunikazu Tsuji³, Toshio Miyata⁴. ¹Department of Orthopedics Surgery, Tokyo Medical and Dental University, Japan, ²Department of Orthopedics Surgery, Tokyo Medical and Dental University, Japan, ³Department of Cartilage Regeneration, Tokyo Medical and Dental University, Japan, ⁴Department of Molecular Medicine and Therapy, United Centers for Advanced Research and Translational Medicine, Tohoku University Graduate School of Medicine, Japan
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- SUN-343** **Monomethylfumarate Protects against Ovariectomy-related Changes in Body Composition**
 *Bollag Anna¹, Tianyang Guo¹, Kehong Ding¹, Vivek Choudhary¹, Xunsheng Chen¹, Qing Zhong¹, Jianrui Xu¹, Kanglun Yu¹, Mohamed Awad¹, Mohammed Elsalanty¹, Maribeth Johnson¹, Meghan McGee-Lawrence¹, Carlos Isaacs¹, Wendy Bollag². ¹Augusta University, United States, ²Augusta University; Charlie Norwood VA Hospital, United States
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- SUN-344** **A timed up and go test predicts fracture risk in older women independently of clinical risk factors and bone mineral density**
 *Berit A. M. Larsson¹, Daniel Sundh¹, Kristian F. Axelsson², Anna G. Nilsson³, Mattias Lorentzon⁴. ¹Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, University of Gothenburg, Göteborg Gothenburg, Sweden., Switzerland, ²Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, University of Gothenburg, Göteborg Gothenburg, Sweden. Department of Orthopaedic Surgery, Skaraborg Hospital, Göteborg Skövde, Sweden., Sweden, ³Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, University of Gothenburg, Göteborg Gothenburg, Sweden. Department of Endocrinology, Sahlgrenska University Hospital, Göteborg Gothenburg, Sweden., Sweden, ⁴Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, University of Gothenburg, Göteborg Gothenburg, Sweden. Geriatric Medicine, Sahlgrenska University Hospital, Mölndal, Mölndal, Sweden., Sweden
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SUN-345 **Is low impact physical activity associated with lower limb bone and muscle outcomes? Results from the Hertfordshire Cohort Study**
*Camille Parsons¹, Elaine Dennison¹, Cyrus Cooper¹, Kate Ward¹, Jon Tobias². ¹MRC Lifecourse Epidemiology Unit, University of Southampton, United Kingdom, ²University of Bristol, United Kingdom
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SUN-346 **Postnatal Runx2 deletion causes age-related changes in bone.**
*Ikue Tosa¹, Daisuke Yamada¹, Shunpei Tsukamoto¹, Kenji Kawabe¹, Takeshi Takarada¹, Mitsuaki Ono², Toshitaka Oohashi², Takuo Kuboki³. ¹Department of Regenerative Science, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan, ²Department of Molecular Biology and Biochemistry, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan, ³Department of Oral Rehabilitation and Regenerative Medicine, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan
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MUSCULOSKELETAL DEVELOPMENT

SUN-363 **Gene by environment interactions govern the existence and magnitude of bone response to inhaled air pollution**
*Cheryl L Ackert-Bicknell¹, Dana A Godfrey¹, Robert Maynard¹, Katrina Jew², Candace Wong², David Chalupa², Alison Elder². ¹Center for Musculoskeletal Research, University of Rochester, United States, ²Department of Environmental Medicine, University of Rochester, United States
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SUN-364 **BMD development after the attainment of peak bone mass: A longitudinal study**
*Adam Baxter-Jones¹, Erin Barbour-Tuck¹, Marta Erlandson¹, Stefan Jackowski². ¹University of Saskatchewan, Canada, ²Childrens Hospital Eastern Ontario, Canada
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SUN-365 **Deletion of Phlpp1 in Chondrocytes Enhances Proliferation by Increasing Expression of the PTH Receptor**
*Elizabeth Bradley¹, Earnest Taylor¹, Jennifer Westendorf¹. ¹Mayo Clinic, United States
Disclosures: Elizabeth Bradley, None

SUN-366 **Discoidin domain receptor 1 regulates endochondral ossification through terminal differentiation and apoptosis of chondrocytes**
*Chung-Hwan Chen¹, Liang-Yin Chou¹, Yi-Shung Lin¹, Sung-Yen Lin¹, Yin-Chi Fu¹, Je-Ken Chang¹, Mei-Ling Ho¹, Chau-Zen Wang¹. ¹Kaohsiung Medical University, Taiwan, Province of China
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SUN-367 **QTL for Femoral Trabecular Bone Mass and Microarchitecture and Their Dietary Responses to Calcium Restriction in Male BXD Recombinant Inbred Mouse Strains**
*Krittikan Chanpaisaeng¹, James C. Fleet¹, Perla C. Reyes-Fernandez². ¹Department of Nutrition Science, Purdue University, United States, ²Mondor Biomedical Research Institute, Faculty of Medicine, University Paris-Est Créteil, France
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SUN-368 **Genome-wide Association Study Identifies One Novel Locus Associated With Thickness And Mineralization Of Pediatric Metacarpal Bones**
*Olja Grgic¹, Carolina Medina-Gomez², Fernando Rivadeneira², Katerina Trajanoska³, Andre G. Uitterlinden⁴, Eppo B. Wolvius⁵. ¹Department of Internal Medicine; Department of Maxillo-facial Surgery, Special Dental Care and Orthodontics; The Generation R Study, Netherlands, ²Department of Internal Medicine; The Generation R Study, Department of Epidemiology, Netherlands, ³Department of Internal Medicine, Department of Epidemiology, Netherlands, ⁴Department of Internal Medicine; The Generation R Study; Department of Epidemiology, Netherlands, ⁵Department of Maxillo-facial Surgery, Special Dental Care and Orthodontics; The Generation R Study, Netherlands
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- SUN-369 Harnessing the Osteo-inductive Property of JAGGED1 as a Maxillary Bone Regenerative Intervention**
 *Archana Kamalakar¹, Angelica Amanso¹, Samir Ballestas¹, Nick Willett¹, Hicham Drissi¹, Steven Goudy¹, Michael Davis². ¹Emory University, United States, ²Georgia Tech, United States
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- SUN-370 Analysis of Linear Regression between Morphometric Parameters of Growth Plate and Long Bone Growth in Mice and Human**
 *Wilson Kimberly¹, Danielle Hogarth¹, Amanda Scheiber¹, Hongying Tian¹, Satoru Otsuru¹, Masahiro Iwamoto¹, Joshua Abzug¹, Motomi Enomoto-Iwamoto¹, Yu Usami², Satoru Toyosawa², Yulong Wei³, Ling Qin³. ¹University of Maryland, Baltimore, School of Medicine, Department of Orthopaedics, United States, ²Osaka University, Dental School, Department of Oral Pathology, Japan, ³University of Pennsylvania, School of Medicine, Department of Orthopaedic Surgery, United States
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- SUN-371 Local Intraoperative Steroid Administration Does Not Impact Spinal Fusion Outcomes in Rats**
 *Silvia Minardi¹, David J. Ellenbogen¹, Mitchell J. Hallman¹, Allison C. Greene¹, Jonathan T. Yamaguchi¹, Abhishek Kannan¹, Vivek Shah¹, Chawon Yun¹, Stuart R. Stock¹, Wellington Hsu¹, Erin Hsu¹. ¹Northwestern University, United States
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- SUN-372 Osteoblast-specific reduction in DYRK1A copy number alters bone growth in a Down syndrome mouse model**
 *Jared Thomas¹, Joseph Wallace², Randall Roper². ¹Indiana University - Purdue University Indianapolis, United States, ²IUPUI, United States
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- SUN-373 Characterizing the Effects of Methylphenidate Dosage and Dosing Regimen on Bone Integrity**
 *Sardar Uddin¹, Alex Chirokikh², Michael Hadjiargyrou³, Panayotis Thanos⁴, David Komatsu⁵. ¹Department of Orthopaedics, Stony Brook University, United States, ²Stony Brook University, United States, ³Department of Life Sciences, New York Institute of Technology, United States, ⁴BNNLA -Research Institute on Addictions, SUNY University at Buffalo, United States, ⁵Department of Orthopaedics, Stony Brook University, United States
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- SUN-374 Regional difference in microRNA regulation in the skull vault**
 *Xingen Zhang¹, Guiqian Chen². ¹Zhejiang Rongjun Hospital, China, ²Zhejiang Sci-Tech University, China
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MUSCULOSKELETAL PROGENITOR CELLS AND LINEAGE DETERMINATION

- SUN-397 Low PLS3 Expression Impairs Osteoblast Differentiation of Pediatric MSCs in vitro**
 *Jessica J. Alm¹, Shuanhu Zhou², Julie Glowacki², Bonnie Padwa³. ¹Clinical Genetics, Department of Molecular Medicine and Surgery, Center for Molecular Medicine, Karolinska Institutet, Sweden, ²Department of Orthopedic Surgery, Brigham and Women's Hospital, Harvard Medical School, United States, ³Department of Plastic and Oral Surgery, Boston Children's Hospital, United States
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- SUN-398 Smurf1 negatively regulates odontoblast differentiation**
 *Arang Kwon¹, Hyun-Jung Park¹, Yun-Sil Lee¹, Kyung Mi Woo¹, Hyun-Mo Ryoo¹, Jeong-Hwa Baek¹, Eunhyung Chung². ¹Seoul National University School of Dentistry, Republic of Korea, ²SMDsolution Co., Ltd. Research Center, Republic of Korea
Disclosures: Arang Kwon, None

- SUN-399** **The Transcription Factor EBF1 is required for GR-Mediated Adipogenesis from Bone Marrow Progenitors**
 *Aeshah Alsarran¹, Tracy Nelson¹, Jackie Fretz¹. ¹Yale School of Medicine, United States
Disclosures: Aeshah Alsarran, None
- SUN-400** **Scara5 prevents osteoblast differentiation in favor of adipocytes.**
 *Nicole Horwood¹, Yi-Hsuan Lee², Allahdad Zarei², Houfu Leng², David Mahoney², Sara Afrough², Afsie Sabokbar², Nick Platt². ¹University of East Anglia, United Kingdom, ²University of Oxford, United Kingdom
Disclosures: Nicole Horwood, None
- SUN-401** **Evidence for Lgr6 as a Novel Marker of Osteoblastic Progenitors in Mice**
 *Vikram Khedgikar¹, Jessica Lehoczky¹. ¹Brigham and Women's Hospital, United States
Disclosures: Vikram Khedgikar, None
- SUN-402** **Preserved Capacity for In Vivo Bone Formation By Mesenchymal Stem Cells From Osteoporotic Patients**
 *Laura López Delgado¹, Maria I. Pérez-Núñez¹, Esther Laguna¹, Guillermo Menendez¹, Carmen García-Ibarbia¹, Miguel Fakkas¹, JA Riancho¹, Carolina Sañudo², Alvaro Del Real³, Jesús Merino⁴. ¹Hospital Universitario Marqués de Valdecilla, Spain, ²Department of Internal Medicine, Hospital Universitario Marqués de Valdecilla-IDIVAL, University of Cantabria, Santander, Spain, Spain, ³Department of Internal Medicine, Hospital Universitario Marqués de Valdecilla-IDIVAL, University of Cantabria, Spain, ⁴Universidad de Cantabria, Spain
Disclosures: Laura López Delgado, None
- SUN-403** **Adult periosteum preserves a skeletal stem cell subset that requires distinct CCL5-dependent migration for bone regeneration and repair**
 *Laura Ortinau¹, Hamilton Wang¹, Ingo Grafe¹, Scott Rosenfeld¹, Kevin Lei², Yannis Hara², Lorenzo Deveza³, Brendan Lee³, Dongsu Park³, David Scadden⁴, Dongjun Lee⁵. ¹Baylor College of Medicine, United States, ²Baylor college of medicine, United States, ³Baylor college of Medicine, United States, ⁴Harvard Stem Cell Institute (HSCI), United States, ⁵Harvard University, United States
Disclosures: Laura Ortinau, None
- SUN-404** **Defining Hox11 Function in MSCs During Adult Skeletal Homeostasis and Injury Repair**
 *Jane Song¹, Kyriel Pineault², Deneen Wellik². ¹University of Michigan, United States, ²University of Wisconsin, United States
Disclosures: Jane Song, None
- SUN-405** **Is LBX1 Playing a Role in the Differentiated Paraspinal Muscle Phenotypes and Muscle-bone Interaction in Adolescent Idiopathic Scoliosis (AIS)**
 *Yujia Wang¹, Ka-Lo Cheng¹, Jiajun Zhang¹, Tsz-ping Lam¹, Alec LH Hung¹, Jack CY Cheng¹, Wayne YW Lee¹, Zhenhua Feng², Leilei Xu², Yong Qiu². ¹Department of Orthopaedics and Traumatology, SH Ho Scoliosis Research Laboratory, The Chinese University of Hong Kong, Hong Kong, ²Spine Surgery, Nanjing Drum Tower Hospital, Nanjing University, China
Disclosures: Yujia Wang, None
- SUN-406** **Physiological occlusal force regulates periodontium mesenchymal stem cells activation by modulating Wnt inhibitor level within the niche**
 *Yi Men¹, hu zhao¹. ¹Texas A&M University, United States
Disclosures: Yi Men, None

OSTEOARTHRITIS AND OTHER JOINT DISORDERS

- SUN-425** **Core binding factor β protects osteoarthritis progression by inhibiting proteosomal degradation of Runx1**
**Xiangguo Che¹, Xian Jin¹, Yu-Min Hong¹, Dong-Kyo Lee¹, Byung-Deu Kim¹, Na-Rae Park¹, Hyun-Ju Kim¹, Je-Yong Choi¹, Eui-Kyun Park². ¹Department of Biochemistry and Cell Biology, Cell and Matrix Research Institute, Korea Mouse Phenotype Consortium, BK21 Plus KNU Biomedical Convergence Program, School of Medicine, Republic of Korea, ²Department of Oral Pathology, School of Dentistry, Kyungpook National University, Republic of Korea*
Disclosures: Xiangguo Che, None
- SUN-426** **Vitamin B complex and Lactobacillus Acidophilus LA-1 attenuate pain response and cartilage damage in monosodium iodoacetate-induced osteoarthritis by inhibiting STAT3 signaling**
**JeongWon Choi¹, JooYeon Jhun¹, Ji Ye Kwon¹, Jaeyoon Ryu¹, Miso Kim¹, Hyun Sik Na¹, KyoungAh Jung¹, Mi-La Cho². ¹The Rheumatism Research Center, Catholic Research Institute of Medical Science, Republic of Korea, ²1 The Rheumatism Research Center, Catholic Research Institute of Medical Science, 2Laboratory of Immune Network, Conversant Research Consortium in Immunologic disease, College of Medicine, The Catholic University of Korea, Republic of Korea*
Disclosures: JeongWon Choi, None
- SUN-427** **Meaningful Effectiveness of Platelet-Rich Plasma (PRP) in Treating Patients with Osteoarthritis of the Knee: Meta-analysis and Review**
**Abir Hegazy¹, Paula Karabelas², Abdulhafez Selim³. ¹King Fahd Specialist Hospital, Saudi Arabia, ²Private Investigator, United States, ³PCOM, United States*
Disclosures: Abir Hegazy, None
- SUN-428** **p21 deficiency is susceptible to TMJ-Osteoarthritis with mechanical stress**
**Tsendsuren Khurel-Ochir¹, Takuma Sakamaki¹, Takashi Izawa², Hiroki Mori², Akihiko Iwasa², Eiji Tanaka². ¹Department of Orthodontics and Dentofacial Orthopedics, Tokushima University Graduate School of Oral Sciences, Japan, ²Department of Orthodontics and Dentofacial Orthopedics, Institute of Biomedical Sciences, Tokushima University Graduate School, Japan*
Disclosures: Tsendsuren Khurel-Ochir, None
- SUN-429** **LPS Induced Inflammation Prior to Anterior Cruciate Ligament (ACL) Injury Increases the Severity of Post-Traumatic Osteoarthritis in C57Bl/6J Mice**
**Melanie Mendez¹, Jillian McCool¹, Gabriela Loots², Deepa Muruges², Blaine Christiansen³, Allison Hsia³. ¹University of California, Merced, United States, ²Lawrence Livermore National Laboratory, United States, ³University of California, Davis, United States*
Disclosures: Melanie Mendez, None
- SUN-430** **Analysis of bone erosions of the MCP joint using High Resolution peripheral Quantitative CT (HR-pQCT): an investigation of false-positive erosions**
**Kazuteru Shiraishi¹, Ko Chiba¹, Narihiro Okazaki¹, Kounosuke Watanabe¹, Makoto Osaki¹. ¹Department of Orthopedic Surgery, Nagasaki University Graduate School of Biomedical Sciences, Japan*
Disclosures: Kazuteru Shiraishi, None
- SUN-431** **Effect of Alendronate Treatment on the Load Response of the Mandibular Cartilage in Osteogenesis Imperfecta Mice**
**Po-Jung Chen¹, Sumit Yadav¹, Shivam Mehta¹, Mara. H O'brien¹. ¹University of Connecticut Health Center, United States*
Disclosures: Po-Jung Chen, None

SUN-432

Oral Gene Therapy of Post-traumatic Osteoarthritis with Gut Macrophage-targeted Delivery of IL-1 β shRNA via Recombinant *Saccharomyces Cerevisiae*

*Long Zhang¹, Hang Peng², Meng Feng², Wan Zhang², Qian Chen³. ¹Frontier Institute of Science and Technology, Xi'an Jiaotong University, Xi'an, China; The First Affiliated Hospital of Xi'an Jiaotong University, Xi'an, China, China, ²The First Affiliated Hospital of Xi'an Jiaotong University, Xi'an, China, China, ³Rhode Island Hospital and Warren Alpert Medical School of Brown University, Providence, USA, United States

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OSTEOBLASTS

SUN-462

The FIAT transcriptional repressor as a drug target for bone regeneration

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Disclosures: Caitlin Anderson, None

SUN-463

Effect of nanostructured titanium on osteoblast-osteoclast crosstalk

*Rayana Longo Bighetti-Trevisan¹, Larissa Moreira Spínola Castro-Raucci², Luciana Oliveira Almeida³, Emanuela Prado Ferraz³, Roger Rodrigo Fernandes³, Fabíola Singaretti Oliveira³, Adalberto Luiz Rosa³, Márcio Mateus Beloti³. ¹University of São Paulo, Brazil, ²University of Ribeirão Preto, Brazil, ³University of São Paulo, Brazil

Disclosures: Rayana Longo Bighetti-Trevisan, None

SUN-464

pH Transport Driven Matrix Synthesis During Bone Formation

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SUN-465

Dlx5 and Dlx6 promote final osteoblast differentiation and the maintenance of cortical bone

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SUN-466

BAF45A subunit of the mammalian BAF complex directs tooth specific chromatin remodeling essential for mineralized tissue

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SUN-467

Exendin-4 enhances the differentiation of MC3T3-E1 osteoblasts via regulation of connexin43

*Jin Hong Chen¹, Chen Shen¹, Ha Ram Oh¹, Ji Hyun Park¹. ¹Department of Internal Medicine, Chonbuk National University Medical School, Research Institute of Clinical Medicine of Chonbuk National University-Biomedical Research Institute of Chonbuk National University Hospital, Republic of Korea

Disclosures: Jin Hong Chen, None

- SUN-468** **Ezh2 inhibition primes BMP2-mediated osteogenic differentiation and bone healing**
 *Amel Dudakovic¹, Rebekah Samsonraj¹, Christopher Paradise¹, Catalina Galeano-Garces¹, Merel Mol¹, Daniela Galeano-Garces¹, M. Lizeth Galvan¹, Roman Thaler¹, A. Noelle Larson¹, Jennifer Westendorf¹, Andre van Wijnen¹, *Amel Dudakovic², Rebekah Samsonraj², Christopher Paradise², Catalina Galeano-Garces², Merel Mol², Daniela Galeano-Garces², M. Lizeth Galvan², Roman Thaler², A. Noelle Larson², Jennifer Westendorf², Andre van Wijnen², Pengfei Zan³, Dana Begun⁴, Peter Kloen⁵, Marcel Karperien⁶. ¹Mayo Clinic, United States, ²Mayo Clinic, Netherlands, ³Tongji University, China, ⁴GE, United States, ⁵University of Amsterdam, Netherlands, ⁶University of Twente, Netherlands
Disclosures: Amel Dudakovic, None
- SUN-469** **Critical Role of IGF1 Signaling in Regulating CXCL12 Expression in Fracture Repair**
 *Alessandra Esposito¹, Marissa Cruz¹, Tieshi Li¹, Fang Fang¹, Anna Spagnoli¹. ¹University of Nebraska Medical Center, United States
Disclosures: Alessandra Esposito, None
- SUN-470** **Genome-wide dynamics of transcription factor binding and epigenomic programming in mesenchymal stromal cells during osteoblastic differentiation**
 *Jonathan Gordon¹, Coralee Tye¹, Joseph Boyd¹, Janet Stein¹, Gary Stein¹, Jane Lian¹, Andre van Wijnen². ¹University of Vermont, Department of Biochemistry, United States, ²Mayo Clinic College of Medicine, United States
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- SUN-471** **Colla1-Cre targets the ovary and testis.**
 *Tadayoshi Hayata¹, Yoichi Ezura², Makoto Asashima³, Ryuichi Nishinakamura⁴, Masaki Noda⁵. ¹Tokyo University of Science, Japan, ²Tokyo Medical & Dental University, Japan, ³Teikyo University, Japan, ⁴Kumamoto University, Japan, ⁵Yokohama City Minato Red Cross Hospital, Tokyo Medical & Dental University, Japan
Disclosures: Tadayoshi Hayata, None
- SUN-472** **Reactivation of bone lining cells is modestly attenuated but reproducible during persistent anti-sclerostin antibody administration**
 *A Ram Hong¹, Jae-yeon Yang², Ji-yeon Lee², Jung Hee Kim², Chan Soo Shin², Sang Wan Kim². ¹Chonnam National University Medical School, Republic of Korea, ²Seoul National University College of Medicine, Republic of Korea
Disclosures: A Ram Hong, None
- SUN-473** **Characterization of the Consequences of Loss of DAAM2 in Human Osteoblasts**
 *Laetitia Laurent¹, Vincenzo Forgetta¹, David Goltzman², J. Brent Richards³. ¹Lady Davis Institute, Jewish General Hospital, McGill University, Canada, ²Division of Endocrinology, Department of Medicine, McGill University, Canada, ³Department of Human Genetics, Departments of Medicine and Epidemiology, Biostatistics & Occupational Health, McGill University, Department of Twin Research and Genetic Epidemiology, King's College London, Canada
Disclosures: Laetitia Laurent, None
- SUN-474** **Noncanonical autophagy at ER exit sites in osteoblasts**
 *Shakib Omari¹, Elena Makareeva¹, Anna Roberts-Pilgrim¹, Lynn Mirigian¹, Michal Jarnik¹, Sergey Leikin¹, Jennifer Lippincott-Schwartz². ¹National Institutes of Health, United States, ²HHMI, Janelia Research Campus, United States
Disclosures: Shakib Omari, None
- SUN-475** **Research on Semaphorin4D in Periodontal Tissues of Experimental Rat Periodontitis**
 *Lingxian Meng¹, Yu Ban¹. ¹West China School of Stomatology, Sichuan University, China
Disclosures: Lingxian Meng, None
- SUN-476** **Deciphering phosphate signaling cascade in osteogenic cells**
 *sana khalid¹, Mairobys Socorro¹, Daisy Monier¹, Juan Taboas¹, Dobrawa Napierala¹. ¹University of Pittsburgh, United States
Disclosures: sana khalid, None

- SUN-477** **Stimulatory effects of MTF-2, a flavone compound, on odontoblast differentiation of human dental pulp stem cells via upregulating p38 pathway and elongation of tooth root.**
 *Sang-Hyeon Nam¹, Eui Kyun Park¹, Jung-Eun Kim², Je-Yong Choi³. ¹Department of Pathology and Regenerative Medicine, School of Dentistry, Kyungpook National University, Republic of Korea, ²Department of Molecular Medicine, School of Medicine, Kyungpook National University, Republic of Korea, ³Department of Biochemistry and Cell Biology, School of Medicine, Kyungpook National University, Republic of Korea
Disclosures: Sang-Hyeon Nam, None
- SUN-478** **Development of In Vitro Bone Surface Models on Demineralized Compact Bone Slices**
 *Yongkuk Park¹, Jungwoo Lee¹. ¹University of Massachusetts, United States
Disclosures: Yongkuk Park, None
- SUN-479** **Histone Demethylase LSD1 Regulates Osteoblast Differentiation in vitro and in vivo**
 *Petri Rummukainen¹, Kati Tarkkonen¹, Rana Al-Majidi¹, Amel Dudakovic², Andre van Wijnen², Cristina Valensis³, David Hawkins³, Riku Kiviranta⁴. ¹Institute of Biomedicine, University of Turku, Finland, ²Orthopedic Research, Mayo Clinic, United States, ³University of Washington, United States, ⁴Institute of Biomedicine, University of Turku, University Hospital of Turku, Finland
Disclosures: Petri Rummukainen, None
- SUN-481** **Betaine alleviates alcohol-induced osteonecrosis of femoral head via regulation of PI3K/AKT/mTOR pathway**
 *Qianhao Yang¹, Youshui Gao¹, Changqing Zhang¹. ¹Department of Orthopedic Surgery, Shanghai Jiao Tong University Affiliated Sixth People's Hospital, China
Disclosures: Qianhao Yang, None
- SUN-482** **Osteoblast-specific expression of Panx3 is dispensable for postnatal bone remodeling**
 *Timur Yorgan¹, Stephanie Peters¹, Michael Amling¹, Thorsten Schinke¹. ¹University Medical Center Hamburg-Eppendorf, Dept. of Osteology and Biomechanics, Germany
Disclosures: Timur Yorgan, None

OSTEOCLASTS

- SUN-522** **Osteoclast Precursor Assessment In Rheumatoid Arthritis: The In Vitro Osteoclast Differentiation in Arthritis (IODA) study**
 *Hugues Allard-Chamard¹, Nathalie Carrier¹, Artur de Brums-Fernandes¹, Gilles Boire¹, Sophie Roux¹, Svetlana Komarova², Rene Harrison³, Morris Manolson⁴. ¹Rheumatology, Faculty of Medicine, Sherbrooke University, Canada, ²Faculty of Dentistry, McGill University, Canada, ³University of Toronto Scarborough, Canada, ⁴Faculty of Dentistry, University of Toronto, Canada
Disclosures: Hugues Allard-Chamard, None
- SUN-523** **Mature Murine Osteoclasts Respond Rapidly to Low Extracellular Sodium with GTPase Activation and Increased Bone Resorption**
 *Julianna Barsony¹, Qin Xi¹, Sambhu M. Pillai², Joseph G. Verbalis². ¹Georgetown University Medical Center, Division of Endocrinology and Metabolism, United States, ²Georgetown University Medical Center, Division of Endocrinology, United States
Disclosures: Julianna Barsony, None
- SUN-524** **LPlastin deficiency reduced sealing ring formation and bone resorption in osteoclasts in vitro**
 *Meenakshi Chellaiah¹. ¹Department of Oncology and Diagnostic Sciences, School of Dentistry, University of Maryland, United States
Disclosures: Meenakshi Chellaiah, None
- SUN-525** **GPR109A regulates osteoclastogenesis and bone resorption in mice**
 *Jin-Ran Chen¹, Haijun Zhao¹, Oxana P. Lazarenko¹. ¹Arkansas Children's Nutrition Center and the Department of Pediatrics, University of Arkansas for Medical Sciences, United States
Disclosures: Jin-Ran Chen, None

- SUN-526 The Effect of ZBTB20 on NF- κ B/IRF-3 Signaling Pathway in Aseptic Loosening Caused by Wear-Particle-Induced Osteolysis**
 *Yue Ding¹, Junxiong Qiu¹, Peng Peng¹, Zhong Chen¹, Shixun Li¹, Changchuan Li¹.
¹Department of Orthopaedic Surgery, Sun Yat-Sen Memorial Hospital, Sun Yat-Sen University, China
Disclosures: Yue Ding, None
- SUN-527 Perturbation of osteoclasts in utero affects mouse mandibular morphology**
 *Mohamed Hassan¹, Richardo Vargas², Bin Zhang³, Timothy Cox⁴, Andrew Jheon⁵, Hanan Ismail⁶, Abbas Zaher⁶. ¹Department of Orthodontics, Alexandria University, Department of Orthodontics, South Valley University., Egypt, ²Division of Orthodontics, University of California, San Francisco, United States, ³Program in Craniofacial Biology, UCSF, United States, ⁴Department of Oral and Craniofacial Sciences, UMKC School of Dentistry, United States, ⁵Divisions of Craniofacial Anomalies, Orthodontics. Program in Craniofacial Biology, UCSF, United States, ⁶Department of Orthodontics, Alexandria University., Egypt
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- SUN-528 Humanin suppresses RANKL-induced osteoclast differentiation through AMPK activation**
 *Namju Kang¹, Ki Woo Kim¹, Dong Min Shin¹. ¹Department of Oral Biology, BK21 PLUS project, Yonsei University College of Dentistry, Republic of Korea
Disclosures: Namju Kang, None
- SUN-529 Enhanced osteoclast bone-resorbing activity in vitro by stabilin-1 deficiency**
 *Soon-Young Kim¹, Eun-Hye Lee¹, Seung-Hoon Lee¹, Suk Hee Lee¹, So Yeon Jin¹, Jung-Eun Kim¹. ¹Department of Molecular Medicine, CMRI, BK21 Plus KNU Biomedical Convergence Program, School of Medicine, Kyungpook National University, Republic of Korea
Disclosures: Soon-Young Kim, None
- SUN-530 Osteoclasts are multinucleated cells that degrade cartilage as well as bone**
 *Quitterie Larrouette¹, Helen Knowles¹, Sarah Snelling¹. ¹University of Oxford, United Kingdom
Disclosures: Quitterie Larrouette, None
- SUN-531 Microtubule Actin Crosslinking Factor 1 (MACF1) Positively Controls Osteoclastogenesis via Akt/GSK3 β /NFATc1 Signaling Pathway**
 *Xiao Lin¹, Yunyun Xiao¹, Jianhua Ma¹, Wuxia Qiu¹, Airong Qian¹. ¹Lab for Bone Metabolism, Key Lab for Space Biosciences and Biotechnology, School of Life Sciences, Northwestern Polytechnical University, China
Disclosures: Xiao Lin, None
- SUN-532 Macrophage-derived thymidine phosphorylase promotes osteoclastogenesis and bone resorption in inflammatory osteolysis**
 *Gen Matsumae¹, Alaa Terkawi¹, Norimasa Iwasaki². ¹Department of Orthopaedic Surgery, Faculty of Medicine and Graduate School of Medicine, Hokkaido University, Japan, ²Department of Orthopaedic Surgery, Faculty of Medicine and Graduate School of Medicine, Hokkaido University, Japan
Disclosures: Gen Matsumae, None
- SUN-533 TNF- α stimulates the expression of RANK during orthodontic tooth movement**
 *Takahiro Noguchi¹, Hideki Kitaura¹, Akiko Kishikawa¹, Saika Ogawa¹, Jiawei Qi¹, Wei-Ren Shen¹, Fumitoshi Otori¹, Aseel Marahleh¹, Yasuhiko Nara¹, Itaru Mizoguchi¹. ¹Division of Orthodontics and Dentofacial Orthopedics, Department of Translational Medicine, Tohoku University Graduate School of Dentistry, Japan
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- SUN-534 Investigation of the contribution of osteoclastogenesis relevant cells to osteoclast formation in orthodontic tooth movement**
 *Saika Ogawa¹, Hideki Kitaura¹, Aseel Marahleh¹, Akiko Kishikawa¹, Jiawei Qi¹, Wei-Ren Shen¹, Fumitoshi Ohori¹, Takahiro Noguchi¹, Yasuhiko Nara¹, Itaru Mizoguchi¹. ¹Division of Orthodontics and Dentofacial Orthopedics, Department of Translational Medicine, Tohoku University Graduate School of Dentistry, Japan
Disclosures: Saika Ogawa, None
- SUN-535 Sex-specific increase in osteoclast differentiation and function by Pannexin1 channel deletion in TRAP-expressing cells**
 *Lillian Plotkin¹, Alyson Essex¹, Padmini Deosthale², Harry Sidhu², Jung Min Hong³, Padmini Deosthale⁴, Harry Sidhu⁴, Angela Bruzzaniti⁵. ¹Indiana University School of Medicine, Indiana Center for Musculoskeletal Health, United States, ²Indiana University School of Medicine, United States, ³Indiana University School of Dentistry, United States, ⁴Indiana University School of Medicine, United States Minor Outlying Islands, ⁵Indiana University School of Dentistry, Indiana Center for Musculoskeletal Health, United States
Disclosures: Lillian Plotkin, None
- SUN-536 Inhibition of miR-29 activity in the myeloid lineage by expression of a miR-29 tough decoy enhances trabecular bone volume in male mice**
 *Bongjin Shin¹, Anne Delany¹, Sun-Kyeong Lee¹. ¹University of Connecticut Health Center, United States
Disclosures: Bongjin Shin, None
- SUN-537 MicroRNA146a in human osteoclasts and Paget's disease of Bone**
 *Elizabeth Stephens¹, Michèle Roy¹, Martine Bisson¹, Sophie Roux¹. ¹Rheumatology, Faculty of Medicine, Sherbrooke University, Canada
Disclosures: Elizabeth Stephens, None
- SUN-538 Roles of TLR3 signaling in inflammatory bone resorption**
 *Tsukasa Tominari¹, Ryota Ichimaru¹, Chiho Matsumoto¹, Michiko Hirata¹, Chisato Miyaura¹, Masaki Inada¹. ¹Tokyo University of Agriculture and Technology, Japan
Disclosures: Tsukasa Tominari, None
- SUN-539 Osteoclasts are not a physiologically relevant source of SLIT3**
 *Na Li¹, Ren Xu¹, Kazuki Inoue², Baohong Zhao², Matthew Greenblatt³. ¹School of Medicine, Xiamen University, China, ²Hospital for Special Surgery, United States, ³Weill Cornell Medical College, United States
Disclosures: Na Li, None

OSTEOCYTES

- SUN-568 Osteocyte Lacunar Properties in Bone Tissue from Fracturing and Non-fracturing Women**
 *Mohammed Akhter¹, Joan Lappe¹, Robert Recker¹. ¹Creighton University, United States
Disclosures: Mohammed Akhter, None
- SUN-569 First evidence of osteocytes proliferation within their lacuna in vivo**
 *Thaqif El Khassawna¹, Deeksha Malhan¹, Fathi Hassan¹, Sabine Stoetzel¹, Markus Rupp¹, Christian Heiss¹. ¹Experimental Trauma Surgery Justus-Liebig University Giessen, Germany
Disclosures: Thaqif El Khassawna, None
- SUN-570 Enlarged osteocyte lacunae in infantile bone are associated with heterogenous bone matrix mineralization**
 *Nico Maximilian Jandl¹, Simon von Kroge¹, Anke Jeschke¹, Michael Amling¹, Tim Rolvien¹, Herbert Mushumba², Klaus Püschel². ¹Department of Osteology and Biomechanics, University Medical Center Hamburg-Eppendorf, Germany, ²Department of Legal Medicine, University Medical Center Hamburg-Eppendorf, Germany
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- SUN-571 Disruption of the Aldehyde Dehydrogenase 2 Gene Increases Bone Anabolic Response to Intermittent PTH Treatment in Ovariectomized Mice Model.**
 *Kenji Kosugi¹, Takafumi Tajima¹, Kayoko Okuma¹, Yasuaki Okada¹, Manabu Tsukamoto¹, Yoshiaki Yamanaka¹, Akinori Sakai¹, Kunitaka Menuki². ¹The Department of Orthopaedic Surgery, University of Occupational and Environmental Health Japan., Japan, ²The Department of Orthopaedic Surgery, Kitakyushu Municipal Yahata Hospital., Japan
Disclosures: Kenji Kosugi, None
- SUN-572 TNF- α Directly Enhances Osteocyte RANKL Expression and Promotes Osteoclast Formation**
 *Aseel Marahleh¹, Hideki Kitaura¹, Fumitoshi Ohori¹, Akiko Kishikawa¹, Saika Ogawa¹, Wei-Ren Shen¹, Jiawei Qi¹, Takahiro Noguchi¹, Yasuhiko Nara¹, Itaru Mizoguchi¹. ¹Tohoku University Graduate School of Dentistry, Japan
Disclosures: Aseel Marahleh, None
- SUN-573 Direct Interactions between Multiple Myeloma Cells and Osteocytes in the Hypoxic Myeloma Microenvironment Induce a Pro-angiogenic Phenotype in Osteocytes**
 *Patrick L. Mulcrone¹, Daniela N. Petrusca¹, Keith W. Condon¹, Jesús Delgado-Calle¹, G. David Roodman¹. ¹Indiana University School of Medicine, United States
Disclosures: Patrick L. Mulcrone, None
- SUN-574 Investigation of the Role of TNF- α -Induced Sclerostin on Osteocytes during Orthodontic Tooth Movement**
 *Fumitoshi Ohori¹, Hideki Kitaura¹, Aseel Marahleh¹, Akiko Kishikawa¹, Saika Ogawa¹, Jiawei Qi¹, Wei-Ren Shen¹, Takahiro Noguchi¹, Yasuhiko Nara¹, Itaru Mizoguchi¹. ¹Division of Orthodontics and Dentofacial Orthopedics, Department of Translational Medicine, Tohoku University Graduate School of Dentistry, Japan
Disclosures: Fumitoshi Ohori, None
- SUN-575 Exogenous hyperthyroidism induces osteocytic osteolysis in male mice**
 *Elena Tsourdi¹, Katharina Jaehn², Eva Maria Woelfel², Bjoern Busse², Franziska Lademann³, Lorenz Hofbauer³, Martina Rauner³, Stephane Blouin⁴, Paul Roschger⁴. ¹Department of Medicine III and Center for Healthy Aging, Technische Universität Dresden Medical Center, Dresden, Germany, ²Department for Osteology and Biomechanics, University Medical Center Hamburg-Eppendorf, Hamburg, Germany, ³Department of Medicine III and Center for Healthy Aging, Technische Universität Dresden Medical Center, Dresden, Germany, ⁴Ludwig Boltzmann Institute of Osteology at Hanusch-Hospital of WGKK & Trauma Center Meidling of AUVA, Austria
Disclosures: Elena Tsourdi, None
- SUN-576 From Osteon Formation/Remodeling of Dog Bones to Loss of Cortical Bone in Human Bones**
 *Ke Wang¹, Jun Wang¹, Yan Jing¹, Xudong Xie¹, Xiaohua Liu¹, Hu Zhao¹, Jian Q. Feng¹, Yinshi Ren², Chi Ma², Harry Kim², Min Jin³, Yangli Xie³, Lin Chen³, Xianglong Han⁴, Bjorn R. Olsen⁵. ¹Texas A&M University College of Dentistry, United States, ²Texas Scottish Rite Hospital for Children, United States, ³Third Military Medical University, China, ⁴Sichuan University West China School of Stomatology, China, ⁵Harvard School of Dental Medicine, United States
Disclosures: Ke Wang, None
- SUN-577 Circadian rhythm involves in the mechanical force-induced changes of spatiotemporal expression pattern of sclerostin**
 *Ziyi Wang¹, Ei Ei Hsu Hlaing¹, Tomoyo Tanaka¹, Ryuta Osumi¹, Noriaki Kawanabe¹, Hiroshi Kamioka¹, Yoshihito Ishihara², Naoya Odagaki². ¹Department of Orthodontics, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Japan, ²Department of Orthodontics, Okayama University Hospital, Japan
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- SUN-578** **Cx43 Regulates β -catenin Activity in Fully Differentiated Osteocytic Cells**
 *Yue Zhang¹, Henry Donahue¹, Caleb Ryan¹. ¹Virginia Commonwealth University, United States
Disclosures: Yue Zhang, None

OSTEOPOROSIS - ASSESSMENT

- SUN-603** **A 5 year study on Bone-Density Testing Interval in Orthotopic Liver Transplant recipients**
 *Ejigayehu Abate¹. ¹Mayo Clinic, United States
Disclosures: Ejigayehu Abate, None
- SUN-604** **Musculoskeletal Failure: A Proposal**
 *Robert Blank¹. ¹Garvan Institute and Medical College of Wisconsin, Australia
Disclosures: Robert Blank, Amgen, Other Financial or Material Support, Novo-Nordisk, Consultant
- SUN-605** **Determinants of Vertebral Fracture Status and Trabecular Bone Score in Women With Fragility Fractures: A Cross-sectional Sub-study of NoFRACT**
 *Tove Tveitan Borgen¹, Lene Bergendahl Solberg¹, Cathrine Brunborg¹, Ida Lund¹, Cecilie Dahl¹, Tone Kristin Omsland¹, Erik Fink Eriksen¹, Åshild Bjørnerem², Camilla Andreassen², Ann Kristin Hansen², May-Britt Stenbro³, Lars Michael Hübschle³, Anne Froholdt³, Wender Figved⁴, Ellen Margrete Apalset⁵, Jan-Erik Gjertsen⁵, Trude Basso⁶, Jens-Meinhard Stutzer⁷, Lars Nordsletten⁸, Frede Frihagen⁸. ¹University of Oslo, Norway, ²The Arctic University of Norway, Norway, ³Drammen Hospital, Norway, ⁴Bærum Hospital, Norway, ⁵University of Bergen, Norway, ⁶St Olavs Hospital, Norway, ⁷Molde Hospital, Norway, ⁸Oslo University Hospital, Norway
Disclosures: Tove Tveitan Borgen, None
- SUN-606** **Loss of Bone Microarchitecture Assessed by Trabecular Bone Score in BRCA Mutation Carriers Following Prophylactic Salpingo-Oophorectomy**
 *Madeline Dwyer¹, Joanne Kotsopoulos², Paula Harvey², Steven Narod², Ella Huszti³, Jeevitha Sriganthan³, Irene Ho³, Marcus Bernardini³, Barry Rosen³, Angela Cheung³, Suzanne Cohen⁴, Joan Murphy⁵. ¹University of Toronto, Canada, ²Women's College Hospital, Canada, ³University Health Network, Canada, ⁴University Health Network, Canada, ⁵Trillium Health Partners, Canada
Disclosures: Madeline Dwyer, None
- SUN-607** **Structural Parameters of Proximal Femur by 3D Dual-Energy X-ray Absorptiometry in Patients with Primary Hyperparathyroidism**
 *Beatriz García-Fontana¹, Antonia García-Martín¹, Luis Gracia Marco², Sheila González-Salvatierra³, Cristina García-Fontana⁴, Enrique Moratalla-Aranda⁵, Diego Becerra-García⁶, Ludovic Humbert⁷, Manuel Muñoz-Torres⁸. ¹Unit of Bone Metabolism, Endocrinology and Nutrition Division. Hospital Universitario San Cecilio. Instituto de Investigación Biosanitaria de Granada (ibs. GRANADA), Granada, Spain; ²CIBERFES, Instituto de Salud Carlos III, Madrid, Spain., Spain, ³Department of Physical Education and Sports, Universidad de Granada, Granada, Spain., Spain, ⁴Department of Medicine. Universidad de Granada, Granada, Spain; ⁵Hospital Universitario San Cecilio. Instituto de Investigación Biosanitaria de Granada (ibs. GRANADA), Granada, Spain., Spain, ⁶Hospital Universitario San Cecilio. Instituto de Investigación Biosanitaria de Granada (ibs. GRANADA). Fundación Pública Andaluza para la investigación Biosanitaria Andalucía Oriental (FIBAO), Granada, Spain.; Spain, ⁷Department of Medicine. Universidad de Granada, Granada, Spain; ⁸Nuclear Medicine Unit, Department of Radiology. Hospital Universitario San Cecilio, Granada, Spain., Spain, ⁹Nuclear Medicine Unit, Department of Radiology. Hospital Universitario San Cecilio, Granada, Spain., Spain, ¹⁰Musculoskeletal Unit, Galgo Medical, Barcelona, Spain., Spain, ¹¹Unit of Bone Metabolism, Endocrinology and Nutrition Division. Hospital Universitario San Cecilio. Instituto de Investigación Biosanitaria de Granada (ibs. GRANADA), Granada, Spain., Spain
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- SUN-608 Evaluation of hip geometry parameters in patients with a distal radius fracture**
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- SUN-609 A New Method for Measuring Cortical Bone Parameters using HR-pQCT**
 *Ulrika Hjertönsson¹, Mattias Lorentzon¹, Daniel Sundh¹. ¹Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, University of Gothenburg, Sweden, Sweden
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- SUN-610 Sex-related body habitus effect on relationship between DXA- and CT-based hip areal BMD in Koreans**
 *Namki Hong¹, Yumie Rhee¹, David Lee², Tony Keaveney². ¹Yonsei University College of Medicine, Republic of Korea, ²O.N.Diagnostics, United States
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- SUN-611 Ultrasonic Measurement of Bone Mineral Density at the 1/3 Radius with the UltraScan 650**
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Disclosures: Jonathan Kaufman, CyberLogic, Inc., Major Stock Shareholder
- SUN-612 Frailty In Combination With Trabecular Bone Score For Enhancing Predictive Accuracy Of Major Osteoporotic Fracture Risk**
 *Guowei Li¹, Alexandra Papaioannou², Lehana Thabane², Jonathan Adachi². ¹Center for Clinical Epidemiology and Methodology (CCEM), Guangdong Second Provincial General Hospital, China, ²McMaster University, Canada
Disclosures: Guowei Li, None
- SUN-613 Cross-Sectional and Longitudinal Effects of Soft Tissue on a Beta Version of Trabecular Bone Score with Thickness-Based Correction: The Manitoba BMD Cohort**
 *Patrick Martineau¹, Willam Leslie², Lisa Lix², John Schousboe³, Didier Hans⁴. ¹University of Manitoba/Harvard Medical School, Canada, ²University of Manitoba, Canada, ³Park Nicollet Clinic & HealthPartners Institute, Minneapolis, University of Minnesota, Minneapolis, US, United States, ⁴Center of Bone Diseases, Bone and Joints Department, Lausanne University Hospital & University of Lausanne, Lausanne, Switzerland, Switzerland
Disclosures: Patrick Martineau, None
- SUN-614 HR-pQCT cross-calibration across multiple centres and timepoints: A precision study**
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- SUN-615 A Comparative Study of Hip Geometry in Older Adults with Acetabular Versus Hip Fractures**
 *Jenny Thain¹, Sara Kelly¹, Richard Crilly¹, Amanda Lorbergs². ¹Geriatric Medicine, Schulich School of Medicine and Dentistry, Western University, Canada, ²Canadian Frailty Network, Canada
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SUN-616

Differences in Hip Geometry Between Female Subjects with and without Acute Hip Fracture

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Disclosures: Ling Wang, None

OSTEOPOROSIS - EPIDEMIOLOGY

SUN-650

Efficiency of the Combining Use of Osteoporosis Screening Tool (OST) and FRAX in Screening Women with Low Bone Mass

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SUN-651

Attenuated Association Between Proton Pump Inhibitor Use and Fracture Risk After Consideration of Chronic Comorbidities

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SUN-652

HDL concentrations correlate negatively with bone mineral density in a population with history of fracture(s).

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SUN-653

Peak Perimenopausal Lumbar Spine BMD is related to Fracture Risk in a Population-based Cohort of Midlife Women in the Canadian Multicentre Osteoporosis Study (CaMos)

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SUN-654

Genetic predisposition to increased serum calcium on bone mineral density and the risk of fracture in individuals with normal calcium levels: a Mendelian randomization study

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SUN-655

Association between Alcohol Intake and Bone Mineral Density: Mendelian Randomization Analysis

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- SUN-656 Individual Variation in Adaptive Immune Responses and Risk of Hip Fracture – A NOREPOS Population-Based Cohort Study**
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- SUN-657 Low Estradiol And High Luteinizing Hormone In Young Men With Distal Radius Fracture**
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Disclosures: Lisa Egund, None
- SUN-658 Trabecular Bone Score (TBS) Decline During the Menopause Transition (MT) and Postmenopause: Study of Women's Health Across the Nation (SWAN)**
 *Gail Greendale¹, MeiHua Huang¹, Diana Liao¹, Arun Karlamangla¹, Jane Cauley², Sioban Harlow³, Joel Finkelstein⁴, Didier Hans⁵. ¹David Geffen School of Medicine at UCLA, Division of Geriatrics, United States, ²University of Pittsburgh, Department of Epidemiology, United States, ³University of Michigan, Department of Epidemiology, United States, ⁴Massachusetts General Hospital, Department of Medicine, Endocrine Unit, United States, ⁵Lausanne University Hospital, Center of Bone Diseases, Bone and Joint Department, Switzerland
Disclosures: Gail Greendale, None
- SUN-659 Higher Weight is Protective Against Menopausal Bone Loss Among Black and White Women: SWAN Longitudinal HR-pQCT Study**
 *Fjola Johannesdottir¹, Melissa S. Putman², Sherri-Ann Burnett-Bowie³, Joel S. Finkelstein³, Elaine W. Yu³, Mary L. Bouxsein⁴. ¹Beth Israel Deaconess Medical Center and Harvard Medical School, United States, ²Massachusetts General Hospital, Boston Children's Hospital, Harvard Medical School, United States, ³Massachusetts General Hospital, Harvard Medical School, United States, ⁴Massachusetts General Hospital, Beth Israel Deaconess Medical Center, Harvard Medical School, United States
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- SUN-660 Differences in Bone Status, Muscle Function, and Fat Mass Between Asian and Caucasian Women**
 *Japneet Kaur¹, Ryan Miller¹, Eduardo Freitas¹, Samuel Buchanan¹, Debra Bemben¹, Michael Bemben¹. ¹University of Oklahoma, United States
Disclosures: Japneet Kaur, None

- SUN-661** **Glucocorticoid use, not Rheumatoid Arthritis, is a Risk Factor for Clinical Fractures -TOMMOROW Study in the Eighth Year-**
 *Tatsuya Koike¹, Yuko Sugioka², Kenji Mamoto³, Masahiro Tada⁴, Tadashi Okano⁵, Kentaro Inui⁵, Shohei Anno⁶, Shuko Tsumoto⁷. ¹Search Institute for Bone and Arthritis Disease, Shiraahama Foundation for Health and welfare, Japan, ²Center for Senile Degenerative Disorders, Osaka City University Medical School, Japan, ³Orthopaedic Srgery, Yodogawa Christian Hospital, Japan, ⁴Orthopaedic Surgery, Osaka City general Hospital, Japan, ⁵Orthopaedic Surgery, Osaka City University Medical School, Japan, ⁶Orthopaedic Surgery, Osaka Social Medical Center, Japan, ⁷Orthopaedic Surgery, Saiseikai Senri Hospital, Japan
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- SUN-662** **Prospective Study of Obstructive Sleep Apnea and Risk for Incident Fracture in Women**
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Disclosures: Tianyi Huang, None
- SUN-663** **Mortality rate after fracture in kidney transplant patients: A population-based study using a healthcare administrative database**
 *Aboubacar Sidibe¹, Fabrice Mac-Way¹, Philippe Gamache², Sonia Jean², Lynne Moore³. ¹CHU de Québec Research Center, Hôtel-Dieu de Québec Hospital, Division of Nephrology, Endocrinology and Nephrology Axis, Faculty and Department of Medicine, Laval University, Quebec Canada, Canada, ²Institut National de Santé Publique du Québec, Medicine Faculty, Department of medicine, Laval University, Quebec Canada, Canada, ³Population Health and Optimal Health Practices Research Unit, Trauma – Emergency – Critical Care Medicine, Centre de Recherche du CHU de Québec, Department of Social and Preventive Medicine, Laval University, Quebec, Canada, Canada
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- SUN-664** **Higher Mortality in Older Men with Poor Bone Microarchitecture – the STRAMBO Prospective Study**
 *Pawel Szulc¹, Dominique Foesser¹, Roland Chapurlat¹. ¹INSERM UMR1033, University of Lyon, France
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- SUN-665** **Incidence Rates of Hip Fractures in Elderly Mexican Population Without Social Security**
 *Francisco Torres-Naranjo¹, Edgar Saul Tejeda-Chavez², Roberto Gabriel González-Mendoza³, Noé González-Gallegos⁴, Isabel Valadez-Figueroa⁵, Pilar de la Peña⁶, Hugo Gutiérrez-Hermosillo⁷, Juan Ricardo López-Taylor⁸. ¹Center of Body Composition and Bone Research, Mexico, ²University of Guadalajara; Secretaria de Salud., Mexico, ³Department of Human Reproduction, Infantile Growth and Development, University Health Sciences Center, University of Guadalajara, Mexico, ⁴Department of Welfare and Sustainable Development, University Center of the North, University of Guadalajara, Mexico, ⁵Regional Institute of Public Health Research of the University of Guadalajara, Mexico, ⁶Servicios Médicos De la Peña SC, Mexico, ⁷Hospital Aranda de la Parra, Mexico, ⁸Institute of Applied Sciences for Physical Activity and Sport, Department of Human Movement Sciences, Education, Sport, Recreation and Dance, University Health Sciences Center, University of Guadalajara, Mexico
Disclosures: Francisco Torres-Naranjo, None
- SUN-666** **Small individual-level increase in bone mineral density translated into substantial population-level decrease in fracture incidence: revisiting Geoffrey Rose's axiom**
 *Tuan V Nguyen¹, Thach S Tran², Jacqueline R Center², John A Eisman². ¹Bone Biology Division, Garvan Institute of Medical Research; School of Biomedical Engineering, University of Technology, Sydney, Australia, ²Bone Biology Division, Garvan Institute of Medical Research, Australia
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SUN-667 Osteoporosis and osteoporotic fractures among community-dwelling postmenopausal women in China: preliminary results from a population-based, random-sampling, cross-sectional study

*Weibo Xia¹, Qiang Liu², Jinhan Lv³, Zhenlin Zhang⁴, Wen Wu⁵, Zhongjian Xie⁶, Jianting Chen⁷, Liang He⁸, Jian Dong⁹, Zhenming Hu¹⁰, Yu Xia¹¹, Fang Wei¹², Jue Wang¹². ¹Peking Union Medical College Hospital, Beijing, China, China, ²The first hospital of Shanxi Medical University, China, ³The People's Hospital of Ningxia Hui Autonomous Region, Ningxia, China, China, ⁴The Sixth People's Hospital, Shanghai Jiaotong University, Shanghai, China, China, ⁵Guangdong General Hospital, Guangdong, China, China, ⁶The Second Xiangya Hospital of Central South University, Hunan, China, China, ⁷Nanfeng Hospital of Southern Medical University, Guangdong, China, China, ⁸Beijing Jishuitan Hospital, Beijing, China, China, ⁹Fudan University Zhongshan Hospital, Shanghai, China, China, ¹⁰The First Affiliated Hospital of Chongqing Medical University, Chongqing, China, China, ¹¹Real World Evidences, IQVIA RDS (Shanghai) Co. Ltd., Shanghai, China, China, ¹²Global Medical Affairs, Merck Research Laboratories, MSD China, China

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SUN-668 Osteoporosis and Hearing Loss in Older Koreans: Findings from the Korea National Health and Nutrition Examination Survey (KNHANES) 2009-2011

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OSTEOPOROSIS - HEALTH SERVICES RESEARCH

SUN-694 Houston Methodist Hospital's Fracture Liaison Service: An Innovative Approach to Osteoporotic Fracture Prevention

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SUN-695 Post-Fracture Care Programs: A Literature Assessment of Where Secondary Fracture Prevention is Today

*Kristina Åkesson¹, Kirtan Ganda², Cynthia Deignan³, David Lee³, Amy Volpert⁴, Keyla Brooks⁵, Andrea J Singer⁶. ¹Lund University and Skåne University Hospital, Sweden, ²University of Sydney and Concord Repatriation General Hospital, Australia, ³Amgen Inc., United States, ⁴BioScience Communications, United States, ⁵UCB Pharma, Belgium, ⁶MedStar Georgetown University Hospital, United States

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SUN-696 Exploring the Association Between Vertebral Fracture Characteristics and Pain

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- SUN-697 Development of a Framework to Evaluate the Ontario Osteoporosis Strategy**
 *Susan Jaglal¹, Crystal MacKay¹, Cathy Cameron¹, Sandra Kim², Alexandra Papaioannou³, Joanna Sale⁴, Rebeka Sujic⁴, Ravi Jain⁵. ¹University of Toronto, Canada, ²Women's College Hospital, Canada, ³Hamilton Health Sciences Centre, Canada, ⁴St. Michael's Hospital, Canada, ⁵Osteoporosis Canada, Canada
Disclosures: Susan Jaglal, None
- SUN-698 How Exercise Professionals support Individuals with Acute Vertebral Fractures**
 *Isabel Rodrigues¹, Maureen Ashe², Joan Bartley³, Debra Butt⁴, Phil Chilibeck⁵, John Wark⁶, Lora Giangregorio⁷. ¹University of Waterloo, Canada, ²University of British Columbia, Canada, ³Osteoporosis Canada, Canada, ⁴University of Toronto, Canada, ⁵University of Saskatchewan, Canada, ⁶University of Melbourne, Australia, ⁷University of Waterloo, Schlegel UW Research Institute for Aging, Canada
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- SUN-699 Exploring The Burden Of X-Linked Hypophosphatemia: A European Multi-Country Qualitative Study**
 *Siu Hing Lo¹, Natalia Piglowska¹, Andrew Lloyd¹, Angela Williams², Robin Lachmann³. ¹Acaster Lloyd Consulting Ltd, United Kingdom, ²Kyowa Kirin International, United Kingdom, ³University College London Hospitals, United Kingdom
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OSTEOPOROSIS - NUTRITION, DIETARY SUPPLEMENTS AND PHYSICAL ACTIVITY

- SUN-714 Bone Health, Serum PTH and Serum Vitamin D in Young Female Pre-Professional Ballet Dancers**
 *Laura Freitas¹, Henrique Reguengo¹, Franklim Marques¹, Yiannis Koutedakis², Tânia Amorim³. ¹University of Porto, Portugal, ²University of Thessaly, Greece, ³University of Porto; University of Thessaly, Portugal
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- SUN-715 Effects of Vitamin D3 Supplementation on Body Composition in the VITamin D and Omega-3 Fatty Acid Trial (VITAL)**
 *Sharon Chou¹, Elle Murata¹, Cindy Yu¹, Nancy Cook¹, Samia Mora¹, I-min Lee¹, Julie Buring¹, JoAnn Mason¹, Meryl LeBoff¹. ¹Brigham and Women's Hospital, United States
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- SUN-716 Factors Contributing to Vitamin D Status Changes during Initial Military Training**
 *Erin Gaffney-Stomberg¹, Kathryn Taylor¹, Anna Nakayama¹, Laura Lutz¹, James McClung¹. ¹USARIEM, United States
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- SUN-717 Vitamin D Status in 990 Medical Examinees at a Regional Public General Hospital**
 *Satoshi Hagio¹, Taro Mawatari¹, Gen Matsui¹, Takahiro Iguchi¹, Hiroaki Mitsuyasu¹, Shinya Kawahara¹, Misa Osako¹. ¹Hamanomachi Hospital, Japan
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- SUN-718 Vitamin D Deficiency and Postoperative Complications in Patients with Hip Dysplasia Undergoing Periacetabular Osteotomy and the Effect of Native Vitamin D Supplementation**
 *Taro Mawatari¹, Misa Osako¹, Kazuki Kitade¹, Shinya Kawahara¹, Satoshi Ikemura¹, Gen Matsui¹, Takahiro Iguchi¹, Hiroaki Mitsuyasu¹, Satoshi Hagio¹. ¹Hamanomachi Hospital, Japan
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SUN-719

Vitamin D Deficiency or Insufficiency Screening Tools for Adults: A Systematic Review

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SUN-720

Baseline Bone Turnover Balance is Associated with the 12-Month Trajectory of BMD in Exercising Women with Menstrual Disturbances

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OSTEOPOROSIS - PATHOPHYSIOLOGY

SUN-731

Volumetric mapping of total, bound and pore water as well as collagen protons in cortical bone using 3D ultrashort echo time (UTE) MR imaging techniques allows accurate diagnosis of osteopenia and osteoporosis

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SUN-732

Association Between the Gut Microbiota, Bone Metabolism and Fracture Risk in Japanese Postmenopausal Women

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SUN-733

Osteal Macrophage Contributions to Adult Bone Homeostasis and Postmenopausal Osteoporosis Bone Pathology

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OSTEOPOROSIS - SECONDARY OSTEOPOROSIS

SUN-746

Serum 25 hydroxyvitamin D levels, Trabecular Bone Score and Bone Mineral Density in patients with Differentiated Thyroid Cancer and TSH suppression therapy.

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SUN-747

Periprosthetic Fractures: The Next Osteoporosis Crisis

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- SUN-748 The relationship between menstrual disorders and bone metabolic markers in young female athletes.**
 *Ko Chiba¹, Yusaku Isobe², Narihiro Okazaki², Naoko Murakami², Michio Kitajima², Makoto Osaki², Kiyonori Miura², Yuriko Kitajima³. ¹Nagasaki University Graduate School of Biomedical Science, Japan, ²Nagasaki University Graduate School of Biomedical Sciences, Japan, ³Department of Obstetrics and Gynecology Nagasaki University School of Medicine, Japan
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- SUN-749 The effect of thyroid stimulating hormone suppressive therapy after thyroidectomy on postoperative bone health**
 *Donghee Kwak¹, Jane Ha¹, Jong Woong Park¹, Yeongkeun Kwon¹, Yousun Won². ¹Korea University College of Medicine, Republic of Korea, ²Soonchunhyang University College of Medicine, Republic of Korea
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- SUN-750 An analysis of the pathogenesis of bone fragility in patients with liver cirrhosis: Measurement of bone microstructure with HR-pQCT**
 *Narihiro Okazaki¹, Ko Chiba¹, Makoto Era¹, Kiyoshi Sada¹, Makoto Osaki¹, Tomoyuki Suehiro². ¹Department of Orthopaedic Surgery, Nagasaki University Hospital, Japan, ²Department of Gastroenterology and Hepatology, National Hospital Organization Nagasaki Medical Center, Japan
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- SUN-751 Periodontal Disease and Mandibular Bone Mass in Postmenopausal Women with HIV**
 *Jayesh Shah¹, Michael Yin¹, Suliman Salman², Karolina Kister², Sunil Wadhwa², Christian Vivar Ramon³. ¹Columbia University Irving Medical Center, United States, ²Columbia University College of Dental Medicine, United States, ³Columbia University Irving Medical Center, United States
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- SUN-752 Altered bone strength and cortical bone parameters in young women with long-duration type 1 diabetes**
 *Daniel Novak¹, Gun Forsander¹, Eva Kristiansen¹, Anna Svedlund¹, Diana Swolin-Eide¹, Per Magnusson². ¹Department of Pediatrics, University of Gothenburg, Sweden, ²Clinical Chemistry, Linköping University, Sweden
Disclosures: Daniel Novak, None
- SUN-753 Serum cross-linked carboxy-terminal telopeptide of type1 collagen(1CTP) is associated with interleukin(IL)-6 in a cohort of Japanese patients with diabetes mellitus**
 *Nobuyuki Tai¹, Reiko Watanabe¹, Daisuke Inoue¹. ¹Teikyo University School of Medicine, Japan
Disclosures: Nobuyuki Tai, None
- SUN-754 Efficacy and safety of three-year treatment with denosumab in post-kidney transplantation recipients**
 *Yasumasa Yoshino¹, Chika Fujisawa-Tanaka¹, Atsushi Suzuki¹, Izumi Hiratsuka², Megumi Shibata³, Taihei Ito⁴, Takashi Kenmochi⁴, Hitomi Sasaki², Mamoru Kusaka⁵, Ryoichi Shiroki⁵, Kiyotaka Hoshinaga⁵, Midori Hasegawa⁶, Yukio Yuzawa⁶. ¹Department of Endocrinology and Metabolism, Fujita Health University School of Medicine, Japan, ²Department of Endocrinology and Metabolism, Department of Nephrology, Fujita Health University School of Medicine, Japan, ³Department of Endocrinology and Metabolism, ¹Department of Endocrinology and Metabolism, ²Department of Organ Transplant Surgery, ³Department of Urology, ⁴Department of Nephrology, Fujita Health University School of Medicine, Japan, ⁴Department of Organ Transplant Surgery, Fujita Health University School of Medicine, Japan, ⁵Department of Urology, Fujita Health University School of Medicine, Japan, ⁶Department of Nephrology, Fujita Health University School of Medicine, Japan
Disclosures: Yasumasa Yoshino, None

OSTEOPOROSIS - TREATMENT

- SUN-782** **Incidence of Atypical Fractures in the South-East-Asian population**
 *Linsey Gani¹, Natasha Anthony¹, LeRoy Chong¹, Thomas King¹. ¹Changi General Hospital, Singapore
Disclosures: Linsey Gani, None
- SUN-783** **Preventing Periodontitis or controlling its Progression Dramatically Reduces the Development of Bisphosphonate-related Osteonecrosis of the Jaw in Rice Rats (*Oryzomys palustris*)**
 *Evelyn Castillo¹, Jonathan Messer¹, Jessica Jiron¹, Indraneel Bhattacharyya¹, Donald Kimmel¹, Jose Aguiire¹, abel abraham². ¹University of Florida, United States, ²University of South Florida, United States
Disclosures: Evelyn Castillo, None
- SUN-784** **Longitudinal Effects of Combined Bone Anabolic Interventions on Ovariectomised Mice**
 *Bryant Roberts¹, Hector Arrendondo Carrera¹, Sahand Zanjani Pour¹, Maya Boudiffa¹, Alison Gartland¹, Ning Wang¹, Enrico Dall'Ara¹. ¹University of Sheffield, United Kingdom
Disclosures: Bryant Roberts, None
- SUN-785** **Assessment of the effects of sequential treatment after discontinuing denosumab in 64 patients with postmenopausal osteoporosis**
 *Kosuke Ebina¹, Akira Miyama¹, Makoto Hirao¹, Hideki Yoshikawa¹, Jun Hashimoto², Masafumi Kashii³, Hiroyuki Nakaya⁴, Koichiro Takahashi⁴, Shigeyoshi Tsuji⁵, Hideki Tsuboi⁶. ¹Osaka University, Graduate School of Medicine, Japan, ²National Hospital Organization, Osaka Minami Medical Center, Japan, ³Toyonaka Municipal Hospital, Japan, ⁴Toneyama National Hospital, Japan, ⁵National Hospital Organization Osaka Minami Medical Center, Japan, ⁶Osaka Rosai Hospital, Japan
Disclosures: Kosuke Ebina, Ono Pharmaceutical, Grant/Research Support, Chugai, Grant/Research Support, Eli Lilly, Speakers' Bureau, Astellas, Speakers' Bureau, Daiichi Sankyo, Speakers' Bureau, Eisai, Grant/Research Support, Asahi-Kasei, Speakers' Bureau
- SUN-786** **The Effect of Thiazide Exposure in Preventing Osteoporotic Fractures: A Single Center Review**
 *Jace Erwin¹, Alexandra Brown¹, Michael Tilley². ¹University of Kansas Medical Center, United States, ²University of Kansas Department of Orthopedic Surgery, United States
Disclosures: Jace Erwin, None
- SUN-787** **A Real-World Study of the Patient Experience of Osteoporosis Following Treatment with Abaloparatide**
 *Deborah T. Gold¹, Rich Weiss², Yamei Wang², Setareh Williams², Jenna Roberts³, Tom Bailey³. ¹Duke University Medical Center, United States, ²Radius Health, Inc., United States, ³Adelphi Real World, United Kingdom
Disclosures: Deborah T. Gold, Eli Lilly, Amgen, Radius, Consultant
- SUN-788** **Predicting the Intervention Threshold for Initiating Osteoporosis Treatment among Post-Menopausal Women in China: A Cost-Effectiveness Analysis Based on Real-World Data**
 *Lijia Cui¹, Tianhua He¹, Weibo Xia¹. ¹Peking Union Medical College Hospital, Department of Endocrinology, China
Disclosures: Lijia Cui, None
- SUN-789** **The Slow and Sustained Release of a Low Dose of BMP-7 Accelerates Implant Healing in an Osteoporotic Environment**
 *Ernst B Hunziker¹, Nahoko Shintani², Kurt Lippuner². ¹Bern University Hospital, Departement of Osteoporosis, Switzerland, ²Bern University Hospital, Dept. Osteoporosis, Switzerland
Disclosures: Ernst B Hunziker, None

- SUN-790** **Clinical efficacy of denosumab comparison with either active vitamin D or native vitamin D on osteoporosis in patients with Japanese rheumatoid arthritis**
 *Yasuhide Kanayama¹, Taichi Tsuji², Hironobu Inagaki², Naohisa Futamura², Kyotaro Ota², Naomasa Osada², Yui Adachi², Hiroto Tachi², Ryosuke Sugimoto², Kazunori Todoroki².
¹Department of Orthopedic Surgery and Rheumatology, Toyota Kosei Hospital, Japan,
²Department of Orthopedic Surgery, Toyota Kosei Hospital, Japan
Disclosures: Yasuhide Kanayama, None
- SUN-791** **Switching from TPTD to DSMb would be the strongest sequential treatment for severe osteoporosis.**
 *Yoichi Kishikawa¹. ¹Kishikawa Orthopedic Clinic, Japan
Disclosures: Yoichi Kishikawa, None
- SUN-792** **Bone Marrow Aspirate Concentrate for Nonunions and Delayed Unions: A Systematic Review**
 *Sameh Melik¹, Angela Cheung¹, Kieran Murphy¹, Sowmya Viswanathan¹, Khalid Syed¹, Richard Ward¹. ¹University Health Network, Canada
Disclosures: Sameh Melik, None
- SUN-793** **One Year of Romosozumab Followed by Two Years of Denosumab Maintains Fracture Risk Reduction: Analysis for the Japanese Population of Phase 3 FRAME Extension**
 *Akimitsu Miyauchi¹, Rajani Dinavahi², Daria Barry Crittenden², Wenjing Yang², Judy Maddox², Andreas Grauer², Etsuro Hamaya³, Yoichi Nakamura³, Junichiro Shimauchi³, Cesar Libanati⁴. ¹Miyauchi Medical Center, Japan, ²Amgen Inc., United States, ³Amgen Astellas BioPharma, Japan, ⁴UCB Pharma, Belgium
Disclosures: Akimitsu Miyauchi, None
- SUN-794** **In vivo experiments with strontium HA nanoparticles loaded-implants.**
 *Giulia Montagna¹, Livia Visai¹, Beth Bragon², Paola Divieti Pajevic³, Louis Gerstenfeld⁴.
¹Molecular Medicine Department (DMM), Center for Health Technologies (CHT), UdR INSTM, University of Pavia, Viale Taramelli 3/B - 27100 Pavia – ITALY, Italy, ²Department of Orthopaedic Surgery, Boston University School of Medicine, 72 East Concord St, Evans 243, Boston, MA, 02118, USA., United States, ³Molecular and Cell Biology, Boston University Henry M. Goldman School of Dental Medicine, Boston MA, United States, ⁴Department of Orthopaedic Surgery, Boston University School of Medicine, Boston, MA 02118, USA. Electronic address: bragdon@bu.edu., United States
Disclosures: Giulia Montagna, None
- SUN-795** **A tool to improve adherence to anti-resorptive therapy: Using single energy images at time of DXA to reassure patients: Pilot project in a predominantly male population.**
 *Linda Nguyen¹, Robert Adler². ¹Virginia Commonwealth University, United States, ²Virginia Commonwealth University, Hunter Holmes McGuire Veterans Affairs Medical Center, United States
Disclosures: Linda Nguyen, None
- SUN-796** **The effect of combination therapy of PTH and vitamin D**
 *Toshinobu Omiya¹, Yoshihiro Yabe², Shinji Adachi³, Toshiyuki Sakimura⁴, Itaru Yoda⁵, Aki Nishi⁶. ¹oomiya9ort@yahoo.co.jp, Japan, ²yoshihiro_yabe@mhi.co.jp, Japan, ³s-adachi@rf6.so-net.ne.jp, Japan, ⁴sak1049@yahoo.co.jp, Japan, ⁵tarupi_tarupi@yahoo.co.jp, Japan, ⁶akinishi.ortho@gmail.com, Japan
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- SUN-797 Greater Fear of Falling is associated with Lower Exercise Self-efficacy in Older Women with Vertebral Fractures.**
 *Matteo Ponzano¹, Jeffrey Templeton¹, Lora Giangregorio¹, Jenn Gibbs², Jonathan Adachi³, Aliya Khan³, Sadhana Prasad³, Maureen Ashe⁴, David Kendler⁵, Caitlin McArthur⁶, Alexandra Papaioannou⁷, Lehana Thabane⁸. ¹Department of Kinesiology, University of Waterloo, Waterloo, Canada, Canada, ²Department of Kinesiology and Physical Education, McGill University, Montreal, Canada, Canada, ³Department of Medicine, McMaster University, Hamilton, Canada, Canada, ⁴Department of Family Practice, The University of British Columbia, Vancouver, Canada, Canada, ⁵Department of Medicine, The University of British Columbia, Vancouver, Canada, Canada, ⁶GERAS Centre for Aging Research, McMaster University, Hamilton, Canada, Canada, ⁷GERAS Centre, McMaster University, Hamilton, Canada, Canada, ⁸Department of Health Research Methods, Evidence and Impact, McMaster University, Hamilton, Canada, Canada
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- SUN-798 Clinclinal efficacy of denosumab in patients with osteoporosis between rheumatoid arthritis and primary osteoporosis**
 *Hiroto Tachi¹, Kanayama Yasuhide¹, Tsuji Taichi¹, Inagaki Hironobu¹, Futamura Naohisa¹, Ota Kyotaro¹, Osada Naohisa¹, Adachi Yui¹, Sugimoto Ryosuke¹, Todoroki Kazunori¹.
¹Orthopedic Surgery, Toyota Kosei Hospital, Toyota, Japan, Japan
Disclosures: Hiroto Tachi, None
- SUN-799 Glucocorticoid-induced loss of cortical bone at the femoral neck of micoro-mini pig are prevented by risedronate**
 *Shinya Tanaka¹, Hirmomi Oda¹, Koh Chiba², Taketoshi Shimakura³, Noriaki Yamamoto³.
¹Saitama medical university, Japan, ²Nagasaki university, Japan, ³Niigata bone science institute, Japan
Disclosures: Shinya Tanaka, None
- SUN-800 Comparison of ONJ epidemiology in bisphosphonates long-term treated patients and switched to denosumab after tooth extraction**
 *Vaclav Vyskocil¹, Daniel Hrusak², Jan Jambura², Lukas Hauer², Petr Posta³. ¹ Charles University Hospital Centre of Bone Disease Department of medicine II., Czech Republic, ²Charles University Hospital Department of Oral and Maxillofacial Surgery, Czech Republic, ³Charles University Hospital Department of Oral and Maxillofacial Surgery, Plzen, Czech Republic
Disclosures: Vaclav Vyskocil, None
- SUN-801 A Potential Next Generation Sclerostin Inhibitor Specifically Targets Sclerostin Monomer for Bone Anabolic Therapy with Low Cardiovascular Risk to Reverse Established Osteoporosis in Ovariectomized Rats**
 *Yuan Yuan Yu¹, Qing Ren¹, Shuaijian Ni¹, Jin Liu¹, Chuanxin Zhong¹, Jun Lu¹, Yuan Tang¹, Dijie Li¹, Duoli Xie¹, Rongchen Dai¹, Huarui Zhang¹, Lei Dang¹, Aiping Lyu¹, Ge Zhang¹, Zhenjian Zhuo², Zong-Kang Zhang², Bao-Ting Zhang², Luyao Wang³, Yongshu Li³, Kui Kwan Wong⁴, Joseph Zhai⁵. ¹Institute for Advancing Translational Medicine in Bone & Joint Diseases (TMBJ), Hong Kong Baptist University, Hong Kong SAR, China, Hong Kong, ²School of Chinese Medicine, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong SAR, China, Hong Kong, ³Guangdong-Hong Kong-Macao Greater Bay Area International Research Platform for Aptamer-based Translational Medicine and Drug Discovery (HKAP), Hong Kong SAR, China, Hong Kong, ⁴Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Hong Kong SAR, China, Hong Kong, ⁵Del Norte High School, San Diego, CA, USA, United States
Disclosures: Yuan Yuan Yu, None

PARACRINE REGULATORS

- SUN-825 Retinoic Acid Receptor-related Orphan Receptor Beta (Rorβ) Regulates Inflammation in Bone Environment by Inhibiting Interleukin 10 (IL-10) Expression**
 *Ruben Aquino-Martinez¹, Daniel G. Fraser¹, Brittany A. Eckhart¹, Jennifer L. Rowsey¹, Joshua N. Farr¹, Sundeep Khosla¹, David G. Monroe¹. ¹MAYO CLINIC, United States
Disclosures: Ruben Aquino-Martinez, None

- SUN-826** **Deficiency of Sphingosine-1-Phosphate Receptor 3 Does not Affect the Skeletal Phenotype of Mice Lacking Sphingosine-1-Phosphate Lyase**
 *Laura Brylka¹, Timo Heckl¹, Mona Neven¹, Michael Amling¹, Thorsten Schinke¹.¹
 Department of Osteology and Biomechanics, University Medical Center Hamburg-Eppendorf, Germany
Disclosures: Laura Brylka, None
- SUN-827** **A Novel Caspase 9 Inducible Apoptosis Mouse Model**
 *Amy Koh¹, Justin Do¹, Hernan Roca¹, Laurie McCauley¹.¹School of Dentistry, University of Michigan, United States
Disclosures: Amy Koh, None
- SUN-828** **Role of Absent in Melanoma (AIM) 2 in Bone Integrity and Quality**
 *Gozde Yildirim¹, Shoshana Yakar¹, Manisha Dixit², Zhenwei Gong³, Radhika Muzumdar⁴.
¹Department of Basic Science and Craniofacial Biology, David B. Kaiser Dental Center, New York University College of Dentistry, NY, USA, United States, ²1.Department of Basic Science and Craniofacial Biology, David B. Kaiser Dental Center, New York University College of Dentistry, NY, USA, United States, ³2.Department of Pediatrics, University of Pittsburgh School of Medicine, One Children's Hospital Drive, 4401 Penn Avenue, Pittsburgh, PA 15224, USA, United States, ⁴Department of Pediatrics, University of Pittsburgh School of Medicine, One Children's Hospital Drive, 4401 Penn Avenue, Pittsburgh, PA 15224, USA, United States
Disclosures: Gozde Yildirim, None

PRECLINICAL MODELS OF MUSCULOSKELETAL DISORDERS

- SUN-845** **Local Gene Expression Patterns In Differentially Treated Segmental Bone Defects**
 *Andrea Alford¹, Nishant Gohel¹, Rafael Senos¹, Steve Goldstein¹, Kurt Hankenson¹, Mark Hake¹.¹University of Michigan, United States
Disclosures: Andrea Alford, None
- SUN-846** **Abaloparatide Treatment improves Spinal Fusion in a Rat Posterolateral Fusion Model**
 *Heike Arlt¹, Douglas Fredericks², Bruce Mitlak³, Beate Lanske³.¹RADIUS HEALTH INC., United States, ²Iowa Spine Research Lab, Univ. Iowa, United States, ³Radius Health, United States
Disclosures: Heike Arlt, Radius Health, Major Stock Shareholder
- SUN-847** **Comparative assessment of senolytic drugs in attenuating focal radiotherapy-related bone loss**
 *Abhishek Chandra¹, Christine Hachfeld¹, Sean Park¹, James Kirkland¹, Robert Pignolo¹, Sundeep Khosla².¹Mayo Clinic, United States, ²mayo Clinic, United States
Disclosures: Abhishek Chandra, None
- SUN-848** **Modeling Key Metabolic and Skeletal Phenotypes of Human T2DM in the Mouse**
 *Brittany Eckhardt¹, Jennifer Rowsey¹, Brianne Thicke¹, Daniel Fraser¹, David Monroe¹, Joshua Farr¹.¹Mayo Clinic, United States
Disclosures: Brittany Eckhardt, None
- SUN-849** **Tartrate-Resistant Acid Phosphatase 5b in Rat Serum and Plasma**
 *Jussi M Halleen¹, Jukka Vääräniemi¹, Jenni HE Mäki-Jouppila¹, Katja M Fagerlund¹, Jukka Morko¹.¹Pharmatest Services, Finland
Disclosures: Jussi M Halleen, IDS, Boldon, UK, Other Financial or Material Support
- SUN-850** **p-Cresyl sulfate causes bone fragility by osteocytes apoptosis in CKD bone**
 *Yoshiko Iwasaki¹, Hideyuki Yamato², Masafumi Fukagawa², Junichiro Kazama³.¹Oita University of Nursing and Health Sciences, Japan, ²Division of Nephrology, Endocrinology, and Metabolism, Tokai University, Japan, ³Department of Nephrology and Hypertension, Fukushima Medical University, Japan
Disclosures: Yoshiko Iwasaki, None

- SUN-851** **Protease-Activated Receptor 1 (PAR1) Deficiency is Associated with Reduced Bone Mass and Density in Mice**
 *Hillary Larson¹, Robert Klein¹, Steven Grover², Nigel Mackman², Emily Larson³, Jason Taylor⁴. ¹Portland VA Health Care System, United States, ²University of North Carolina, United States, ³VA Portland Health Care System, United States, ⁴Oregon Health & Science University, United States
Disclosures: Hillary Larson, None
- SUN-852** **Thalassemia Prevents Cancellous Bone Loss in Chronic Kidney Disease Mice**
 *Sutada Lotinun¹, Korakot Atjanasuppat¹, Worasit Saiworn¹, Asada Leelahavanichkul², Saovaros Svasti³, Nateetip Krishnamra⁴. ¹Department of Physiology and Skeletal Disorders Research Unit, Faculty of Dentistry, Chulalongkorn University, Thailand, ²Department of Microbiology, Faculty of Medicine, Chulalongkorn University, Thailand, ³Thalassemia Research Center, Institute of Molecular Biosciences, Mahidol University, Thailand, ⁴Department of Physiology, Faculty of Science, Mahidol University, Thailand
Disclosures: Sutada Lotinun, None
- SUN-853** **Osteoporosis in a murine model of postmenopausal lupus**
 *Jauqueline Nordqvist¹, Ulrika Islander¹, Hans Carlsten¹, Marie Lagerquist², Louise Grahnemo², Antti Koskela³. ¹Centre for Bone and Arthritis Research, Department of Rheumatology and Inflammation Research, Sahlgrenska Academy, University of Gothenburg, Sweden, ²Centre for Bone and Arthritis Research, Department of Internal Medicine and Clinical Nutrition, Sahlgrenska Academy, University of Gothenburg, Sweden, ³Department of Anatomy and Cell Biology, Faculty of Medicine, University of Oulu, Finland
Disclosures: Jauqueline Nordqvist, None
- SUN-854** **Towards mechanisms of bone regeneration and repair. Lessons learned from African spiny mice (Acomys)**
 *Kirby Sherman¹, Alyssa Falck¹, Shannon Huggins¹, Ken Muneoka¹, Dana Gaddy¹, Larry Suva¹, Malcolm Maden². ¹Texas A&M University, United States, ²University of Florida, United States
Disclosures: Kirby Sherman, None
- SUN-855** **A Protective Role of an FDA-Approved Generic Drug for Demyelination Against Neurogenic Muscle Atrophy**
 *M A Hassan Talukder¹, Jung Lee¹, Anagha Gurjar¹, Mary O'Brien¹, John Elfär¹, Li Yue². ¹Penn State College of Medicine, United States, ²The Warren Alpert Medical School of Brown University, United States
Disclosures: M A Hassan Talukder, None
- SUN-856** **Systemic Bone loss, Impaired Osteogenic Activity and Type I Muscle Fiber Atrophy in Mice with Elastase-Induced Pulmonary Emphysema: Establishment of a Chronic Obstructive Pulmonary Disease-Related Osteoporosis/Sarcopenia Mouse Model**
 *Manabu Tsukamoto¹, Yasuaki Okada¹, Hokuto Fukuda¹, Yoshiaki Yamanaka¹, Ken Sabanai¹, Eiichiro Nakamura¹, Akinori Sakai¹, Toshiharu Mori², Ke-Yong Wang³, Keisuke Naito⁴, Kazuhiro Yatera⁴. ¹Department of Orthopaedic Surgery, School of Medicine, University of Occupational and Environmental Health, Japan, ²Department of Orthopaedic Surgery, Shin-Kokura Hospital, Federation of National Public Service, Personnel Mutual Aid Associations, Japan, ³Shared-Use Research Center, School of Medicine, University of Occupational and Environmental Health, Japan, ⁴Department of Respiratory Medicine, School of Medicine, University of Occupational and Environmental Health, Japan
Disclosures: Manabu Tsukamoto, None

PRECLINICAL MODELS: NUTRITION AND PHARMACOLOGY

- SUN-876** **Vascular Endothelial Growth Factor Antibody (anti-VEGF) Monotherapy Causes Destructive Advanced Periodontitis but Not Osteonecrosis of the Jaw in Rice Rats (*Oryzomys palustris*)**
 *Jonathan Messer¹, Evelyn Castillo², Abel Abraham², Jessica Jiron², Ronnie Israel², Samantha Thomas², Donald Kimmel², J. Ignacio Aguirre², Joshua Yarrow³, Michael Reynolds³, Russell Wnek³, Catherine Van Poznak⁴, Indraneel Bhattacharyya⁵. ¹Department of Physiological Sciences, University of Florida, United States, ²Department of Physiological Sciences, University of Florida, United States, ³VA Medical Center, Research Service, VA Medical Center, Gainesville, FL, United States, ⁴Medical Oncology, University of Michigan, United States, ⁵Oral & Maxillofacial Pathology, UF College of Dentistry, United States
Disclosures: Jonathan Messer, None
- SUN-877** **Effects of Yerba Mate (*Ilex paraguariensis*) with Different Antioxidant Capacity on Bone and Oxidative Stress Parameters**
 *Lucas R Brun¹, Laureana Villarreal¹, Mercedes Lombarte¹, Florencia E D'Andrea¹, Verónica E. Di Loreto¹. ¹Bone Biology Laboratory, School of Medicine, Rosario National University, Argentina
Disclosures: Lucas R Brun, None
- SUN-878** **Body Weight Loss Improves Bone Quality in High Fat Diet fed Female Rats following Short-term Treatment with a GLP1/glucagon Co-agonist and Food Restriction**
 *Jennifer Rojas¹, Inger Thorup¹, Florian Bolze¹, Johannes Fels¹, Majken Dalgaard¹, Martin Guillot², Aurore Varela², Gabrielle Boyd², Yulia Tingle³. ¹Novo Nordisk A/S, Denmark, ²Charles River, Canada, ³Envigo, United Kingdom
Disclosures: Jennifer Rojas, Novo Nordisk A/S, Grant/Research Support
- SUN-879** **Antipsychotic induced bone loss: Impact on osteoporosis-associated back pain**
 *Victoria Eaton¹, Andrew Elkinson¹, Joshua Havelin¹, Karen Houseknecht¹, Tamara King¹. ¹University of New England, United States
Disclosures: Victoria Eaton, None
- SUN-880** **In Vivo Comparison of Skeletal and Osteocytic Responses to Abaloparatide and PTH 1-34**
 *Zheng-tao Lyu¹, Roland Baron¹, Dorothy Hu², Francesca Gori², Jia-ming Zhang³, Daniel Brooks⁴, Mary Boussein⁴, Beate Lanske⁵. ¹Harvard Medical School, United States, ²Harvard School of Dental Medicine, United States, ³Department of Biochemistry and Biophysics, Lineberger Comprehensive Cancer Center, University of North Carolina, United States, ⁴Department of Orthopedics, Beth Israel Deaconess Medical Center, United States, ⁵Radius Health, United States
Disclosures: Zheng-tao Lyu, None
- SUN-881** **Effects of teriparatide and low-intensity aerobic exercise on bone and fat parameters in rats**
 *Chiaki Sato¹, Miyakoshi Naohisa¹, Yuji Kasukawa¹, Koji Nozaka¹, Hiroyuki Tsuchie¹, Itsuki Nagahata¹, Yusuke Yuasa¹, Kazunobu Abe¹, Hikaru Saito¹, Yoichi Simada¹. ¹Akita University Hospital, Japan
Disclosures: Chiaki Sato, None
- SUN-882** **Osteoprotective effects of oleanolic acid against bone loss are associated with its actions on fatty acid metabolism in aged female rats**
 *Wen-Xuan Yu¹, Xiao-Li Dong¹, Chi-On Chan¹, Daniel Kam-Wah Mok¹, Man-Sau Wong¹, Si-Si Cao². ¹The Hong Kong Polytechnic University, Hong Kong, ²Purdue University; The Hong Kong Polytechnic University, Hong Kong
Disclosures: Wen-Xuan Yu, None

RARE BONE DISEASES: CLINICAL

SUN-899

Quantifying Skeletal Burden in Fibrous Dysplasia using Sodium Fluoride PET/CT

*Natasha Appelman-Dijkstra¹, Wouter van der Bruggen², Marlous Hagelstein-Rotman³, Frits Smit⁴, Sander Dijkstra⁵, Lioe-Fee de Geus-Oei⁶, Dennis Vriens⁷. ¹Center for Bone Quality, dept. of Internal Medicine, division of Endocrinology, Leiden University Medical Center (LUMC), Netherlands, ²Section of Nuclear Medicine, dept. of Radiology, Leiden University Medical Center (LUMC), and Dept. of Nuclear Medicine, Slingeland Hospital, Netherlands, ³Center for Bone Quality, dept. of Internal Medicine, division of Endocrinology, Leiden University Medical Center (LUMC), Netherlands, ⁴Dept. of Nuclear Medicine, Alrijne Hospital, Netherlands, ⁵Dept. of Orthopaedic surgery, Leiden University Medical Center (LUMC), Netherlands, ⁶Section of Nuclear Medicine, dept. of Radiology, Leiden University Medical Center (LUMC), Netherlands, ⁷Section of Nuclear Medicine, dept. of Radiology, Leiden University Medical Center (LUMC), Netherlands

Disclosures: Natasha Appelman-Dijkstra, None

SUN-900

High Resolution Peripheral Quantitative Computed Tomography Supports an Endosteal Origin for Melorheostosis: Investigation of a 10-year-old Patient

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Disclosures: Vinieth N. Bijanki, None

SUN-901

Peptide Receptor Radionuclide Therapy (PRRT) Appears to be Ineffective Therapy for Tumor-Induced Osteomalacia (TIO)

*Iris R. Hartley¹, Damian Wild², Michael S. Hofman³, John W. Delahunty⁴, Michael T. Collins⁵, Rachel I. Gafni⁵. ¹National Institutes of Health, National Institute of Dental and Craniofacial Research, Skeletal Disorders and Mineral Homeostasis Section, United States, ²University Hospital Basel, Center for Neuroendocrine and Endocrine Tumors, Switzerland, ³Peter MacCallum Cancer Center, Centre for Cancer Imaging, Australia, ⁴University of Otago, Department of Medicine, New Zealand, ⁵National Institutes of Health, National Institute of Dental and Craniofacial Research, Skeletal Disorders and Mineral Homeostasis Section, United States

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SUN-902

Transient Osteoporosis of the Hip: A Rare Skeletal Disorder

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Disclosures: Sergio Lizama, None

SUN-903

Novel Point Mutations of the PTK2B Gene Identified in Patients with Hypoparathyroidism and Primary Hyperparathyroidism

*Corine Martineau¹, Harsh Kanwar¹, Dong Li¹, Michael Levine¹. ¹Children's Hospital of Philadelphia, United States

Disclosures: Corine Martineau, None

Mutational analysis of the PHEX gene and genotype-phenotype correlation in 37 Japanese patients with X-linked hypophosphatemic rickets

*Yasuhisa Ohata¹, Takuo Kubota¹, Shinji Takeyari¹, Taichi Kitaoka¹, Yukako Nakano¹, Kei Miyata¹, Chieko Yamada¹, Keiichi Ozono¹, Yasuki Ishihara², Hirofumi Nakayama³, Kenichi Yamamoto⁴, Makoto Fujiwara⁵, Katsusuke Yamamoto⁶, Toshimi Michigami⁷, Hiroyo Mabe⁸, Takeshi Yamaguchi⁹, Katsuyuki Matsui¹⁰, Izumi Tamada¹¹, Noriyuki Namba¹², Akiko Yamamoto¹³, Junya Etoh¹⁴, Azusa Kawaguchi¹⁵. ¹Department of Pediatrics, Osaka University Graduate School of Medicine, Japan, ²The 1st. Department of Oral and Maxillofacial Surgery, Osaka University Graduate School of Dentistry, Japan, ³Department of Pediatrics, Osaka University Graduate School of Medicine; The Japan Environment and Children's Study, Osaka unit center, Japan, ⁴Department of Pediatrics, Osaka University Graduate School of Medicine; Department of Statistical Genetics, Osaka University Graduate School of Medicine, Japan, ⁵Department of Pediatrics, Osaka University Graduate School of Medicine; The 1st. Department of Oral and Maxillofacial Surgery, Osaka University Graduate School of Dentistry, Japan, ⁶Department of Pediatric Nephrology and Metabolism, Osaka Women's and Children's Hospital, Japan, ⁷Department of Bone and Mineral Research, Osaka Women's and Children's Hospital, Japan, ⁸Department of Pediatrics, Kumamoto University Graduate School of Medical Sciences, Japan, ⁹Department of Pediatrics, Hokkaido University Graduate School of Medicine, Japan, ¹⁰Department of Pediatrics, Shiga University of Medical Science, Japan, ¹¹Department of Pediatrics, Imakiire General Hospital, Japan, ¹²Department of Pediatrics, Osaka University Graduate School of Medicine; Department of Pediatrics, Osaka Hospital, Japan Community Healthcare Organization (JCHO), Japan, ¹³Department of Pediatrics, Kumamoto Chuo Hospital, Japan, ¹⁴Department of Pediatrics, Saga-Ken Medical Center Koseikan, Japan, ¹⁵Department of Pediatrics, National Hospital Organization Hokkaido Medical Center, Japan

Disclosures: Yasuhisa Ohata, None

Characterization of Pain in Patients with Fibrous Dysplasia

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Disclosures: Tiahna Spencer, None

Benefits of Long-term Burosumab Persist in 11 Girls with X-Linked Hypophosphatemia (XLH) Who Transitioned into Adolescence during the Phase 2 CL201 Trial

*Michael P. Whyte¹, Thomas O. Carpenter², Wolfgang Högl³, Erik A. Imel⁴, Annemieke Boot⁵, Agnès Linglart⁶, Raja Padidela⁷, William Van't Hoff⁸, Meng Mao⁹, Alison Skrinar⁹, Mary Scott Roberts⁹, Javier San Martín⁹, Anthony A. Portale¹⁰. ¹Shriners Hospitals for Children and Washington University School of Medicine, United States, ²Yale School of Medicine, United States, ³Johannes Kepler University Linz, Austria, ⁴Indiana University School of Medicine, United States, ⁵University of Groningen, Netherlands, ⁶APHP Hôpital Bicêtre Paris Sud, France, ⁷Royal Manchester Children's Hospital, United Kingdom, ⁸Great Ormond Street Hospital, United Kingdom, ⁹Ultragenyx Pharmaceutical Inc., United States, ¹⁰University of California, San Francisco, United States

Disclosures: Michael P. Whyte, Ultragenyx Pharmaceutical Inc., Grant/Research Support

Study on the molecular mechanism of Familial Paget's Disease of Bone with novel pathogenic gene ALS2 mutation

*Hua Yue¹. ¹Department of Osteoporosis and Bone Diseases, Shanghai Jiao Tong University Affiliated Sixth People's Hospital, China

Disclosures: Hua Yue, None

RARE BONE DISEASES: TRANSLATIONAL

- SUN-928 Differential muscle fiber typing and energetics defines a muscle weakness phenotype in HPP sheep**
 *Joshua Bertels¹, Kirby Sherman¹, Alyssa Falck², Shannon Huggins³, Cassandra Skenandore³, Charles Long³, JonPaul Elizondo⁴, Harry Hogan⁴, Jordan Ankerson⁴, Michael Moreno⁴, Sarah White⁵, Larry Suva⁶, Dana Gaddy⁷. ¹Veterinary Integrative Biosciences, Texas A&M University, United States, ²Veterinary Integrative Biosciences, United States, ³Veterinary Physiology and Pharmacology, Texas A&M University, United States, ⁴Department of Mechanical Engineering, Texas A&M University, United States, ⁵Department of Animal Sciences, Texas A&M University, United States, ⁶Department of Veterinary Physiology and Pharmacology, Texas A&M University, United States, ⁷Department of Veterinary Integrative Biosciences, Texas A&M University, United States
Disclosures: Joshua Bertels, None
- SUN-929 Biomechanical characterization of tibial articular cartilage in Hyp mice, a murine model of osteoarthritis in X-linked hypophosphatemia.**
 *Michael Desimone¹, Carolyn Macica¹, Steven Tommasini². ¹Quinnipiac University, United States, ²Yale University, United States
Disclosures: Michael Desimone, None
- SUN-930 Cross-linked collagen peptides as non-invasive urinary biomarkers of bone quality in patients with Osteogenesis Imperfecta**
 *Charlotte Gistelink¹, MaryAnn Weis¹, Jyoti Rai¹, David R. Eyre¹, Brendan Lee². ¹University of Washington, United States, ²Baylor College of Medicine, United States
Disclosures: Charlotte Gistelink, None
- SUN-931 Identification of a critical amino acid residue in ALK2 for the binding and inhibition by the anti-ALK2 blocking antibody**
 *Takenobu Katagiri¹, Sho Tsukamoto¹, Mai Kuratani¹, Shinnosuke Tsuji², Kiyosumi Takaishi², Tomonori Kunikata³, Kensuke Nakamura⁴, Yoshiro Kawaguchi⁴, Jun Hasegawa⁴. ¹Division of Pathophysiology, Research Center for Genomic Medicine, Saitama Medical University, Japan, ²Specialty Medicine Laboratories I, Group I, R&D Division, Daiichi-Sankyo Co., Ltd., Japan, ³Specialty Medicine Laboratories I, Group I, R&D Division, Daiichi-Sankyo Co., Ltd, Japan, ⁴Modality Research Laboratories, Biologics Division, Daiichi-Sankyo Co., Ltd., Japan
Disclosures: Takenobu Katagiri, Daiichi Sankyo Co., Ltd., Grant/Research Support
- SUN-932 Epigenetic regulation of fibrous dysplasia severity in bone: the mirDYS study.**
 *Melanie Legrand¹, Blandine Merle¹, Marjorie Millet¹, Martine Croset¹, Jean Charles Rousseau¹, Elisabeth Sornay-Rendu¹, Olivier Borel¹, Deborah Gensburger², Emmanuelle Vignot², Roland Chapurlat³. ¹INSERM UMR 1033, Université de Lyon, France, ²Division of Rheumatology, Edouard Herriot University Hospital, France, ³Division of Rheumatology, Edouard Herriot University Hospital; INSERM UMR 1033, Université de Lyon, France
Disclosures: Melanie Legrand, None
- SUN-933 Establishment of a first conditional knock in mice as a disease model for autosomal dominant osteopetrosis type II (ADO2)**
 *Shanshan Lv¹, Zhenlin Zhang¹, Chun Wang¹. ¹Shanghai 6th People's hospital, China
Disclosures: Shanshan Lv, None
- SUN-934 Quantitative Increase in T Regulatory Cells Enhances Bone Remodeling In Osteogenesis Imperfecta**
 *Meenal Mehrotra¹, Inhong Kang¹, Shilpak Chatterjee¹, Uday Baliga¹, Yongren Wu¹, Hai Yao¹, Shikhar Mehrotra¹. ¹Medical University of South Carolina, United States
Disclosures: Meenal Mehrotra, None
- SUN-935 Genetic loss of heparanase does not inhibit osteochondromas in Ext1 and Ext2 double heterozygous multiple osteochondroma mouse model.**
 *Kalyan Nannuru¹, Johanna Jimenez¹, Susannah Brydges¹, Andrew Murphy¹, Aris Economides¹, Sarah Hatsell¹. ¹Regeneron Pharmaceuticals Inc, United States
Disclosures: Kalyan Nannuru, Regeneron Pharmaceuticals Inc, Other Financial or Material Support

- SUN-936 Mechanism of Anti-TGF- β Antibody on Osteoblasts and Osteoclasts in Osteogenesis Imperfecta**
 *Nikolai Bukanov¹, Ryan J Russo¹, Benjamin Greene¹, Oxana Ibraghimov-Beskrovnaya¹, Yves Sabbagh¹, Katie Malley², Errin Roberts², Peter Piepenhagen², Sheila Cummings², Susan Ryan². ¹Rare and Neurologic Diseases Research, Sanofi, United States, ²Global Discovery Pathology, Sanofi, United States
Disclosures: Nikolai Bukanov, Sanofi, Other Financial or Material Support
- SUN-937 Metabolic Phenotype in a Mouse Model of Dominant Osteogenesis Imperfecta is Driven by Osteocalcin.**
 *Josephine T. Tauer¹, Svetlana V. Komarova². ¹McGill University, Faculty of Dentistry, Shriners Hospital for Children, Canada, ²McGill University, Faculty of Dentistry, Shriners Hospital for Children, Canada
Disclosures: Josephine T. Tauer, None
- SUN-938 Tmem178 negatively regulates IL-1 β production through inhibition of the NLRP3 inflammasome**
 *Hui Yan¹, Sahil Mahajan¹, Roberta Faccio¹, Yael Alippe², Gabriel Mbalaviele². ¹Department of Orthopaedic Surgery, Washington University in St Louis, United States, ²Division of Bone and Mineral Diseases, Washington University in St Louis, United States
Disclosures: Hui Yan, None
- SARCOPENIA, MUSCLE AND FALLS**
- SUN-957 Impaired Physical Function in Normocalcemic Primary Hiperparathyroidism**
 *Lara Voss¹, Maira Nóbrega¹, Leonardo Bandeira¹, Luiz Griz¹, Francisco Bandeira¹, Pedro Rocha-Filho². ¹Division of Endocrinology & Diabetes, Agamenon Magalhaes Hospital, University of Pernambuco Medical School, Brazil, ²Federal University of Pernambuco Medical School, Brazil
Disclosures: Lara Voss, None
- SUN-958 EWGSOP-2 vs. EWGSOP-1: Impact on Prevalence of Sarcopenia in Postmenopausal Women Aged 60 Years and Older – Preliminary Report**
 *Francisco Fidencio Cons Molina¹, Daniela Garcia Jimenez², Jesus Hairam Castro Maldonado². ¹Centro de Investigación en Artritis y Osteoporosis, Mexico, ²Facultad de Medicina, Universidad Autonoma de Baja California, Mexico
Disclosures: Francisco Fidencio Cons Molina, None
- SUN-959 Which diagnosis of sarcopenia presents greater association with clinical vulnerability?**
 *Alberto Frisoli¹, Jairo Borges², Angela Paes², Antonio Carvalho², Julia Menezes³. ¹Cardio Geriatric Division- Federal University of Sao Paulo, Brazil, ²Cardio Geriatric Division, Brazil, ³Albert Einstein School of medicine, Brazil
Disclosures: Alberto Frisoli, None
- SUN-960 Lower hand grip strength in older adults with non-alcoholic fatty liver disease: a nationwide population-based study**
 *Beom-Jun Kim¹, Seoung Hun Lee¹, Jung-Min Koh¹. ¹Division of Endocrinology and Metabolism, Asan Medical Center, University of Ulsan College of Medicine, Republic of Korea
Disclosures: Beom-Jun Kim, None

SUN-961

Higher Concentrations of Parathyroid Hormone (PTH) are Associated with Reduced Gait Velocity in Adults: A Systematic Review

*Lavanya Srinivasa Murthy¹, Gustavo Duque¹, Natasha A Grande de França², Guillaume T Duval³, Sara Vogrin⁴, Cedric Annweiler⁵. ¹1. Australian Institute for Musculoskeletal Science (AIMSS), The University of Melbourne and Western Health, St. Albans, Victoria, Australia., Australia, ²3. Department of Nutrition, School of Public Health, University of São Paulo, São Paulo, Brazil., Brazil, ³Department of Neuroscience and Aging, Division of Geriatric Medicine and Memory Clinic; Research Centre on Autonomy and Longevity; Angers University Hospital; University of Angers, Angers, France., France, ⁴4. Australian Institute for Musculoskeletal Science (AIMSS), The University of Melbourne and Western Health, St. Albans, Victoria, Australia., Australia, ⁵5. Department of Neuroscience and Aging, Division of Geriatric Medicine and Memory Clinic; Research Centre on Autonomy and Longevity; Angers University Hospital; University of Angers, Angers, France., France

Disclosures: Lavanya Srinivasa Murthy, None

SUN-962

Prevalence of Sarcopenia in Patients with a Recent Fracture According to the revised EWGSOP definition

*Caroline E. Wyers¹, Lisanne Vranken¹, Irma J.A. de Bruin¹, Robert Y. van der Velde¹, Heinrich M.J. Janzing², Sjoerd Kaarsemaker³, Piet P.M. Geusens⁴, Joop P.W. van den Bergh⁵. ¹Department of Internal Medicine, VieCuri Medical Center; NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University; Department of Internal Medicine, Maastricht University, Netherlands, ²Department of Surgery, VieCuri Medical Center, Netherlands, ³Department of Orthopedic Surgery, VieCuri Medical Center, Netherlands, ⁴Department of Internal Medicine, Subdivision of Rheumatology, Maastricht UMC+, Hasselt University, Netherlands, ⁵Department of Internal Medicine, VieCuri Medical Center; NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University; Department of Internal Medicine, Maastricht University; Hasselt University, Netherlands

Disclosures: Caroline E. Wyers, None

SUN-963

Toward a novel muscle anabolic strategy for sarcopenia: targeting the interaction between long noncoding RNA lncRNA-3 and MyoD1 promoter to promote myogenesis

*Zong-Kang Zhang¹, Zhenjian Zhuo¹, Bao-Ting Zhang¹, Daogang Guan², Aiping Lu², Ge Zhang³. ¹School of Chinese Medicine, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong, ²Institute of Integrated Bioinformedicine and Translational Science, School of Chinese Medicine, Hong Kong Baptist University, Hong Kong, ³Institute for Advancing Translational Medicine in Bone & Joint Diseases, School of Chinese Medicine, Hong Kong Baptist University, Hong Kong

Disclosures: Zong-Kang Zhang, None

LATE-BREAKING POSTERS II

12:30 pm - 2:30 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23.

ADULT METABOLIC BONE DISORDERS

LB SUN-972 An Evaluation of the Pharmacodynamic Effects of an Oral hPTH(1-34) formulation in Patients with Hypoparathyroidism

*Yosef Caraco¹, Arthur Santora², Gregory Burshtien², Hillel Galitzer², Ariel Rothner², Anke Hoppe², Phillip Schwartz², Sofia Ish-Shalom², Arthur Santora³, Gregory Burshtien³, Hillel Galitzer³, Ariel Rothner³, Anke Hoppe³, Phillip Schwartz³, Sofia Ish-Shalom³, Yonit Marcus⁴, Vanessa Roach⁴, Auryan Szalat⁵, Liana Tripto-Shkolnik⁶, Elena Segal⁷, Gloria Tsvetov⁸, Merav Fraenkel⁹, Nariman Saba Khazen¹⁰. ¹Hadassah Clinical, Israel, ²Entera Bio Ltd., United States, ³Entera Bio Ltd., Israel, ⁴Tel Aviv Sourasky Medical Center, Israel, ⁵Hadassah Medical Center, Israel, ⁶Chaim Sheba Medical Center, Israel, ⁷Rambam Medical Center, Israel, ⁸Rabin Medical Center, Israel, ⁹Soroka University Medical Center, Israel, ¹⁰Lin Medical Center, Israel

Disclosures: Yosef Caraco, Entera Bio Ltd., Grant/Research Support

BIOMECHANICS AND BONE QUALITY

LB SUN-977 Micro-compression properties of OI bone are not inferior to healthy controls in fixed iliac crest biopsies

*Michael Indermaur¹, Philippe Zysset¹, Daniele Casari², Cinzia Peruzzi², Johann Michler², Jakob Schwiedrzik², Elizabeth Zimmermann³, Frank Rauch³, Bettina Willie³. ¹ARTORG Center, University of Bern, Switzerland, ²EMPA Thun, Switzerland, ³Shriners Hospitals for Children, Canada

Disclosures: Michael Indermaur, None

LB SUN-978 Bone Adaptation to Load is controlled by Local Mechanical Signals with Net Bone Changes Logarithmically Dependent on Loading Frequency

*Ariane C. Scheuren¹, Paul Vallaster¹, Gisela A. Kuhn¹, Angad Malhotra¹, Graeme R. Paul¹, Ralph Müller¹, Yoshitaka Kameo². ¹Institute for Biomechanics, ETH Zurich, Switzerland, ²Institute for Frontier Life and Medical Sciences, Kyoto University, Japan

Disclosures: Ariane C. Scheuren, None

BONE ACQUISITION AND PEDIATRIC BONE DISORDERS

LB SUN-982 Idiopathic Infantile Hypercalcemia- Biochemical and Genetic Studies in Patients with Mild Phenotype

*Nina Lenherr-Taube¹, Etienne Sochett¹. ¹Hospital for Sick Children, Canada

Disclosures: Nina Lenherr-Taube, None

BONE INTERACTIONS WITH MUSCLE AND OTHER TISSUES

LB SUN-987 Is Important the Muscle Health in the Clinical Assessment of Risk of Osteoporotic Fractures?

*Adriana Graciela Diaz¹, Vanina Lerena¹, Sabrina Paola Lucas¹, Beatriz Oliveri², Karina Danilowicz³. ¹Endocrinología, Hospital de Clínicas "José de San Martín"- Universidad de Buenos Aires, Argentina, ²Lab. Enfermedades Metabólicas Oseas, Hospital de Clínicas INIGEM, UBA- CONICET, Argentina, ³Endocrinología, Hospital de Clínicas "Jose de San Martín"- Universidad de Buenos Aires, Argentina

Disclosures: Adriana Graciela Diaz, None

- LB SUN-988** **Developing an in vitro model of CKD-MBD induced α Klotho suppression**
 *Collin Young¹, Nicole LaFave¹, Kirby Tobin¹, Forrest Oberhelman¹, Julia Hum¹, Timothy Waite². ¹Marian University College of Osteopathic Medicine, United States, ²Marian University College of Osteopathic Medicine, United States
Disclosures: Collin Young, None

BONE MARROW MICROENVIRONMENT AND NICHES

- LB SUN-992** **The Effects of Interleukin-1 Receptor Antagonism on Bone Healing and Formation in the Femoral Diaphysis of Young male Fischer-344 Rats.**
 *Sunggi Noh¹, Seungyong Lee¹, Rhonda Prisby¹. ¹The University of Texas at Arlington, United States
Disclosures: Sunggi Noh, None

BONE TUMORS AND METASTASIS

- LB SUN-994** **Distinct Tumor Microenvironments of Lytic and Blastic Bone Metastases in Prostate Cancer Patients**
 *Claire Ihle¹, Meredith Provera², Desiree Straign², E. Erin Smith², Susan Edgerton², Adrie Van Bokhoven², M. Scott Lucia², Philip Owens². ¹Cancer Biology Graduate Program at University of Colorado Anschutz Medical Campus, United States, ²Department of Pathology, University of Colorado Anschutz Medical Campus, United States
Disclosures: Claire Ihle, None

CHONDROCYTES

- LB SUN-997** **Targeting GPCR GRK2 Signalling as a Novel Modulator of Osteoarthritis**
 *Vengadeshprabhu Karuppagounder¹, William Pinamont¹, Michelle Jennette¹, Natalie Yoshioka¹, Gregory Young¹, Adeel Ahmad¹, Reyad Elbarbary¹, Fadia Kamal¹, Michael Zuscik². ¹Penn State College of Medicine, United States, ²University of Rochester Medical Center School of Medicine and Dentistry, United States
Disclosures: Vengadeshprabhu Karuppagounder, None

CLINICAL CASE REPORTS

- LB SUN-1001** **Postsurgical Hypoparathyroidism and Hungry Bone Syndrome after Total Parathyroidectomy for Renal Hyperparathyroidism in a Patient with Possible Nail Patella Syndrome**
 *Andrew Folick¹, Polly Fu¹, Anne Schafer², Dolores Shoback³. ¹Division of Endocrinology and Metabolism, University of California, San Francisco, United States, ²Division of Endocrinology and Metabolism, University of California, San Francisco; Endocrine Research Unit, Department of Veterans Affairs Medical Center, San Francisco, United States, ³Division of Endocrinology and Metabolism, University of California, San Francisco; Endocrine Research Unit, Department of Veterans Affairs Medical Center, United States
Disclosures: Andrew Folick, None

ENERGY METABOLISM, BONE, MUSCLE AND FAT

- LB SUN-1003** **Plasma Sclerostin is Associated with Visceral Adipose Tissue but not Subcutaneous Adipose Tissue in Men and Women in the Framingham Study**
 *Douglas Kiel¹, Timothy Tsai¹, Marian Hannan¹, Thomas Travison¹, Ching-Ti Liu², Clifford Rosen³, Sundeep Khosla⁴, Mary Bouxsein⁵. ¹Hebrew SeniorLife, United States, ²Boston University, United States, ³Maine Medical Center Research Institute, United States, ⁴Mayo Clinic, United States, ⁵Beth Israel Deaconess Medical Center, United States
Disclosures: Douglas Kiel, None

GENOMICS, TRANSCRIPTOMICS, PROTEOMICS AND METABOLOMICS OF MUSCULOSKELETAL DISEASE

- LB SUN-1005** **MicroRNA-1915-3P in serum exosome is associated with disease activity of rheumatoid arthritis in Korea**
*Jihyung Yoo¹, Mi-kyoung Lim², Dong-hyuk Sheen². ¹Cheongyang Healthcare center, Republic of Korea, ²Eulji University Hospital, Republic of Korea
Disclosures: Jihyung Yoo, None

MECHANOBIOLOGY

- LB SUN-1009** **Impaired pericellular matrix production and selection for enhanced cell membrane repair with aging may impair responses to mechanical loading in the aging skeleton**
*Mackenzie Hagan¹, Meghan McGee-Lawrence¹, Kanglun Yu², Brooke Vinson², Jiali Zhu², Sarah Bass², Carlos Isaales², Mark Hamrick², Paul McNeil². ¹Augusta University, United States, ²Augusta University, United States
Disclosures: Mackenzie Hagan, None

MINERAL METABOLISM

- LB SUN-1012** **Calcitriol Elevation is Associated with a Higher Risk of Refractory Hypercalcemia of Malignancy in Solid Tumor**
*Tariq Chukir¹, Azeez Farooki¹, Yi Liu². ¹Memorial Sloan Kettering Cancer Center, United States, ²Lahey Hospital and Medical Center, United States
Disclosures: Tariq Chukir, None

MUSCULOSKELETAL AGING

- LB SUN-1014** **A density-based method to separate young and senescent cells from cultured bone marrow stromal cells**
*Fei Xu¹, Qiang Zhang¹, Law Susan¹, Robert Pignolo¹, Haitao Wang¹. ¹Mayo Clinic, United States
Disclosures: Fei Xu, None

MUSCULOSKELETAL PROGENITOR CELLS AND LINEAGE DETERMINATION

- LB SUN-1018** **Gremlin 1 positive skeletal stem cells play significant role in the skeleton formation and articular cartilage maintenance.**
*Toghrul Jafarov¹, Siddhartha Mukherjee². ¹Columbia University Irving Cancer Research Center, United States, ²Columbia University, Irving Cancer Research Center, United States
Disclosures: Toghrul Jafarov, None
- LB SUN-1019** **Diverse mesenchymal stem cell populations contribute to VEGFA expression in post-traumatic heterotopic ossification.**
*Chase Pagani¹, Charles Hwang¹, Simone Marini¹, Amanda Huber¹, Noelle Visser¹, Kaetlin Vasquez¹, Mohamed Garada¹, Yuji Mishina¹, Shaleish Agarwal¹, Jun Li¹, David Stepien², Michael Sorkin², Benjamin Levi², Shawn Loder³, Aaron James⁴. ¹University of Michigan Medical School, United States, ²University of Michigan, United States, ³University of Pittsburgh Schools of the Health Sciences, United States, ⁴The Johns Hopkins University School of Medicine, United States
Disclosures: Chase Pagani, None

OSTEOBLASTS

LB SUN-1025 Mast Cells Supernatant Inhibit Bone Formation Markers Gene Expression in SHR Osteoblasts

*Sabrina Cruz Tfaile Frasnelli¹, José Vitor Ribeiro Jordão¹, Maria Carolina Linjardi¹, Beatriz Babeto Balassoni¹, Victor Gustavo Balera Brito¹, Ayna E A Barreto¹, Sandra Helena Penha Oliveira¹, Vanessa S Lara², Carlos Ferreira Santos³. ¹São Paulo State University (UNESP), School of Dentistry, Department of Basic Science, Brazil, ²University of São Paulo (USP), Bauru School of Dentistry, Department of Stomatology, Brazil, ³University of São Paulo (USP), Bauru School of Dentistry, Department of Biological Science, Brazil

Disclosures: Sabrina Cruz Tfaile Frasnelli, None

OSTEOCLASTS

LB SUN-1029 Origin and Functions of Osteoclasts and Macrophages in Inflammatory Arthritis

*Christian Jacome-Galarza¹, Julia Charles¹. ¹Brigham and Women's Hospital, United States

Disclosures: Christian Jacome-Galarza, None

LB SUN-1030 Elevated levels of pro-inflammatory cytokines are required for anti-resorptive agent-related osteonecrosis of the Jaw development in mice

*Tomoya Soma¹, Mayu Morita¹, Ryotaro Iwasaki¹, Seiji Asoda¹, Hiromasa Kawana¹, Taneaki Nakagawa¹, Takeshi Miyamoto². ¹Department of Dentistry and Oral Surgery, Keio University School of Medicine., Japan, ²Department of Orthopaedic Surgery, Keio University School of Medicine., Japan

Disclosures: Tomoya Soma, None

LB SUN-1031 PARP1 hinders H2B occupancy at the NFATc1 promoter to restrain the differentiation of macrophages into osteoclasts

*Gabriel Mbalaviele¹, Chun Wang¹. ¹Washington University School of Medicine, United States

Disclosures: Gabriel Mbalaviele, Aclaris Therapeutics, Inc, Consultant

OSTEOCYTES

LB SUN-1036 Osteocyte-specific genes and signaling networks regulated by the large G alpha-subunit XLas

*Qing He¹, Lauren Shumate¹, Jialiang Wang¹, Clarie Remillard¹, Qiuxia Cui¹, Murat Bastepe¹. ¹Massachusetts General Hospital and Harvard Medical School, United States

Disclosures: Qing He, None

LB SUN-1037 Sex and Age Dependent Effects of Dmp1-Cre Mediated Deletion of Nfatc1 on Bone and Skeletal Muscle

*Matt Prideaux¹, Kendra Holliger¹, Anika Shimonty¹, Lynda Bonewald¹. ¹Indiana University, United States

Disclosures: Matt Prideaux, None

LB SUN-1038 Individuals afflicted with Type 2 Diabetes Mellitus show lower femoral endocortical Sclerostin expression along with higher fluorescent advanced glycation endproducts

*Eva Maria Wölfel¹, Katharina Jähn¹, Petar Milovanovic¹, Michael Amling¹, Björn Busse¹, Grazyna Sroga², Deepak Vashishth², Birgit Wulff³, Herbert Mushumba³, Klaus Püschel³.

¹Department of Osteology and Biomechanics, University Medical Center Hamburg-Eppendorf, Germany, ²Rensselaer Polytechnic Institute, United States, ³Department of Forensic Medicine, University Medical Center Hamburg-Eppendorf, Germany

Disclosures: Eva Maria Wölfel, None

OSTEOPOROSIS - ASSESSMENT

LB SUN-1044 Age- and Sex-Related Spatial Differences in vBMD using HR-pQCT and voxel-based morphometry (VBM)

*Andrew Burghardt¹, Galateia Kazakia¹, Thomas Link¹, Sharmila Majumdar¹, Anthony Pagliaro², Julio Carballido-Gamio³. ¹Department of Radiology and Biomedical Imaging, University of California, San Francisco, United States, ²Department of Bioengineering, University of Colorado Denver, United States, ³Department of Radiology, University of Colorado Anschutz Medical Campus, United States

Disclosures: Andrew Burghardt, None

LB SUN-1045 Fragility Fractures are a Consequence of Microstructural Deterioration Captured by Estimated Failure Load, not Bone Mineral Density

*Ali Ghasem-Zadeh¹, Xiao-Fang Wang¹, Minh Bui², Steven Boyd³, Ego Seeman⁴.

¹Departments of Endocrinology and Medicine, Austin Health, The University of Melbourne, Australia, ²Centre for Epidemiology and Biostatistics, Melbourne School of Population and Global Health, The University of Melbourne, Australia, ³McCaig Institute for Bone and Joint Health, University of Calgary, Canada, ⁴Departments of Endocrinology and Medicine, Austin Health, The University of Melbourne, AND4Mary Mackillop Institute for Healthy Aging, Australian Catholic University, Australia

Disclosures: Ali Ghasem-Zadeh, StrAx Corp, Consultant

LB SUN-1046 Low Trabecular Bone Score with or without osteoporosis is differentially linked to distinct clinical conditions.

*Vanessa Rouach¹, Iris Yaish¹, Mira Arbiv¹, Naftali Stern¹. ¹Tel Aviv Sourasky medical center, Israel

Disclosures: Vanessa Rouach, None

LB SUN-1047 Concordant osteopenia have similar FRAX assessed fracture risk with discordant osteoporosis in postmenopausal women

*Injoo Kim¹, Keunyoung Kim¹, Seon-Jang Kim², Eunheui Kim³, Yunkyoung Jeon³, Wook Yi⁴. ¹Department of Nuclear Medicine and Biomedical Research Institute, Pusan National University Hospital, Busan, Republic of Korea, Republic of Korea, ²Department of Nuclear Medicine and Research Institute for Convergence of Biomedical Science and Technology, Yangsan Pusan National University Hospital, Yangsan, Republic of Korea, Republic of Korea, ³Department of Internal Medicine and Biomedical Research Institute, Pusan National University Hospital, Busan, Republic of Korea, Republic of Korea, ⁴Department of Internal Medicine and Biomedical Research Institute, Pusan National University Hospital, Busan, Republic of Korea, Republic of Korea

Disclosures: Injoo Kim, None

OSTEOPOROSIS - EPIDEMIOLOGY

LB SUN-1053 Impact of Disease Definition, Frailty Status and Functional Impairments on Hip Fracture and Mortality Incidence Among Late-Life Women

*Kristine Ensrud¹, Susan Diem¹, Allyson Kats², Lisa Langsetmo², John Schousboe³, Cynthia Boyd⁴, Sarah Berry⁵, Carolyn Crandall⁶, Jane Cauley⁷, Brent Taylor⁸, Douglas Bauer⁹, Katie Stone¹⁰. ¹University of Minnesota / Minneapolis VA Health Care System, United States,

²University of Minnesota, United States, ³HealthPartners Institute / University of Minnesota, United States, ⁴Johns Hopkins University, United States, ⁵Harvard University, United States,

⁶University of California - Los Angeles, United States, ⁷University of Pittsburgh, United States, ⁸Minneapolis VA Health Care System / University of Minnesota, United States,

⁹University of California - San Francisco, United States, ¹⁰California Pacific Medical Center Research Institute, United States

Disclosures: Kristine Ensrud, None

LB SUN-1054 Ethnic differences in prevalent fractures and bone mineral density: the Canadian Longitudinal Study of Aging

*Suzanne N Morin¹, Elham Rahme¹, David Goltzman¹, Claudie Berger², Alexandra Papaioannou³, Angela M Cheung⁴, William D Leslie⁵. ¹McGill University, Canada, ²Research Institute of the McGill University Health Centre, Canada, ³McMaster University, Canada, ⁴University of Toronto, Canada, ⁵University of Manitoba, Canada

Disclosures: Suzanne N Morin, None

OSTEOPOROSIS - NUTRITION, DIETARY SUPPLEMENTS AND PHYSICAL ACTIVITY

LB SUN-1064 Dairy Supplementation in Institutionalized Older Adults: a 2-Year Cluster Randomized Study

*Sandra Iuliano¹, Shirley Poon¹, Judy Robbins¹, Xiaofang Wang¹, Marta Van Loan², Lars Rejnmark³, Lisette De Groot⁴, Tuan Nyugen⁵, Ego Seeman⁶. ¹University of Melbourne / Austin Health, Australia, ²University of California, United States, ³Aarhus University, Denmark, ⁴Wageningen University, Netherlands, ⁵Garvan Institute of Medical Research, Australia, ⁶University of Melbourne / Australian Catholic University, Australia

Disclosures: Sandra Iuliano, None

LB SUN-1065 Development of VDDQ-J (Vitamin D Deficiency Questionnaire for Japanese): A Novel Screening Tool for Vitamin D Deficiency for Japanese

*Akiko Kuwabara¹, Naoko Tsugawa², Honami Ogasawara², Kei Mizuno³, Yasuyoshi Watanabe³, Kiyoshi Tanaka⁴. ¹Department of Clinical Nutrition, Faculty of Comprehensive Rehabilitation, Osaka Prefecture University, Japan, ²Department of Health and Nutrition, Osaka Shoin Women's University, Japan, ³RIKEN Compass to Healthy Life Research Complex Program, Japan, ⁴Department of Faculty of Nutrition, Kobe Gakuin University, Japan

Disclosures: Akiko Kuwabara, None

OSTEOPOROSIS - TREATMENT

LB SUN-1071 Long-term effects of calcium supplementation on high-sensitivity cardiac troponin I in older women: analysis of samples from a 5-year double-blind randomized controlled trial

*Joshua Lewis¹, Jonathan Hodgson¹, Wai Lim², Kun Zhu², Richard Prince², John Schousboe³, Elizabeth Byrnes⁴, Richard Woodman⁵, Peter Thompson⁶, Douglas Kiel⁷. ¹Edith Cowan University, Australia, ²University of Western Australia, Australia, ³Park Nicollet Osteoporosis Center and Institute for Research and Education, United States, ⁴PathWest, Sir Charles Gairdner Hospital, Australia, ⁵Flinders University, Australia, ⁶Sir Charles Gairdner Hospital, Australia, ⁷Hinda and Arthur Marcus Institute for Aging Research, Hebrew SeniorLife, United States

Disclosures: Joshua Lewis, None

LB SUN-1072 Tool for estimating risk of Atypical Femur Fractures

*George Tomlinson¹, Lianne Tile¹, Angela M. Cheung¹, Derek Latremouille², Aliya Khan³, Jonathan D. Adachi³, Adrian Lau⁴. ¹University of Toronto / University Health Network, Canada, ²University of Toronto, Canada, ³McMaster University, Canada, ⁴University of Toronto / Women's College Hospital, Canada

Disclosures: George Tomlinson, None

PARACRINE REGULATORS

LB SUN-1075 Synthetic Nanofibrous Microenvironments Modulate Osteoclast Activity and are a Promising Tool Towards Guiding Secretome-Mediated Bone Regeneration

*W Benton Swanson¹. ¹University of Michigan, United States

Disclosures: W Benton Swanson, None

PRECLINICAL MODELS OF MUSCULOSKELETAL DISORDERS

LB SUN-1078 **The Role of Leukotrienes on Cartilage Proteomic Profiling in Rheumatoid Arthritis In Vivo**

*Cintia Tokuhara¹, Talita Ventura¹, Joao Paulo Domezi¹, Adriano Pessoa¹, Gabriela Oliveira¹, Mariana Sanches¹, Mariana Santesso¹, Adriana Matos¹, Marilia Buzalaf¹, Rodrigo Oliveira¹, Flavia Oliveira², Vimal Veeriah², Jose Burgos Ponce³. ¹University of São Paulo, Brazil, ²Sanford Burnham Prebys Medical Discovery Institute, United States, ³University Center of Adamantina, Brazil

Disclosures: Cintia Tokuhara, None

PRECLINICAL MODELS: NUTRITION AND PHARMACOLOGY

LB SUN-1081 **Mass Cytometry Reveals Rare Bone Marrow Stromal Cell Populations Targeted by Abaloparatide and Teriparatide**

*Marc Wein¹, Christian Castro¹, Christopher Janton¹, Deepak Balani¹, Henry Kronenberg¹, Nicolas Severe², David Scadden², Murat Karabacak³, Beate Lanske⁴. ¹MGH Endocrine Unit, United States, ²MGH Center for Regenerative Medicine, United States, ³MGH Center for Engineering in Medicine, United States, ⁴Radius Health, United States

Disclosures: Marc Wein, Radius Health Inc, Grant/Research Support

RARE BONE DISEASES - CLINICAL

LB SUN-1083 **De novo missense mutation in SP7 in a patient with cranial hyperostosis, long bone fragility, and increased osteoblast number**

*Julian Lui¹, Youn Hee Jee¹, Jeffrey Baron¹, Adalbert Raimann², Gabriele Haeusler², Lijin Dong³, Hironori Hojo⁴, Paul Roschger⁵, Nadja Fratzl-Zelman⁵. ¹Section on Growth and Development, NICHD, United States, ²Department of Paediatrics and Adolescent Medicine, Medical University of Vienna, Austria, ³Genetic Engineering Core, NEI, United States, ⁴Center for Disease Biology and Integrative Medicine, The University of Tokyo, Japan, ⁵Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUA Trauma Centre, Hanusch Hospital, Austria

Disclosures: Julian Lui, None

RARE BONE DISEASES - TRANSLATIONAL

LB SUN-1086 **A clinical update on BLU-782, an investigational selective ALK2 inhibitor in development for fibrodysplasia ossificans progressiva (FOP)**

*Alison Davis¹, Faris Albayya¹, Riadh Lobbardi¹, Michael Palmer¹, Cori Ann Sherwin¹, Sara Green¹, Faith Stevison¹, Sean Kim¹, Gordon Wilkie¹, Vivek Kadambi¹, Marion Dorsch¹, Andy Boral¹, Timothy LaBranche¹, Mark Hurtt², Robert Schwabb³, Rachel Stewart⁴, Morgan Lyon⁴, Rachel Pauplis⁴. ¹Blueprint Medicines, United States, ²Hurtt Consulting, United States, ³Celerion, United States, ⁴Invicro, United States

Disclosures: Alison Davis, Blueprint Medicines, Other Financial or Material Support

ORAL POSTER SESSION II

12:45 pm - 1:35 pm

Orange County Convention Center
West Hall C

New this year! Come hear a select number of plenary poster presenters give an overview of their poster on digital touch screen displays. Following the oral poster presentations, visit their poster board to ask questions and continue the discussion.

BASIC & TRANSLATIONAL

12:45 pm

FRI-442

ASBMR 2019 Annual Meeting Young Investigator Award

Macrophage-Lineage TRAP+ Cells Recruit Periosteum-Derived Cells for Periosteal Osteogenesis and Regeneration

*Ruoxian Deng¹, Bo Gao², Yu Chai³, Hao Chen³, Bo Hu³, Xiao Wang³, Shouan Zhu³, Shuangfei Ni³, Yong Cao³, Mei Wan³, Liu Yang⁴, Zhuojing Luo⁴, Xu Cao⁵. ¹Department of Orthopaedic Surgery, Department of Biomedical Engineering, The Johns Hopkins University School of Medicine, United States, ²Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine; Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, United States, ³Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine, United States, ⁴Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, China, ⁵Department of Orthopaedic Surgery, Institute of Cell Engineering, The Johns Hopkins University School of Medicine, United States

Disclosures: Ruoxian Deng, None

12:50 pm

FRI-286

ASBMR 2019 Fund for Research and Education Young Investigator Award

Sptbn1 disruption increases osteocyte membrane fragility, leading to impaired cell viability and a blunted mechanotransduction response following mechanical loading

*Mackenzie Hagan¹, Kanglun Yu¹, Eric Stokes¹, Sarah Bass¹, Mohamed Awad¹, Mohammed Elsalanty¹, Paul McNeil¹, Rachel Roberts², Daniel Perrien³, James Ervasti⁴, Mark Hamrick⁵, Meghan McGee-Lawrence⁵. ¹Augusta University, United States, ²Augusta, United States, ³Vanderbilt University, United States, ⁴University of Minnesota, United States, ⁵Medical College of Georgia, Augusta University, United States

Disclosures: Mackenzie Hagan, None

12:55 pm

FRI-287

Irisin Attenuates Osteoarthritis by Inhibiting Apoptosis of Osteocyte through Activating Erk Signaling Pathway

*Zihao He¹, Zhifeng Yu¹. ¹Shanghai Jiao Tong University, China

Disclosures: Zihao He, None

1:00 pm

FRI-357

Prevention of ectopic calcification by MGP: The role of its conserved residues

*Abhinav Parashar¹, Juliana Marulanda¹, Omar Al Rifai², Mathieu Ferron³, Monzur Murshed⁴. ¹Faculty of Dentistry, McGill University, Canada, Canada, ²University of Montreal, Canada, Canada, ³Department of Biochemistry and Nuclear Medicine, University of Montreal, Canada, ⁴Faculty of Medicine, McGill University, Canada, Canada

Disclosures: Abhinav Parashar, None

1:05 pm

FRI-388

Characterization of a novel perivascular DMP1+ osteoprogenitor associated with trans-cortical channels of long bone

*Sierra Root¹, Natalie Wee¹, Sanja Novak¹, Ivo Kalajzic¹, Brya Matthews². ¹Department of Reconstructive Sciences, University of Connecticut Health Center, United States, ²Department of Molecular Medicine, University of Auckland, New Zealand

Disclosures: Sierra Root, None

1:10 pm

FRI-728

TRAF3 in mesenchymal progenitor cells limits low-level chronic inflammation associated with osteoporosis by inhibiting GSK-3 β induced NF-KB activation

*Akram Ayoub¹, Rong Duan², Jinbo Li², Lianping Xing², Zhenqiang Yao², Brendan Boyce². ¹University of Rochester Medical Center, United States, ²University of Rochester Medical Center, United States

Disclosures: Akram Ayoub, None

1:15 pm
FRI-337

Improved Skeletal Phenotype And Accelerated Intramembranous Bone Healing Post Tooth Extraction in Alox5 Knockout Senescent Female Mice

*Claudia Bigueti¹, Ramez Mahamoud¹, Gustavo Simionato¹, André Oliva¹, Mariza Matsumoto¹, Isabela Custódio², Jesus Andreo³, Marco Brotto⁴, Walid Fakhouri⁵, Chenglin Mo⁶. ¹School of Dentistry of Araçatuba, São Paulo State University, FOA/UNESP, Brazil, ²School of Dentistry, Universidade Sagrado Coração, USC, Brazil, ³School of Dentistry of Bauru, University of São Paulo, FOB/USP, Brazil, ⁴Bone-Muscle Research Center, Nursing Program, University of Texas at Arlington, UTA, United States, ⁵Center for Craniofacial Research, School of Dentistry, The University of Texas Health Science Center at Houston, United States, ⁶University of Texas at Arlington, United States

Disclosures: Claudia Bigueti, None

1:20 pm
FRI-236

Identification of Genetic Variants for Peak Bone Mineral Content in Young Adult Women

*Jai Prakash¹, Fiona E McGuigan¹, Holger Luthman¹, Kristina E Akesson¹. ¹Lund University, Sweden

Disclosures: Jai Prakash, None

1:25 pm
FRI-238

Lipidomic and Metabolomic Profiles in Women with Low and High Bone Mineral Density: Searching for Early Serum Metabolic Biomarkers for Osteoporosis Risk

*Chenglin Mo¹, Zhiying Wang¹, Marco Brotto¹, Kuan-Jui Su², Hongwen Deng², Lynda Bonewald³. ¹Bone-Muscle Research Center, College of Nursing and Health Innovation, the University of Texas-Arlington, United States, ²Tulane Center of Bioinformatics and Genomics, Department of Global Biostatistics and Data Science, Tulane University, United States, ³Musculoskeletal Research Center, Indiana Medical School, Indiana University, United States

Disclosures: Chenglin Mo, None

1:30 pm
FRI-240

Genome-wide association meta-analysis identifies six loci for osteocalcin levels

*Yi-Hsiang Hsu¹, David Karasik¹, Douglas P. Kiel¹, Alexander Teumer², Katerina Trajanoska³, Fernando Rivadeneira³, On Behalf of GEFOS and CHARGE Consortia⁴. ¹Hinda and Arthur Marcus Institute for Aging Research, Hebrew SeniorLife, United States, ²Institute of Community Medicine, University of Greifswald, Germany, ³Department of Internal Medicine, Erasmus MC University, Netherlands, ⁴Consortia, Netherlands

Disclosures: Yi-Hsiang Hsu, None

CLINICAL

12:45 pm
FRI-631

Five-fold Increased Atypical Femur Fracture Risk Among North American Asians is Similar Across Asian Ethnic Subgroups and Is Not Explained by Confounding Variables

*Annette Adams¹, Bonnie Li¹, Denison Ryan¹, Richard Dell¹, Erik Geiger², Dennis Black². ¹Kaiser Permanente Southern California, United States, ²University of California, San Francisco, United States

Disclosures: Annette Adams, None

12:50 pm
FRI-589

MRI-based textural analysis of trabecular bone: a novel method for opportunistic screening of bone quality

*Jonathan Cheah¹, Matthew Koff¹, Ryan Breighner¹, Bin Lin¹, Mikas Grewal¹, Emily Stein¹, Conor Jones², Janice Havasy². ¹Hospital for Special Surgery, United States, ²Weill Cornell Medicine, United States

Disclosures: Jonathan Cheah, None

12:55 pm
FRI-708

Effectiveness of Resistance and Jump Training or Machine-based Isometric Training for Middle-aged and Older Men with Osteopenia and Osteoporosis: LIFTMOR for Men Trial Preliminary Findings

*Amy T Harding¹, Benjamin K Weeks¹, Lisa J Weis², Conor Lambert³, Steven L Watson³, Belinda R Beck³. ¹School of Allied Health Sciences, Griffith University, Australia, ²The Bone Clinic, Australia, ³School of Allied Health Sciences, Australia

Disclosures: Amy T Harding, None

- 1:00 pm
FRI-709** **ASBMR 2019 Annual Meeting Young Investigator Award**
High impact exercise increased femoral neck bone density with no adverse effects on imaging markers of knee osteoarthritis in postmenopausal women
*Chris Hartley¹, Jonathan P Folland¹, Katherine Brooke-Wavell¹, Robert Kerslake².
¹NCSEM, SSEHS, Loughborough University, United Kingdom, ²Nottingham University Hospitals Trust, United Kingdom
Disclosures: Chris Hartley, None
- 1:05 pm
FRI-598** **Prevalence of Spinal Osteoporosis in Women and Men Considering Both Bone Strength and Volumetric BMD — A Comparison of Caucasians (in the United States) and Koreans (in Korea)**
*David C. Lee¹, Namki Hong², Yumie Rhee², Sundeep Khosla³, Tony M. Keaveny⁴. ¹O.N. Diagnostics, United States, ²Yonsei University College of Medicine, Republic of Korea, ³Mayo Clinic, United States, ⁴University of California, Berkeley, United States
Disclosures: David C. Lee, O.N. Diagnostics, Other Financial or Material Support
- 1:10 pm
FRI-597** **ASBMR 2019 Annual Meeting Young Investigator Award**
Comparison of the predictive ability of quantitative and qualitative scoring methods of osteoporotic vertebral fractures using operational skeletal fragility outcomes
*Fjorda Koromani¹, Katerina Trajanoska¹, Ling Oei¹, Carola Zillikens¹, Gabriel Krestin¹, Andre Uitterlinden¹, Edwin Oei¹, Fernando Rivadeneira¹, Enisa Shevroja². ¹Erasmus MC, Netherlands, ²Lausanne University Hospital, Switzerland
Disclosures: Fjorda Koromani, None
- 1:15 pm
FRI-594** **External bone size predicts age-changes in femoral neck structure and mass leading to increased fracture risk independent of bone mineral density: Findings from the Study of Women's Health Across the Nation and the Study of Osteoporotic Fractures in Men**
*Karl Jepsen¹, Carrie Karvonen-Gutierrez¹, Sioban Harlow¹, John Randolph¹, Gregory Clines¹, Michelle Hood¹, Michael Elliott¹, Kathy Peters², Stephanie Harrison², Peggy Cawthon², Jane Cauley³, Gail Greendale⁴, Arun Karlamangla⁴, Eric Orwoll⁵. ¹University of Michigan, United States, ²California Pacific Medical Center Research Institute, United States, ³University of Pittsburgh, United States, ⁴University of California, Los Angeles, United States, ⁵Oregon Health and Science University, United States
Disclosures: Karl Jepsen, None
- 1:20 pm
FRI-599** **Measured Height Loss Predicts Incident Clinical Fractures Independently from FRAX: A Registry-Based Cohort Study**
*William Leslie¹, Lisa Lix¹, John Schousboe², Suzanne Morin³, Patrick Martineau⁴, Helena Johansson⁵, John Kanis⁵, Eugene McCloskey⁶, Nicholas Harvey⁷. ¹University of Manitoba, Winnipeg, Canada, Canada, ²Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US; University of Minnesota, Minneapolis, US, United States, ³McGill University, Montreal, Canada, Canada, ⁴University of Manitoba, Winnipeg, Canada; Harvard Medical School, Boston, US, Canada, ⁵Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK; Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, United Kingdom, ⁶Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, ⁷MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK; NIHR Southampton Biomedical Research Centre, University of Southampton and University Hospital Southampton NHS Foundation Trust, Southampton, UK, United Kingdom
Disclosures: William Leslie, None
- 1:25 pm
FRI-641** **Differential Risk of Fracture Attributable to Type 2 Diabetes Mellitus According to Skeletal Site**
*John Schousboe¹, Suzanne Morin², Patrick Martineau³, Lisa Lix⁴, William Leslie⁴. ¹Park Nicollet Clinic and HealthPartners Institute, United States, ²Research Institute of the McGill University Health Centre, Canada, ³University of Manitoba and Harvard University, Canada, ⁴University of Manitoba, Canada
Disclosures: John Schousboe, None

1:30 pm
FRI-642

Associations of Clinically Unrecognized vs Clinically Recognized Vertebral Fracture with Subsequent Mortality

*John Schousboe¹, Lisa Lix², William Leslie², Suzanne Morin³. ¹Park Nicollet Clinic and HealthPartners Institute, United States, ²University of Manitoba, Canada, ³Research Institute of the McGill University Health Centre, Canada

Disclosures: John Schousboe, None

POSTER SESSION III

12:00 pm - 2:00 pm

Orange County Convention Center
West Hall C

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23.

ADULT METABOLIC BONE DISORDERS

MON-16

Association of Full Metabolic Syndrome and its Components with T-score (spine) in Saudi Adults with Low Bone Mineral Density

*Nasser Al-Daghri¹, Kaiser Wani¹, Sobhy Yakout¹, Mohammed Ghouse Ahmed Ansari¹, Shaun Sabico¹, Syed Danish Hussain¹, Majed Alokail¹, Eman Sheshah², Naji Aljohani³, Yousef Al-Saleh⁴, Jean-Yves Reginster⁵. ¹King Saud University, Saudi Arabia, ²King Salman bin Abdulaziz Hospital, Saudi Arabia, ³King Fahad Medical City, Saudi Arabia, ⁴King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia, ⁵Liege University, Belgium

Disclosures: Nasser Al-Daghri, None

MON-17

The Spot Urine Calcium:Creatinine Ratio Does Not Reliably Predict Hypercalciuria: A Cross-sectional Study

*Emma Billington¹, Lauren Burt¹, Steven Boyd¹, David Hanley¹. ¹University of Calgary, Canada

Disclosures: Emma Billington, Amgen, Consultant, Amgen, Grant/Research Support, Eli Lilly, Consultant

MON-18

The Effect of TransCon PTH, a Long-acting PTH (1-34) on Serum and Urine Phosphate in Healthy Subjects and Design of the PaTH Forward Phase 2 Trial

*David B. Karpf¹, Sanchita Mourya², Denka Markova², Zhengning Lin², Eshwari Kovoor², Jonathan A. Leff². ¹Ascendis Pharma & Stanford University School of Medicine, United States, ²Ascendis Pharma, United States

Disclosures: David B. Karpf, Ascendis Pharma, Other Financial or Material Support

MON-19

A single-center, retrospective chart review evaluating the accuracy of an operational definition of postoperative hypoparathyroidism used to query the Korean National Health Insurance Database

*Joon-Hyop Lee¹, Davaatseren Munkhtugs¹, Sihoon Lee¹, Song Vogue Ahn², Yong Jun Choi³, Erin Bove-Fenderson⁴, Michael Mannstadt⁵. ¹Laboratory of Genomics and Translational Medicine, Gachon University College of Medicine, Republic of Korea, ²Department of Health Convergence, Ewha Womans University, Republic of Korea, ³Department of Endocrinology and Metabolism, Ajou University School of Medicine, Republic of Korea, ⁴Endocrine Unit, Massachusetts General Hospital, United States, ⁵Endocrine Unit, Massachusetts General Hospital and Harvard Medical School, United States

Disclosures: Joon-Hyop Lee, None

MON-20

Diagnostic Accuracy of Intraoperative Serum Parathyroid Hormone Testing to predict the result of Parathyroidectomy in secondary hyperparathyroidism in Chronic Kidney Disease

*Betiana Mabel Perez¹, Ariela Verónica Kitaigrodsky¹, Maria Diehl¹, Guillermo Rosa-Diez¹, Marcelo Fernando Figari¹, Andrea Elina Kozak¹, Luisa Carmen Plantalech¹. ¹Hospital Italiano de Buenos Aires, Argentina

Disclosures: Betiana Mabel Perez, None

- MON-21 Evaluation of Cortical Microarchitecture and Biomechanical Properties 6-12 Months after Atypical Femoral Fracture**
 *Mariana Perez¹, Diogo Domiciano¹, Rosa Pereira¹, Vanda Jorgetti². ¹Bone Laboratory Metabolism, Rheumatology Division, Hospital das Clinicas HCFMUSP, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, Brazil (BR), Brazil, ²Nephrology Division, Hospital das Clinicas HCFMUSP, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, Brazil (BR), Brazil
Disclosures: Mariana Perez, None
- MON-22 Relationship Between Serum Osteocalcin And Testosterone Secretion And Metabolic Factors In Male Idiopathic Hypogonadotropic Hypogonadism Patients**
 *Yuying Yang¹, Hongyan Zhao², Shouyue Sun², Jianmin Liu². ¹Department of Endocrine and Metabolic Diseases, Rui-jin Hospital, Shanghai Jiao-tong University School of Medicine, China, ²Department of Endocrine and Metabolic Diseases, Rui-jin Hospital, Shanghai Jiao-tong University School of Medicine, China
Disclosures: Yuying Yang, None
- BIOMECHANICS AND BONE QUALITY**
- MON-57 Obesity History Influences Bone Health Independently from Diet Composition, but Bone can be Improved with Moderate Intensity Aerobic Exercise Training**
 *Beatriz Bermudez¹, R Dana Carpenter¹, Rebecca M Foright², David M Presby², Ginger C Johnson², Janine A Higgins², Matthew R Jackman², Julie A Houck², Paul S MacLean², Vanessa D Sherk². ¹University of Colorado Denver, United States, ²University of Colorado Anschutz Medical Campus, United States
Disclosures: Beatriz Bermudez, None
- MON-58 The feasibility of high-resolution peripheral quantitative computed tomography (HR-pQCT) in patients with a suspected scaphoid fracture**
 *Melissa S.A.M. Bevers¹, Anne M. Daniëls², Caroline E. Wyers³, Bert van Rietbergen⁴, Piet P.M.M. Geusens⁵, Sjoerd Kaarsemaker⁶, Heinrich M.J. Janzing⁷, Pascal F.W. Hannemann⁸, Martijn Poeze⁹, Joop P.W. van den Bergh¹⁰. ¹Department of Biomedical Engineering, Eindhoven University of Technology, Netherlands, ²Department of Surgery, VieCuri Medical Centre; NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University, Netherlands, ³Department of Internal Medicine, VieCuri Medical Centre; NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University; Department of Internal Medicine, Maastricht University Medical Centre, Netherlands, ⁴Department of Biomedical Engineering, Eindhoven University of Technology; Department of Orthopaedic Surgery, Research School CAPHRI, Maastricht University Medical Centre, Netherlands, ⁵Department of Internal Medicine, Maastricht University Medical Centre; Faculty of Medicine, Hasselt University, Netherlands, ⁶Department of Orthopaedic Surgery, VieCuri Medical Centre, Netherlands, ⁷Department of Surgery, VieCuri Medical Centre, Netherlands, ⁸Department of Surgery and Trauma Surgery, Maastricht University Medical Centre, Netherlands, ⁹NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University; Department of Surgery and Trauma Surgery, Maastricht University Medical Centre, Netherlands, ¹⁰Department of Internal Medicine, VieCuri Medical Centre; NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University; Department of Internal Medicine, Maastricht University Medical Centre; Hasselt University, Netherlands
Disclosures: Melissa S.A.M. Bevers, None
- MON-59 Metacarpal diaphyses predict whole bone strength and porosity across bone sites**
 *Erin Bigelow¹, Daniella Patton¹, Antonio Ciarelli¹, Robert Goulet¹, Stephen Schlecht¹, Carrie Karvonen-Gutierrez¹, Siobán Harlow¹, David Kohn¹, Karl Jepsen¹, Todd Bredbenner². ¹University of Michigan, United States, ²University of Colorado Colorado Springs, United States
Disclosures: Erin Bigelow, None

- MON-60** **Normalized FE-Predicted Failure Load With BMD: A Potentially Better Tool Than BMD Alone To Classify Osteoporotic Fragility Fracture Risk in Post-Menopausal Chinese Women**
 *Manju Chandran¹, Nithin Manohar Rayadu², D Anitha², Sasirekha Duraisamy², Karupppasamy Subburaj², Butch Magsombol³, David Ng Chee Eng³. ¹Osteoporosis and Bone Metabolism Unit, Department of Endocrinology, Singapore General Hospital, Singapore, ²Engineering Product Development Pillar, Singapore University of Technology and Design, Singapore, ³Department of Nuclear Medicine and Molecular Imaging, Singapore General Hospital, Singapore
Disclosures: Manju Chandran, None
- MON-61** **Effects of Combination Mechanical Loading and Raloxifene Treatment on Bone Matrix Composition and Mechanical Properties**
 *John Damrath¹, Alycia Berman¹, Joseph Wallace². ¹Purdue University, United States, ²Indiana University - Purdue University Indianapolis, United States
Disclosures: John Damrath, None
- MON-62** **Fatigue Life Variation in Secondary Osteonal Bone is Primarily Determined by Vascular Canal Diameter Rather Than Generalized Porosity**
 *W. Brent Edwards¹, Lindsay L. Loundagin², Ifaz T. Haider². ¹University of Calgary, Canada, ²University Of Calgary, Canada
Disclosures: W. Brent Edwards, None
- MON-63** **Attenuation of visible and near-infrared light signals in murine cortical bone**
 *Lennart Martin Bittermann¹, Graeme Campbell¹, Claus-Christian Glueer¹, Angelika Schmalzl². ¹Section Biomedical Imaging, Molecular Imaging North Competence Center (MOIN CC), Department of Radiology and Neuroradiology, University Hospital Schleswig Holstein (UKSH), Kiel University, Germany, Germany, ²Department of Medicine I, University Medical Center, Friedrich-Alexander University Erlangen-Nuremberg, Germany, Germany
Disclosures: Lennart Martin Bittermann, None
- MON-64** **Effect of Microstructure on Indentation Fracture in Equine Cortical Bone**
 *Kevin Hoffseth¹, Henry Yang². ¹LSU Department of Biological Engineering, United States, ²UC Santa Barbara, United States
Disclosures: Kevin Hoffseth, None
- MON-65** **Further analysis to investigate structural differences between femoral neck and trochanteric fracture cases**
 *Benjamin CC Khoo¹, Keenan Brown², Joshua Lewis³, Richard Prince⁴. ¹Sir Charles Gairdner Hospital, Australia, ²Mindways Software, United States, ³Edith Cowan University, Australia, ⁴University of Western Australia, Australia
Disclosures: Benjamin CC Khoo, None
- MON-66** **A Feasibility Study Using the Texture Research Imaging Platform (TRIP) to Assess Bone Texture on VFA Lateral Spine Images to Discriminate Vertebral Fracture: Application of a Modified TBS Algorithm**
 *Ryleigh White¹, Diane Krueger¹, Neil Binkley¹, Enisa Shevroja², Olivier Lamy², Elena Gonzalez Rodriguez², Francois De Guio³, Franck Michelet³, Didier Hans⁴. ¹University of Wisconsin Osteoporosis Research Program, United States, ²Center of Bone Diseases, Bone and Joint Department, Lausanne University Hospital, Switzerland, ³Research & Development Department, Medimaps, France, ⁴Center of Bone Diseases, Bone and Joint Department, Lausanne University Hospital, Research & Development Department, Medimaps, Switzerland
Disclosures: Ryleigh White, None

- MON-67** **Hind Limb Unloading-Induced Bone Loss Bears no Relationship with Bone Marrow Adipose Tissue in Thermoneutral Condition.**
 *Carmelo Mastrandrea¹, Laura Peuriere¹, Marie-Thérèse Linossier¹, Laurence Vico¹, Marie-Hélène Lafage-Proust¹, Natalia Maria Zapata-Linares², Xavier Houard². ¹INSERM U1059-Université De Lyon, France, ²Centre de Recherche Saint-Antoine UMRS 9386; Université Pierre et Marie Curie, France
Disclosures: Carmelo Mastrandrea, None
- MON-68** **New approaches for bone regeneration in Diabetes Mellitus: comparing MSC Cell Sheets and Collagen Membrane, associated or not with Photobiomodulation Therapy**
 *Ana Clara Pedroni¹, Maria Stella Moreira¹, Natacha Kalline¹, Samantha Cavalcanti¹, Maria Cristina Deboni¹, Marcia Marques¹. ¹University of Sao Paulo, Brazil
Disclosures: Ana Clara Pedroni, None
- MON-69** **Rat Bone Tissue Properties are Altered Due to In Vitro Sodium Fluoride Incubation**
 *Taraneh Rezaee¹, Tianna Edwards¹, Richard Bender¹, Lamya Karim¹, Mary Bouxsein². ¹Department of Bioengineering, University of Massachusetts Dartmouth, Dartmouth, MA, United States, ²Center for Advanced Orthopaedic Studies, Beth Israel Deaconess Medical Center, Boston, MA, United States
Disclosures: Taraneh Rezaee, None
- MON-70** **A Study of the Microstructure of the Femoral Head in Hip Fracture**
 *Linda Skingle¹, Ken Poole¹, Hiroshige Sano², Tom Turmezei³. ¹University of Cambridge, United Kingdom, ²Sado Genreal Hospital, Niigata, Japan, Japan, ³Norfolk and Norwich University Hospital, United Kingdom
Disclosures: Linda Skingle, None
- MON-71** **Presence of void space measured using HR-pQCT alters microarchitectural predictors associated with hip fracture risk**
 *Danielle Whittier¹, Sarah Manske¹, Emma Billington¹, Richard Walker¹, Lauren Burt¹, David Hanley¹, Steven Boyd¹, Prism Schneider². ¹McCaig Institute for Bone and Joint Health, Cumming School of Medicine, University of Calgary, Canada, ²McCaig Institute for Bone and Joint Health, Department of Orthopaedic Surgery, Cumming School of Medicine, University of Calgary, Canada
Disclosures: Danielle Whittier, None
- MON-72** **Surface silver nanoparticle coating generates a galvanic redox system that promotes osseointegration of metal orthopedic implants**
 *Zhong Zheng¹, Yulong Zhang¹, Emily Berthiaume¹, Xinli Zhang¹, Adam Stieg¹, Benjamin Wu¹, Kang Ting¹, Chia Soo¹. ¹University of California Los Angeles, United States
Disclosures: Zhong Zheng, UCLA, Other Financial or Material Support, Musculoskeletal Transplant Foundation, Grant/Research Support

BONE ACQUISITION AND PEDIATRIC BONE DISORDERS

- MON-81** **Increased burden of common risk alleles in children with a significant fracture history.**
 *Despoina Manousaki¹, Vince Forgetta¹, Brent Richards¹, Anders Kämpe², Riikka Makitie³, Ghalib Bardai⁴, Frank Rauch⁴, Alexandre Belisle⁵, Rui Li⁵, Outi Makitie⁶. ¹Lady Davis Institute for Medical Research, McGill University, Canada, ²Department of Molecular Medicine and Surgery, Karolinska Institutet, Sweden, ³Division of Endocrinology, Children's Hospital, Helsinki University Hospital and Research Program for Clinical and Molecular Metabolism, University of Helsinki, Finland, ⁴Shriners Hospitals for Children, Canada, ⁵McGill Genome Center, Canada, ⁶Division of Endocrinology, Children's Hospital, Helsinki University Hospital and Research Program for Clinical and Molecular Metabolism, University of Helsinki, Finland
Disclosures: Despoina Manousaki, None
- MON-82** **Hip structural analysis reveals impaired femoral neck geometry in youth with type 1 diabetes**
 *Deborah Mitchell¹, Taisha Joseph¹, Signe Caksa¹, Mary Bouxsein¹, Madhu Misra¹. ¹Massachusetts General Hospital, United States
Disclosures: Deborah Mitchell, None

- MON-83 Whole Genome Sequencing of Saliva and Osteochondroma-derived DNA from Hereditary Multiple Exostoses (HME) families Reveals New Insights into Pathogenesis**
 *Chun Su¹, Christina Mundy¹, Sumei Lu¹, James Pippin¹, Andrew Wells¹, Alexandre Arkader¹, Diana Cousminer¹, Maurizio Pacifici¹, Struan Grant¹. ¹Children's Hospital of Philadelphia, United States
Disclosures: Chun Su, None

BONE INTERACTIONS WITH MUSCLE AND OTHER TISSUES

- MON-111 Myosin 1a Regulates Osteoblast Differentiation Independent of Intestinal Calcium Transport**
 *Daniel Bikle¹, Scott Munson¹, Wenhan Chang¹, Yongmei Wang¹. ¹University of California and VA Medical Center San Francisco, United States
Disclosures: Daniel Bikle, None
- MON-112 Muscle Trauma Activates Satellite Cells to Contribute to Ectopic Bone**
 *Beth Bragdon¹, William Moore¹, Yu Liu¹, Amanda Molinelli¹, Louis Gerstenfeld¹. ¹Boston University School of Medicine Dept of Orthopaedic Surgery, United States
Disclosures: Beth Bragdon, None
- MON-113 Bone-derived Sclerostin Has Endocrine Actions in Adipocyte Precursors and Pancreatic Beta-Cells.**
 *Ashely L Daniel¹, Adam J Ferrari¹, Jessica H Nelson¹, Kevin McAndrews¹, Meloney Cregor¹, Ziad Ghazzawi¹, William R Thompson¹, Carmella Evans-Molina¹, Teresita Bellido¹, Jesus Delgado-Calle¹. ¹Indiana University School of Medicine, United States
Disclosures: Ashely L Daniel, None
- MON-114 DIFFERENCES IN CORTICAL FIBULA AND TIBIA STRUCTURE BETWEEN LONG-DISTANCE RUNNERS AND UNTRAINED CONTROLS. TOWARD A WIDER INSIGHT OF MECHANOSTAT FUNCTION**
 *Laura Marcela Nociolino¹, Sergio Luscher¹, Leandro Mackler¹, Jose Luis Ferretti¹, Gustavo Roberto COUNTRY¹, Ricardo Francisco Capozza¹, Alex Ireland², Joern Rittweger³, Nicolas Pilot⁴, Leandro Pisani⁴. ¹Center for P-Ca Metabolism Studies (CEMFoC), Natl Univ of Rosario and Arg NRC (CONICET), Argentina, ²School of Healthcare Science, Manchester Metropolitan University, United Kingdom, ³Institute of Aerospace Medicine, German Aerospace Center (DLR); Department of Pediatrics and Adolescent Medicine, University of Cologne, Germany, ⁴Center of Musculoskeletal Biomechanical Studies (CEBOM), University of Gran Rosario (UGR), Argentina
Disclosures: Laura Marcela Nociolino, None
- MON-115 Novel Macrophage Subpopulations at Tendon-Bone Interface after ACL Repair Surgery in Mice**
 *Lionel Ivashkiv¹, Kyung Parkmin¹, Ye Ji Lee¹, Takayuki Fujii¹, Seyeon Bae¹, Shwan Mun¹, Kaichi Kaneko¹, Haemin Kim¹, Sang Park¹, Scott Rodeo¹, Camila Carballo¹, Susumu Wada¹. ¹Hospital for Special Surgery, United States
Disclosures: Lionel Ivashkiv, None
- MON-116 Skeletal muscle mitochondrial dysfunction and whole body metabolic alterations in the osteogenesis imperfecta murine (oim) model of Osteogenesis imperfecta (OI)**
 *Victoria L Gremminger¹, Elijah Miranda¹, Laura C Schulz², R. Scott Rector³, Charlotte L Phillips⁴. ¹Department of Biochemistry, University of Missouri, Columbia, MO 65211, United States, ²Department of Obstetrics, Gynecology, and Women's Health, University of Missouri, United States, ³Departments of Nutrition and Exercise Physiology and Medicine-GI, University of Missouri; Harry S Truman Memorial VA Hospital, United States, ⁴Departments of Biochemistry and Child Health, University of Missouri, Columbia, MO 65211, United States
Disclosures: Victoria L Gremminger, None

- MON-117 Gut Microbiota has Osteoimmunomodulatory Effects on Alveolar Bone Independent of the Oral Microbiota**
 *Jessica Hathaway-Schrader¹, Joy Kirkpatrick², Amy Warner³, Brooks Swanson³, Matthew Carson³, Caroline Westwater³, Sakamuri Reddy³, Chad Novince³. ¹Medical University of South Carolina, United States, ²Medical University of South Carolina, United States, ³Medical University of South Carolina, United States
Disclosures: Jessica Hathaway-Schrader, None
- MON-118 RANKL-signaling stimulates growth of testicular germ cell tumors**
 *Christine Hjorth Andreassen¹, Mette Lorenzen¹, Martin Blomberg Jensen¹, John Erik Nielsen², Anders Juul². ¹Group of Skeletal Mineral and Gonadal Endocrinology, University Department of Growth and Reproduction, Rigshospitalet, Faculty of Medical and Health Sciences, University of Copenhagen, Blegdamsvej 9, DK-2100 Copenhagen, Denmark, Denmark, ²University Department of Growth and Reproduction, Rigshospitalet, Faculty of Medical and Health Sciences, University of Copenhagen, Blegdamsvej 9, DK-2100 Copenhagen, Denmark, Denmark
Disclosures: Christine Hjorth Andreassen, None
- MON-119 Defining the Role of ALK3 Over-Expression in Degenerative Disc Disease**
 *Addisu Mesfin¹, Ayodeji jubril², Roman Eliseev². ¹University of Rochester Center for Musculoskeletal Research, United States, ²Center for Musculoskeletal Research, United States
Disclosures: Addisu Mesfin, None
- MON-120 Using multi-omics to explore the role of gut microbiota in pathogenesis of postmenopausal bone health**
 *Xu Lin¹, Jie Shen¹, Rui Gong¹, *Xu Lin², Jie Shen², Rui Gong², Jonathan Greenbaum³, Kuan-Jui Su³, Hong-Wen Deng³, Hong-Mei Xiao⁴. ¹Department of Endocrinology and Metabolism, The Third Affiliated Hospital of Southern Medical University, Guangzhou, China, United States, ²Department of Endocrinology and Metabolism, The Third Affiliated Hospital of Southern Medical University, Guangzhou, China, China, ³Center for Bioinformatics and Genomics, School of Public Health and Tropical Medicine, Tulane University, New Orleans, LA, USA, United States, ⁴School of Basic Medical Sciences, Central South University, Changsha, 410000, P. R. China, China
Disclosures: Xu Lin, None
- MON-121 Bacteriophage-Derived Lysin Combination With Vancomycin Demonstrates Superior Antimicrobial Potential in Murine DAIR Model of PJI**
 *Branden Sosa¹, YingZhen Niu¹, Kathleen Turjane¹, Kevin Staats¹, Vincentius Suhardi¹, Alberto Carli¹, Mathias Bostrom¹, Yang Xu¹, Vincent Fischetti². ¹Hospital for Special Surgery, United States, ²Rockefeller University, United States
Disclosures: Branden Sosa, None
- MON-122 Changes in spinal bone density, back muscle size and visceral fat and their interaction following an 18-month multi-component exercise program in older men**
 *Anne-Frédérique Turcotte¹, Sonja Kukuljan², Claudia Gagnon³, Caryl Nowson⁴, Robin M Daly⁴. ¹CHU de Québec-Université Laval, Canada, ²Institute for Physical Activity and Nutrition, Deakin University, Australia, ³CHU de Québec - Université Laval, Canada, ⁴Institute for Physical Activity and Nutrition, Deakin University, Australia
Disclosures: Anne-Frédérique Turcotte, None
- MON-123 Muscle Lamin A/C suppresses osteoclastogenesis by inhibiting muscle IL-6 expression**
 *Lei Xiong¹, Hao-han Guo¹, Jin-Xiu Pan¹, Lin Mei¹, Wen-Cheng Xiong¹, Kai Zhao², Yu Cao², Xiao Yang². ¹Department of Neuroscience, Case Western Reserve University, United States, ²Augusta University, United States
Disclosures: Lei Xiong, None

BONE MARROW MICROENVIRONMENT AND NICHES

MON-132 **STAT3 cooperates with MSX1 to drive osteoblast differentiation and regulates skeletal development of AD-HIES patients**

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¹Ninth People's Hospital, Shanghai Jiaotong University School of Medicine, China
Disclosures: Qinggang Dai, None

MON-133 **Reverse Phase Protein Array Reveals Differential Basal and Adaptive Protein Expression Profiles in BMSCs Cultured in Normoxic vs. Chronic Physiologically Relevant Bone Marrow Low Oxygen Conditions**

*Ahmed Elmansi¹, Dmitry Knodrikov¹, Nada Eisa¹, William Hill¹, Brian Volkman², Carlos Isales³, Sadanand Fulzele³, Mark Hamrick⁴, Meghan McGee-Lawrence⁴, Jie Chen⁵.
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Disclosures: Ahmed Elmansi, None

MON-134 **Sclerostin Antibody Treatment Rescues Negative Effects of Rosiglitazone on the Bone Marrow Niche**

*Michaela Reagan¹, Heather Fairfield¹, Carolyne Falank¹, Samantha Costa¹, Anastasia D'Amico¹, Mariah Farrell¹, Dominic Bowers². ¹Maine Medical Center Research Institute, United States, ²Mereo Biopharma Group, United Kingdom
Disclosures: Michaela Reagan, Mereo Bioparma, Grant/Research Support

BONE TUMORS AND METASTASIS

MON-161 **Characterization of T Cell Suppression in the Bone Microenvironment for the Immunotherapy of Bone Metastases**

*Danna Arellano-Rodriguez¹, Florian Drescher¹, Samanta Jiménez-Flores¹, Patricia Juarez¹, Pierrick Fournier¹, Felipe Olvera-Rodriguez². ¹Biomedical Innovation Department, CICESE, Mexico, ²Instituto de Biotecnología, UNAM, Mexico
Disclosures: Danna Arellano-Rodriguez, None

MON-162 **Human Breast Cancer Cell Lines Inhibit Osteoblast Mineralization**

*Rajiv Kumar¹, Taylor Berent¹. ¹Mayo Clinic, United States
Disclosures: Rajiv Kumar, None

MON-163 **Castration Determines the Efficacy of ETAR Blockade In a Mouse Model of Prostate Cancer Bone Metastasis**

*Moon Henry¹, Katrina Clines¹, Mark Cooks¹, Charlotte Cialek¹, Marian Esvelt¹, Gregory Clines¹. ¹University of Michigan, United States
Disclosures: Moon Henry, None

MON-164 **IL-11 is Indispensable in Promoting Breast Cancer Metastasis Induced Osteolysis via Activation of Osteoclastogenesis Independently of RANKL**

*Ce Dou¹, Shiwu Dong². ¹Johns Hopkins University, Department of Orthopedic Surgery, United States, ²Third Military Medical University, China
Disclosures: Ce Dou, None

MON-165 **Unlocking Molecular Signatures of Osteosarcoma Subtypes using Trp53 mutated mouse models**

*Fang Fang¹, Haydee M. Torres¹, Ashley Vancleave¹, Jianning Tao¹. ¹Sanford Research, United States
Disclosures: Fang Fang, None

MON-166 **The driver landscape of osteosarcoma metastasis**

*Darrell Green¹, William Fraser¹. ¹University of East Anglia, United Kingdom
Disclosures: Darrell Green, None

- MON-167 Syngeneic bone metastasis models for testing efficacy of novel therapies**
*Tiina E Kähkönen¹, Mari I Suominen¹, Jenni HE Mäki-Jouppila¹, Jussi M Halleen¹, Jenni Bernoulli¹, Arne Scholz². ¹Pharmatest Services, Finland, ²Bayer AG, Germany
Disclosures: Tiina E Kähkönen, None
- MON-168 Targeting Gli2 to Circumvent Anti-EGFR Therapeutic Resistance in Oral Squamous Cell Carcinoma**
*Kristin Kwakwa¹, Shellese Cannonier¹, Joseph Vanderburgh¹, Mathilde Granke¹, Kennady Bullock¹, Jeffry Nyman¹, Craig Duvall¹, Scott Guelcher¹, Julie Rhoades (Sterling)¹.
¹Vanderbilt University, United States
Disclosures: Kristin Kwakwa, None
- MON-169 Mesenchymal stem cells educated by cancer-cell secreted extracellular vesicles support breast cancer cell survival and immune surveillance**
*Xing Li¹, Xiaojin Guo¹, Lei Zhang¹, Jin Cao¹, Xiao Zhang¹, Zhiyu Wang¹. ¹The 4th Hospital of Hebei Medical University, China
Disclosures: Xing Li, None
- MON-170 Effects of RANKL producing compared to non-RANKL producing tumors on muscle and bone.**
*Fabrizio Pin¹, Lynda F. Bonewald², Andrea Bonetto³. ¹Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, ²Department of Anatomy and Cell Biology, Indiana Center for Musculoskeletal Health, Indiana University School of Medicine, Indianapolis, IN, United States, ³Department of Anatomy and Cell Biology; Department of Surgery; Indiana Center for Musculoskeletal Health; Simon Cancer Center, Indiana University School of Medicine, Indianapolis, IN, United States
Disclosures: Fabrizio Pin, None
- MON-171 A pain-related neuropeptide calcitonin gene-related peptide promotes bone metastatic progression of prostate cancer through p38.**
*Shunsuke Tsuzuki¹, Sun Park¹, Matthew Eber¹, Brooke Widner¹, Fang-Chi Hsu¹, Christopher Peters¹, Yusuke Shiozawa¹, Yuko Kamata², Takahiro Kimura², Daniella Bianchi-Frias³, Ilsa Coleman³, Peter Nelson³. ¹Wake Forest University Health Sciences, United States, ²The Jikei University School of Medicine, Japan, ³Fred Hutchinson Cancer Research Center, United States
Disclosures: Shunsuke Tsuzuki, None
- MON-172 MGUS plasma cells express senescence markers and targeting senescence may alleviate frailty in a mouse model of MGUS**
*Megan Weivoda¹, Ming Xu², Christine Hachfeld³, Tamar Tchkonja³, James Kirkland³, Matthew Drake³, Claire Edwards⁴. ¹University of Michigan, United States, ²University of Connecticut, United States, ³Mayo Clinic, United States, ⁴University of Oxford, United Kingdom
Disclosures: Megan Weivoda, None
- MON-173 Muscle RING-finger protein-1, a skeletal muscle wasting-related ligase, enhances malignancy via the activation of cancer stemness characteristics in bone tumors**
*Chen-Yuan Chiu¹, Shing-Hwa Liu¹, Rong-Sen Yang¹. ¹National Taiwan University, Taiwan, Province of China
Disclosures: Chen-Yuan Chiu, None

CHONDROCYTES

- MON-191 Zinc Finger Homeobox 4 (ZFHX4) Transcription Factor is a Novel Regulator of Chondrocyte and Osteoblast Differentiation and a Potential Mediator of Thyroid Hormone Effects on Endochondral Bone Formation**
*Fern Baedyananda¹, Weirong Xing¹, Jasmine Lau¹, Sheila Poutey¹, Subburaman Mohan². ¹Jerry L Pettis VA Medical Center, United States, ²Jerry L Pettis VA Medical Center, United States
Disclosures: Fern Baedyananda, None

- MON-192 Notch Signaling Is Involved in Age-Related Chondrocyte Migration Differences in an In-Vitro Model of Cartilage Healing**
 *Christopher Gallo¹, Nick Kwon¹, Caitlin Marks¹, Jessica Hu², Jonathan Carter², Anthony Mirando³, Matthew Hilton³, Jonathan Riboh³. ¹Duke University School of Medicine, United States, ²Duke Department of Orthopaedic Surgery, United States, ³Duke Department of Orthopaedics, United States
Disclosures: Christopher Gallo, None
- MON-193 Functional analysis of a candidate causal gene of ossification of the posterior longitudinal ligament, CDCSL.**
 *Go Jokoji¹, Ichiro Kawamura¹, Yuhei Yahiro¹, Hiroyuki Tominaga¹, Noboru Taniguchi¹, Shingo Maeda², Eiji Taketomi³, Shiro Ikegawa⁴, Masahiro Nakajima⁴. ¹Department of Orthopaedics, Kagoshima University, Japan, ²Department of Medical Joint Materials, Kagoshima University, Japan, ³Department of Orthopaedic Surgery, Japanese Red Cross Kagoshima Hospital, Japan, ⁴Laboratory of Bone and Joint Diseases, Center for Integrative Medical Sciences, RIKEN, Japan
Disclosures: Go Jokoji, None
- MON-195 KDM6A promotes chondrogenic differentiation of dental stem cells**
 *Yanjing Li¹, Yunfeng Lin¹, Lei Sui². ¹State Key Laboratory of Oral Diseases, National Clinical Research Center for Oral Diseases, West China Hospital of Stomatology, Sichuan University, China, ²Department of Prosthodontics, Tianjin Medical University School of Stomatology, China
Disclosures: Yanjing Li, None
- MON-196 The beta-blocker propranolol increases physical activity in female mice after a posttraumatic knee injury**
 *Samantha R. Weaver¹, Elizabeth L. Zars¹, Jennifer J. Westendorf¹. ¹Mayo Clinic, United States
Disclosures: Samantha R. Weaver, None
- MON-197 Prolyl Hydroxylase Domain-containing Protein 3 (Phd3) Gene Expressed in Chondrocytes is Not Essential for Skeletal Development in Mice**
 *Weirong Xing¹, Sheila Pourteymoor², Subburaman Mohan³. ¹Jerry L Pettis VA Loma Linda Medical Center, United States, ²Jerry L. Pettis VA Medical Center, United States, ³Jerry L. Pettis VA Medical Center, United States
Disclosures: Weirong Xing, None
- MON-198 Effects of Implantation of a Scaffold Free 3D Mesenchymal Cell Structure Designed and Layered by a Bio 3D Printer for Knee Joints' Full Thickness Defects.**
 *Kaneko Yosuke¹, Kobayashi Shu¹, Harato Kengo¹, Miyamoto Takeshi¹, Niki Yasuo¹, Matsumoto Morio¹, Nakamura Masaya¹. ¹Department of Orthopedic Surgery, Keio University School of Medicine, Japan
Disclosures: Kaneko Yosuke, None

ENERGY METABOLISM, BONE, MUSCLE AND FAT

- MON-230 Reproducible Segmentation of the Fascia and Quantification of Muscle Fat Fraction in the Thigh**
 *Oliver Chaudry¹, Andreas Friedberger¹, Alexandra Grimm¹, Wolfgang Kemmler¹, Klaus Engelke¹. ¹Institute of Medical Physics, University Erlangen-Nuremberg, Germany
Disclosures: Oliver Chaudry, None
- MON-231 OPG Expression in Human Diabetic Bone Tissue and Cell Culture**
 *Roberto Fajardo¹, Jesus Hernandez², Ammar Saigal³, Todd Bredbenner⁴. ¹University of the Incarnate Word School of Osteopathic Medicine, United States, ²University of Texas Health Science Center at San Antonio, United States, ³Weill Cornell Medical School, United States, ⁴University of Colorado-Colorado Springs, United States
Disclosures: Roberto Fajardo, None
- MON-232 The Phosphate Hypothesis: Beta Oxidation, a Principal Component of Metabolism**
 *Robert S Fredericks¹. ¹Endocrine-Associates, United States
Disclosures: Robert S Fredericks, None

MON-233 **Deletion of the pro-adipogenic factor Zinc Finger Protein 467 (Zfp467), which induces high bone mass, protects mice from high fat diet-induced obesity**
 *Phuong Le¹, Yosta Vegting¹, Clifford Rosen¹, John Martin², Roland Baron³. ¹Maine Medical Center Research Institute, United States, ²St. Vincent's Institute of Medical Research, Australia, ³Harvard School of Dental Medicine, United States
Disclosures: Phuong Le, None

MON-234 **Bone-derived TGF- β Impairs Glucose Metabolism and Insulin Release by Oxidation of RyR2 Ca²⁺ Release Channel in Pancreatic β -cells in the Setting of High Bone Turnover, Aging and High Fat Diet**
 *Trupti Trivedi¹, Jenna Regan², Asma Bahrami², Jennymar Rojas³, Steven Reiken⁴, Sutha John⁵, Sukanaya Suresh⁵, Sreemala Murthy⁵, Yun She⁵, Gabriel Pagnotti⁵, Sarah Tersey⁶, Xu Cao⁷, Andrew Marks⁸, Carmella Evans-Molina⁹, Khalid Mohammad¹⁰, Theresa Guise¹¹. ¹Division of Endocrinology, Department of Medicine; Indiana University School of Medicine, Indianapolis, Indiana, United States, ²Division of Endocrinology, Department of Medicine; Indiana University School of Medicine, Indianapolis, Indiana, United States, ³Division of Endocrinology, Department of Medicine; Indiana University School of Medicine, Indianapolis, Indiana, United States, ⁴Department of Physiology and Cellular Biophysics, Helen and Clyde Wu Center for Molecular Cardiology, College of Physicians and Surgeons, Columbia University, New York, United States, ⁵Division of Endocrinology, Department of Medicine; Indiana University School of Medicine; Indianapolis, Indiana, United States, ⁶Department of Pediatrics, Indiana University School of Medicine, Indianapolis, IN, United States, ⁷Department of Orthopedic Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland, United States, ⁸Department of Physiology and Cellular Biophysics, Helen and Clyde Wu Center for Molecular Cardiology, College of Physicians and Surgeons, Columbia University, New York, United States, ⁹Division of Endocrinology, Department of Medicine; Indiana University School of Medicine; Indianapolis, Indiana; Department of Pediatrics, Indiana University School of Medicine, Indianapolis, IN, United States, ¹⁰Division of Endocrinology, Department of Medicine; Indiana University School of Medicine; Indianapolis, Indiana, United States, ¹¹Division of Endocrinology, Department of Medicine; Indiana University School of Medicine; Indianapolis, Indiana, United States
Disclosures: Trupti Trivedi, None

GENOMICS, TRANSCRIPTOMICS, PROTEOMICS AND METABOLOMICS OF MUSCULOSKELETAL DISEASE

MON-250 **Transcriptome analysis reveals a somatic mutation in the catalytic domain of MAP2K1 in a melorheostosis patient.**
 *Raphaël De Ridder¹, Eveline Boudin¹, Joe Ibrahim¹, Wim Van Hul¹, Geert Mortier¹, M. Carola Zilikens², Bram C.J. van der Eerden². ¹Center of Medical Genetics, University and University Hospital of Antwerp, Belgium, ²Division of Endocrinology, Department of Internal Medicine, Erasmus Medical Center, Netherlands
Disclosures: Raphaël De Ridder, None

MON-251 **Somatic HRAS Variant in a Parathyroid Adenoma, Squamous Cell Carcinoma, and Endomyocardial Membrane Expands the Phenotype of the Cutaneous Skeletal Hypophosphatemia Syndrome (CSHS)**
 *Rachel I. Gafni¹, Maria Zhadina¹, Jamie Streit¹, Michael T. Collins¹, Chelsi L. Flippo², Michael Gottschalk³, Dhaval Patel⁴, Naris Nilubol⁵. ¹National Institute of Dental and Craniofacial Research, National Institutes of Health, United States, ²Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, United States, ³Rady Children's Hospital, University of California, San Diego, California, United States, ⁴Department of Surgery, Medical College of Wisconsin, Milwaukee, Wisconsin, United States, ⁵National Cancer Institute, National Institutes of Health, Bethesda, MD, United States
Disclosures: Rachel I. Gafni, None

- MON-252** **FluoBolt™-Periostin, a new Highly Sensitive Fluorescence Immunoassay for this Matricellular Protein based on Plasmonic Microtiter Plates**
 *Gerhard Hawa¹, Teresa Jungwirth¹, Albert Missbichler¹. ¹FIANOSTICS GmbH, Austria
Disclosures: Gerhard Hawa, FIANOSTICS GmbH, Other Financial or Material Support
- MON-253** **A large-Scale Deep-Coverage Whole Genome Sequencing to Identify Less Common and Rare Variants Associated with BMD and Fractures: The NHLBI Trans-Omics for Precision Medicine (TOPMED) Study**
 *Yi-Hsiang Hsu¹, Hanfei Xu², Xiaoyu Zhang², Ching-Ti Liu², May Montasser³, Mao Fu³, Jeff O'Connell³, James Perry³, Shabnam Salimi³, Elizabeth Streeten³, Braxton D. Mitchell³, Carolyn Crandall⁴, Chris Delaney⁵, Anne Justice⁶, David Karasik⁷, Robert Wallace⁸, David M. Evans⁹, Jonathan H. Tobias¹⁰, Brent Richards¹¹, John Blangero¹², Kerri Wiggins¹³, Rebecca Jackson¹⁴, Douglas Kiel¹⁵. ¹Marcus Institute for Aging Research and Harvard Medical School, United States, ²Boston University, School of Public Health, United States, ³University of Maryland, United States, ⁴University of California, Los Angeles, United States, ⁵University of Washington, United States, ⁶University of North Carolina, United States, ⁷Marcus Institute for Aging Research, Hebrew SeniorLife, United States, ⁸University of Iowa, United States, ⁹University of Queensland Diamantina Institute, Australia, ¹⁰Department of Clinical Science at North Bristol, University of Bristol, United Kingdom, ¹¹Lady Davis Institute, Jewish General Hospital, McGill University, Canada, ¹²University of Texas Rio Grande Valley School of Medicine, United States, ¹³University of Washington, United States, ¹⁴Ohio State University Wexner Medical Center, United States, ¹⁵Hebrew SeniorLife Marcus Institute for Aging Research and Harvard Medical School, United States
Disclosures: Yi-Hsiang Hsu, None
- MON-254** **Metabolomic signatures among men and women with and without osteoporosis: The Boston Puerto Rican Osteoporosis Study**
 *Kelsey Mangano¹, Sabrina Noel¹, Katherine Tucker¹, Chao-Qiang Lai², Laurence Parnell², Jose Ordovas³. ¹University of Massachusetts, Lowell, United States, ²USDA Agricultural Research Service, Nutrition and Genomics Laboratory, JM-USDA Human Nutrition Research Center on Aging at Tufts University, United States, ³Nutrition and Genomics Laboratory, JM-USDA Human Nutrition Research Center on Aging at Tufts University, United States
Disclosures: Kelsey Mangano, None
- MON-255** **Molecular Mechanisms of Beta Blocker Association with Increased Bone Mineral Density in Humans**
 *Kathleen Nevola¹, Douglas Kiel², Katherine Motyl³, Christine Lary⁴. ¹Tufts University, United States, ²Harvard Medical School, United States, ³Maine Medical Center Research Institute, United States, ⁴Maine Medical Center Research Institute: Center for Outcomes Research & Evaluation, United States
Disclosures: Kathleen Nevola, None
- MON-256** **Tumor Necrosis Factor is involved in ossified ligamentum flavum in in thoracic ossification of the ligamentum flavum**
 *chi Zhang¹. ¹Peking University International Hospital, China
Disclosures: chi Zhang, None

HORMONAL REGULATORS

- MON-276** **Estrogen receptor alpha is involved in bone healing through regulating osteoblast maturation and angiogenesis**
 *Pei-I Lin¹, Ruei-Ming Chen¹. ¹Taipei Medical University, Taiwan, Province of China
Disclosures: Pei-I Lin, None

- MON-277** **From bedside to the bench: a novel human homozygous IGF1R mutation is causal of abnormal skeletal acquisition**
 *Manisha Dixit¹, Masanobu Fujimoto², Andrew Dauber², Vivian Hwa², Isabelle Maystadt³, Anita Rauch⁴, Jean De Schepper⁵, Gozde Yildirim⁶, Yanjiao Zhang⁶, Shoshana Yakar⁶.
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Disclosures: Manisha Dixit, None
- MON-278** **LA-PTH Prolonged Activity is Tolerant of Ligand Oxidation Despite a Contact Role for Methionine-8 Predicted by the Cryo-EM Structure of the PTHR1-LA-PTH Complex**
 *Ashok Khatri¹, Thomas Dean¹, Thomas J Gardella¹, Brijesh Bhayana². ¹Endocrine Unit, Massachusetts General Hospital, United States, ²Dept. of Photomedicine, Massachusetts General Hospital, United States
Disclosures: Ashok Khatri, None
- MON-279** **Linking hepcidin, a key hormone for iron homeostasis, with Swedish mutant APP and inflammation associated osteoclastogenesis and bone-loss**
 *Haohan Guo¹, Jinxiu Pan¹, Kevin Liu¹, Lin Mei¹, Wencheng Xiong¹, Lei Xiong², Bo Wang³, Xiao Yang⁴. ¹Case Western Reserve University, United States, ²Case Western Reserve University, United States, ³Huazhong University of Science and Technology, China, ⁴Southern Medical University, China
Disclosures: Haohan Guo, None
- MON-280** **Protein Phosphatases 1 and 2A are Necessary for PTH (1-34) Stimulation of Osteoblastic RANKL Expression Through CREB Regulated Transcription Coactivator 3**
 *Zhiming He¹, Carole Le Henaff¹, Florante Ricarte¹, Victoria Kolupaeva¹, Nicola Partridge¹.
¹New York University College of Dentistry, United States
Disclosures: Zhiming He, None
- MON-281** **Impaired Hard Tissue Morphology and Mineral Density in Type-1 Diabetes**
 *Shira Miller¹, Gozde Yildirim¹, Yanjiao Zhang¹, Manisha Dixit¹, Hisham Ellayen¹, Shoshana Yakar¹, Emi Shimizu². ¹1, United States, ²2, United States
Disclosures: Shira Miller, None
- MON-282** **Thyroid Hormone Interacts with α 2-adrenoceptor Signaling but not with β 2-adrenoceptor Signaling in Osteoblasts**
 *Bianca Neofiti-Papi¹, Lais Ferreira¹, Cecilia Gouveia¹. ¹Department of Anatomy, University of Sao Paulo, Brazil
Disclosures: Bianca Neofiti-Papi, None
- MON-283** **Effect of PTH-stimulated bone resorptive activity is involved in IL-11/JAK/RANKL signaling pathway**
 *Bin Wang¹, Yanmei Yang¹, Hong Lei¹. ¹Thomas Jefferson University, United States
Disclosures: Bin Wang, None
- MON-284** **Sex difference in rhBMP-2-mediated spinal posterolateral fusion in a rat mode**
 *Chawon Yun¹, Jonathan Yamaguchi¹, Mitchell Hallman¹, David Ellenbogen¹, Allison Greene¹, Vivek Shah¹, Soyeon Jeong¹, Silvia Minardi¹, Wellington Hsu¹, Erin Hsu¹, Stuart Stock². ¹Northwestern University Dept of Orthopaedic Surgery, United States, ²Northwestern University, Dept of Cell and Molecular Biology, United States
Disclosures: Chawon Yun, None

MECHANOBIOLOGY

- MON-301 Interleukin-6 (IL6) Knockout Increases Bone Formation in Healing Stress Fractures**
*Brandon Coates¹, Jennifer McKenzie¹, Susumu Yoneda¹, Matthew Silva¹. ¹Washington University in St. Louis, United States
Disclosures: Brandon Coates, None
- MON-302 Pre-Spaceflight Mechanical Conditioning Of Human Skeletal Stem Cells (hSSC) promotes Adipogenesis Resistance In Real Microgravity**
*Mélanie Dhayer¹, Sylvie Peyroche², Norbert Laroche², Mireille Thomas-Paul², Marie-Thérèse Linossier², Laurence Vico², Alain Guignandon². ¹INSERM U1059 Sainbiose, France, ²InsERM U1059 - Laboratoire Sainbiose équipe LBTO, France
Disclosures: Mélanie Dhayer, None
- MON-303 Pb2+ Induced Differences in Bone Properties in Osteocalcin +/- and +/- Female Mice**
*Olga Berezovska¹, Gozde Yildirim¹, Terry Dowd¹, Marjolein van der Meulen². ¹Brooklyn College of CUNY, United States, ²Cornell University, United States
Disclosures: Olga Berezovska, None
- MON-305 Gene Expression Response to Swim Training in Anosteocytic and Osteocytic Teleost Fish**
*Catherine Julien¹, Tobias Thiele², Lior Ofer³, Ron Shahar³, Paul Zaslansky⁴, Bettina Willie⁵. ¹Research Centre, Shriners Hospital for Children, Canada, ²Julius Wolff Institute, Charité - Universitätsmedizin, Germany, ³Koret School of Veterinary Medicine, The Robert H. Smith Faculty of Agriculture, Food and Environmental Sciences, The Hebrew University of Jerusalem, Israel, ⁴Department for Restorative and Preventive Dentistry, Charité-Universitätsmedizin, Germany, ⁵Research Centre, Shriners Hospital for Children ; Department of Pediatric Surgery, McGill University, Canada
Disclosures: Catherine Julien, None
- MON-306 Development of a Fluid Shear Stress Streamer for Live Cell Video Microscopy**
*Travis McCumber¹, Edson deOliveira¹, Dane Wilson¹, Paul Deegan¹. ¹University of Nebraska Medical Center, United States
Disclosures: Travis McCumber, None
- MON-307 Perlecan deficiency impairs the intracellular calcium signaling in mechanically loaded bone and osteocytes**
*shaopeng pei¹, Sucharitha Parthasarathy¹, Ashutosh Parajuli¹, Jerahme Martinez¹, Mengxi Lv¹, Sida Jiang¹, Shuo Wei¹, X. Lucas Lu¹, Liyun Wang¹, Danielle Wu², Mary C. Farach-Carson³, Catherine B. Kirn-Safran⁴. ¹University of Delaware, United States, ²University of Texas Health Center, United States, ³University of Texas Health Center, United States, ⁴Widener University, United States
Disclosures: shaopeng pei, None
- MON-308 Load-induced Regulation of Bone Neuro-mechanosensory Components in Healthy and Diabetic Mice**
*Marcia Urban-Maldonado¹, Sylvia Suadcani¹, Mia Thi¹, Mitchell Schaffler². ¹Albert Einstein College of Medicine, United States, ²City College of New York, United States
Disclosures: Marcia Urban-Maldonado, None

MINERAL METABOLISM

- MON-328 Characterization of a rat model to evaluate current and future treatment strategies for hypoparathyroidism (hypoPTH).**
*Geert Behets¹, Ellen Neven¹, Patrick D'Haese¹. ¹Laboratory of Pathophysiology, University of Antwerp, Belgium
Disclosures: Geert Behets, None

- MON-329 Functional Characterization of Four Mutations of the Calcium Sensing Receptor Gene Identified in Patients with Familial Hypocalciuric Hypercalcemia Type 1**
 *Filomena Cetani¹, Simona Borsari², Elena Pardi², Tommaso Biagioni², Brunella Bagattini², Federica Saponaro², Claudio Marcocci². ¹Universital Hospital of Pisa, Endocrine Unit 2, Italy, ²Department of Clinical and Experimental Medicine, University of Pisa, Italy
Disclosures: Filomena Cetani, None
- MON-330 Intact mouse model to determine bioavailability of phosphorus from amino-acid based formulas with different mineral sources.**
 *Sampada Chande¹, Jonathan Fentene¹, Thomas Carpenter¹, Clemens Bergwitz¹, Ardy Van Helvoort², Steven Yannicelli³. ¹Yale school of medicine, United States, ²Danone Nutricia Research, Nutricia Advanced Medical Nutrition, Netherlands, ³Nutricia North America, United States
Disclosures: Sampada Chande, Nutricia North America, Rockville, MD, Grant/Research Support
- MON-331 Intact FGF23 ELISA - a Novel Tool for the Accurate Measurement of iFGF23**
 *Jacqueline Wallwitz¹, Elisabeth Gadermaier¹, Gottfried Himmler¹, Gabriela Berg². ¹The Antibody Lab GmbH, Austria, ²Biomedica Medizinprodukte GmbH, Austria
Disclosures: Jacqueline Wallwitz, None
- MON-332 Large-Scale Sequence Database Analyses Reveals 5 novel GNA11 mutations that alter Calcium-Sensing-Receptor Signalling: Relevance for FHH2 and ADH2**
 *Anna Gluck¹, Kate Lines¹, Caroline Gorvin¹, Fadi Hannan¹, Rajesh Thakker¹, Asuka Inoue², Gerda Breitwieser³. ¹Academic Endocrine Unit, Oxford Centre for Diabetes, Endocrinology and Metabolism, Radcliffe Department of Medicine, United Kingdom, ²Graduate School of Pharmaceutical Science, Tohoku University, Japan, ³Geisinger Clinic, Weis Center for Research, Department of Functional and Molecular Genomics, United States
Disclosures: Anna Gluck, None
- MON-333 Femoral bone quality in rats with glucocorticoid-induced osteoporosis after implantation of prednisolone pellet**
 *Fumiya Nakamura¹, Yuya Kanehira¹, Hiromi Kimura-Suda¹, Ryota Oseto², Hideyo Horiuchi², Tomomi Masuya², Syota Furukawa², Dai Sato³, Ryo Fujita³, Masahiko Takahata⁴. ¹Graduate School of photonics, Chitose Institute of Science and Technology, Japan, ²Faculty of Science and Technology, Chitose Institute of Science and Technology, Japan, ³Department of Orthopedic Surgery, Hokkaido University Graduate School of Medicine, Japan, ⁴Graduate of photonics, Chitose Institute of Science and Technology, Japan
Disclosures: Fumiya Nakamura, None
- MON-334 Chondrocyte Expression of Efnb1 Promotes Bony Union during Bone Fracture Repair**
 *Amandeep Kaur¹, Weirong Xing¹, Subburaman Mohan¹, Charles Rundle¹. ¹J.L. Pettis Memorial VA Medical Center, United States
Disclosures: Amandeep Kaur, None
- MON-335 Short-term Supplemental Dietary Potassium from Potato and Potassium Gluconate Effect on Calcium Retention and Urinary pH in Pre-Hypertensive-to-Hypertensive Adults**
 *Michael Stone¹, Connie Weaver¹, Berdine Martin¹. ¹Purdue University, United States
Disclosures: Michael Stone, Alliance for Potato Research and Education, Grant/Research Support
- MON-336 Functional Control of Osteoblasts by Type III Sodium/Phosphate Cotransporters**
 *Miwa Yamazaki¹, Masanobu Kawai¹, Toshimi Michigami¹, Keiichi Ozono². ¹Department of Bone and Mineral Research, Research Institute, Osaka Women's and Children's Hospital, Japan, ²Department of Pediatrics, Osaka University Graduate School of Medicine, Japan
Disclosures: Miwa Yamazaki, None

MUSCULOSKELETAL AGING

- MON-347** **The effect of age-related compositional changes on tissue-level bone mechanics is dependent on external bone size**
 *Morgan Bolger¹, Erin Bigelow², Ferrous Ward², Karl Jepsen², Genevieve Romanowicz³, David Kohn³. ¹Biomedical Engineering, University of Michigan, United States, ²Department of Orthopedic Surgery, University of Michigan, United States, ³Department of Biologic and Materials Sciences, University of Michigan, United States
Disclosures: Morgan Bolger, None
- MON-348** **Characterization of Bone Microarchitecture and Fracture Healing of Dystrophin-/- utrophin+/- mice during aging**
 *Xueqin Gao¹, Xuying Sun¹, Yan Cui¹, Bing Wang², Johnny Huard³. ¹University of Texas Health Science Center at Houston, United States, ²University of Pittsburgh, United States, ³The Steadman Philippon Research Institute, United States
Disclosures: Xueqin Gao, None
- MON-349** **Effects of Cocoa Supplementation on Muscle Function in Older Persons: Preliminary Results from a 3-month Pilot Randomized Controlled Trial**
 *Deborah Kado¹, Jian Shen¹, David Wing¹, Sandra Rabat¹, Jeanne Nichols-Forward¹, Francisco Villarreal¹. ¹University of California San Diego, United States
Disclosures: Deborah Kado, None
- MON-350** **Vitamin D deficiency resulted in deteriorated immobilization induced skeletal muscle atrophy via vitamin D receptor in Schwann cells.**
 *Satoshi Nakamura¹, Akihito Oya¹, Arikiko Kanaji¹, Takeshi Miyamoto¹, Morio Matsumoto¹, Masaya Nakamura¹. ¹Department of Orthopedic Surgery, Keio University School of Medicine, Japan
Disclosures: Satoshi Nakamura, None

MUSCULOSKELETAL DEVELOPMENT

- MON-375** **Severely Decreased Bone Formation in the Winnie Mouse Model of Inflammatory Bowel Disease (IBD)**
 *Ahmed Al Saedi¹, Shilpa Sharma¹, Lulu Chen², Ebrahim Bani Hassan³, Kulmira Nurgali⁴, Gustavo Duque⁵. ¹Department of Medicine – Western Health, The University of Melbourne, Australia, ²Department of Anatomy, Histology and Embryology, Nanjing Medical University, Nanjing, China, ³Department of Medicine – Western Health, The University of Melbourne, St. Albans, Australia, ⁴Institute for Health and Sport, Victoria University, Melbourne, VIC, Australia, Australia, ⁵Australian Institute for Musculoskeletal Science (AIMSS), The University of Melbourne and Western Health, St. Albans, Australia
Disclosures: Ahmed Al Saedi, None
- MON-376** **Probiotics Ameliorate Bone Loss Induced by Gut-Microbiota in Hyperhomocysteinemia mice**
 *Jyotirmaya Behera¹, Jessica Ison¹, Michael J. Voor¹, Suresh C Tyagi¹, Neetu Tyagi¹. ¹University of Louisville, United States
Disclosures: Jyotirmaya Behera, None
- MON-377** **Bioprinting Cells in Specific Arrangements Affects Bone Organoid Development**
 *Dalton Chavez¹, Hsuan Lung¹, Steven Hansberry¹, Tamara Alliston¹, Edward Hsiao¹, Andrea S Rothmeier², Derek J Arndt², Kelsey N Retting², Stephen L Pentoney². ¹University of California, San Francisco, United States, ²Organovo, Inc., United States
Disclosures: Dalton Chavez, None
- MON-378** **1,25-Dihydroxyvitamin D Induces Intracellular Calcium Rise in Normal Human Skeletal Muscle Myotubes via Phospholipase C-γ1**
 *Dexing Dai¹, Zhongjian Xie¹. ¹Department of Endocrinology and Metabolism, Hunan Provincial Key Laboratory of Metabolic Bone Diseases, National Clinical Research Center for Metabolic Disease, the Second Xiangya Hospital, Central South University, China
Disclosures: Dexing Dai, None

- MON-380** **Hepcidin modulates runx2a gene expression through Bmp2a/Smad signaling pathways to regulate biomineralization of bone in zebrafish**
 *Yu Jiang¹. ¹Nanjing Medical University Affiliated Wuxi Second Hospital, China
Disclosures: Yu Jiang, None
- MON-381** **Functional validation of far upstream element binding protein 3 (FUBP3) in bone biology and osteoporosis susceptibility**
 *Iryna Khrystoforova¹, Chen Schochat¹, David Karasik¹, Christoph Winkler², Jun Yan Ng², Tien Phan Quang², Janja Marc³, Petra Malavasic³, Ajda Ogrin³, Nika Lovsin³, Einav Wircer⁴, Masa Zrimsek⁵, Bram van der Eerden⁵, Fernando Rivadeneira⁶. ¹Azrieli Faculty of Medicine, Bar-Ilan University, Israel, ²Department of Biological Sciences, National University of Singapore, Singapore, ³Faculty of Pharmacy, University of Ljubljana, Slovenia, ⁴Bar-Ilan University, David Karasik lab, Israel, ⁵Dept. Internal Medicine, Erasmus MC, Netherlands, ⁶Dept. Internal Medicine, Erasmus MC, Netherlands
Disclosures: Iryna Khrystoforova, None
- MON-382** **Corticocancellous bone regeneration using minimally polarized functional units: Mechanical and structural evaluation in rabbit calvarial defect and spinal fusion models**
 *Michael Sieverts¹, Kendall Stauffer², Lyssa Lambert³, Ian Robinson⁴, Josh Johnson⁵, Pratima Labroo⁵, Caroline Garrett⁶. ¹Division of Analytical and Translational Research, Department of Research and Development, PolarityTE, Inc., United States, ²Division of Analytical and Translational Research, Department of Research and Development, PolarityTE, Inc., United States, ³Department of Veterinary Medicine, PolarityTE, Inc., United States, ⁴Division of Cell and Tissue Biology, Department of Research and Development, PolarityTE, Inc., United States, ⁵Division of Biomechanical Engineering, Department of Research and Development, PolarityTE, Inc., United States, ⁶Department of Veterinary Medicine, PolarityTE, Inc., United States
Disclosures: Michael Sieverts, None
- MON-383** **The intracortical vascular network and its modulation within intracortical BMUs in humans**
 *Christina Möller Andreasen¹, Søren Harving², Birgit MacDonald³, Kaja Søndergaard Laursen⁴, Jesper Skovhus Thomsen⁵, Jean-Marie Delaisse⁶, Thomas Levin Andersen⁷.
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Disclosures: Christina Möller Andreasen, None
- MON-384** **The Vitamin D- Vitamin D Receptor Axis Positively Regulates the Expression of Dystrobrevin Alpha During Murine Myogenic Differentiation**
 *Maria Tsoumpra¹, Michihiro Imamura¹, Yoshitaka Mizobe¹, Shin'ichi Takeda¹, Yoshitsugu Aoki¹, Seiji Fukumoto², Toshio Matsumoto². ¹Department of Molecular Therapy, National Institute of Neuroscience, National Centre of Neurology and Psychiatry, Japan, ²Fujii Memorial Institute of Medical Sciences, Tokushima University, Japan
Disclosures: Maria Tsoumpra, None

- MON-385** **Minocycline-Induced Dysbiosis of Gut Microbiota Alters Normal Osteoimmune Processes in Post-Pubertal Skeletal Development**
 *Amy Warner¹, Jessica Hathaway-Schrader¹, Joy Kirkpatrick¹, Brooks Swanson¹, Alex Alekseyenko¹, Chad Novince¹, Jose Aguirre². ¹Medical University of South Carolina, United States, ²University of Florida, United States
Disclosures: Amy Warner, None

MUSCULOSKELETAL PROGENITOR CELLS AND LINEAGE DETERMINATION

- MON-407** **The Loss of ephrinB1 in Osteoprogenitors Delays Fracture Repair**
 *Agnieszka Arthur¹, Sharon Paton¹, Stan Gronthos¹, Andrew Zannettino². ¹Mesenchymal Stem Cell Laboratory, Adelaide Medical School, Faculty of Health and Medical Sciences, University of Adelaide, Australia, ²Myeloma Research Laboratory, Adelaide Medical School, Faculty of Health and Medical Sciences, University of Adelaide, Australia
Disclosures: Agnieszka Arthur, None
- MON-408** **The COP biology study: Exploring the physiology of circulating osteoprogenitor cells**
 *Jack Feehan¹, Ahmed Al Saedi¹, Kulmira Nurgali¹, Gustavo Duque¹, Vasso Apostolopoulos². ¹The University of Melbourne, Australia, ²Victoria University, Australia
Disclosures: Jack Feehan, None
- MON-409** **Temporal Transcriptomic Differences Define Sexual Dimorphism in Murine Post Natal Bone Homeostasis and Aging**
 *Darlene Lu¹, Serkalem Demissie¹, Nina Horowitz², Amira Hussien², Beth Bragdon², Dana Daukss², Jack Page², Louis Gerstenfeld², Adam Gower³, Mark Lenburg³, Yuri Alekseyev⁴, Jennifer Schlezinger⁵, Elise Morgan⁶. ¹Department of Biostatistics, Boston University School of Public Health, United States, ²Department of Orthopaedic Surgery, Boston University School of Medicine, United States, ³Boston University School of Medicine, Computational Biomedicine, United States, ⁴Boston University School of Medicine, CLIN-Pathology & Lab Medicine, United States, ⁵Department of Environmental Health, Boston University School of Public Health, United States, ⁶Department of Mechanical Engineering, Boston University, Boston University, United States
Disclosures: Darlene Lu, None
- MON-410** **Effects of Advanced Glycation End Products, High Glucose, and Insulin-like Growth Factor-I on Myoblastic Differentiation and Apoptosis in C2C12 Cells**
 *Ippei Kanazawa¹, Naoko Adachi¹, Ken-ichiro Tanaka¹, Ayumu Takeno¹, Masakazu Notsu¹, Sayuri Tanaka¹, Toshitsugu Sugimoto¹. ¹Shimane University Faculty of Medicine, Japan
Disclosures: Ippei Kanazawa, None
- MON-411** **The effects of DNA nanomaterials on adipose-derived stem cells via DNA methylation**
 *Shiyu Lin¹, Yunfeng Lin¹. ¹Sichuan University, China
Disclosures: Shiyu Lin, None
- MON-412** **α SMA periosteal cells contribute to the increase in osteoblast numbers in response to load**
 *Brya Matthews¹, Natalie Wee², Ivo Kalajzic², Joanna Price³, Sara Windahl⁴. ¹University of Auckland, New Zealand, ²UConn Health, United States, ³Royal Agricultural University, United Kingdom, ⁴Karolinska Institute, Sweden
Disclosures: Brya Matthews, None
- MON-414** **Identification of Gli1 as a progenitor cell marker for meniscus injury repair**
 *Hao Sun¹, Yulong Wei¹, Lutian Yao¹, Leilei Zhong¹, Wei Yu¹, Su Chin Heo¹, Robert Mauck¹, Ling Qin¹. ¹Department of Orthopaedic Surgery, School of Medicine, University of Pennsylvania, United States
Disclosures: Hao Sun, None

- MON-415 Hypoxia Reduces Hematopoietic Cells Present During Ex Vivo Expansion of Bone Marrow Stromal Cells and Improves Adenoviral Transduction**
*Jackie Tang¹, Cassandra Spiller¹, Wendi Guo¹, Colleen Wu¹. ¹Duke University, United States
Disclosures: Jackie Tang, None
- MON-416 PIP5k1 β controls bone homeostasis through modulating both osteoclast and osteoblast differentiation**
*Xiaoying Zhao¹, Penglei Cui¹, Chuandong Wang¹, Jingyu Zhao¹, Xiaoling Zhang¹, Jiakexu². ¹Department of Orthopedic Surgery, Xinhua Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai 200092, China, China, ²School of Pathology and Laboratory Medicine, University of Western Australia, Perth, Western Australia, 6009, Australia, Australia
Disclosures: Xiaoying Zhao, None

OSTEOARTHRITIS AND OTHER JOINT DISORDERS

- MON-433 Large increase of BMP-7 in early axial spondyloarthritis**
*Elise Descamps¹, Anna Molto¹, Corinne Miceli Richard¹, Christian Roux¹, Karine Briot¹, Didier Borderie², Rik Lories³. ¹Department of rheumatology, Cochin Hospital, and Epidemiology and Biostatistics Unit, Sorbonne Paris Cite Research Center, Paris Descartes University, INSERM U1153, France, ²Department of Biology, Cochin Hospital, Paris Descartes University, France, ³Skeletal biology and Engineering Research Center, KU Leuven, Belgium
Disclosures: Elise Descamps, None
- MON-434 A Novel Regulatory Role of TRAPPC9 in In Inflammatory Chondrocytes and Osteoarthritis**
*Nazar Hussein¹, Ernesto Solorzano Zepeda², Fayeza Safadi³. ¹Kent State University, United States, ²Northeast Ohio Medical University (NEOMED), United States, ³Northeast Ohio Medical University, United States
Disclosures: Nazar Hussein, None
- MON-435 Blocking of CCL2-CCR2 axis Suppress articular chondrocyte hypertrophy, inflammatory response and osteoarthritis progression in MIA induced Osteoarthritis using soluble CCR2 gene therapy**
*seonae kim¹. ¹-, Republic of Korea
Disclosures: seonae kim, None
- MON-436 Investigation of the Relationship Between Inflammation and Calcification in the Tibiofemoral Joint for the Early Prediction of Knee Osteoarthritis**
*Marie Kimberly Lim¹, Isabel Song¹, Patrick Beyrer¹, Jacquelyn Golden¹, Nan Fang¹, Josiah Somani¹, Charles Witmer¹, Andy Chen¹, Jae Lee¹, Ariella Schneider¹, Amanda Jankelovits¹, Sofia Miguez¹, Li Baoer¹, Poul Hoiland-Carlsen¹, Abass Alavi², Chamith Rajapakse³. ¹Hospital of the University of Pennsylvania, United States, ²University Hospital of Pennsylvania, United States, ³Hospital of the University of Pennsylvania, United States
Disclosures: Marie Kimberly Lim, None
- MON-437 Metformin, AMP**
*Mi-La Cho¹, Hyun Sik Na¹. ¹The Catholic University of Korea, Republic of Korea
Disclosures: Mi-La Cho, None
- MON-438 The Regulatory Role of EGFR Signaling in Adult Cartilage Homeostasis and Osteoarthritis**
*Yulong Wei¹, Ling Qin¹, Xiaoyuan Ma¹, Hao Sun¹, Biao Han², Lin Han², Motomi Enomoto-Iwamoto³. ¹Department of Orthopaedic Surgery, School of Medicine, University of Pennsylvania, United States, ²School of Biomedical Engineering, Science and Health Systems, Drexel University, United States, ³Department of Orthopaedics, School of Medicine, University of Maryland, United States
Disclosures: Yulong Wei, None

- MON-439** **Articular cartilage degradation associated with aberrant subchondral bone remodeling in patients with osteoporotic osteoarthritis**
 *Linyang Chu¹, Zihao He¹, Xuequan Han¹, Mengning Yan¹, Zhifeng Yu¹. ¹Shanghai Key Laboratory of Orthopedic Implants, Department of Orthopedic Surgery, Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, China
Disclosures: Linyang Chu, None

OSTEOBLASTS

- MON-483** **Epigenetic Control of Osteoblast Differentiation by Chromobox 3 (Cbx3) Protein.**
 *Leila Bagheri¹, Roman Thaler¹, Christopher R. Paradise¹, Sofia Jerez¹, Farzaneh Khani¹, Pengfei Zan¹, David R. Deyle¹, Todd A. Milbrandt¹, A. Noelle Larson¹, Amel Dudakovic¹, Andre J. van Wijnen¹, Mario Galindo². ¹Mayo Clinic, United States, ²University of Chile, Chile
Disclosures: Leila Bagheri, None
- MON-484** **Kalirin regulates bone mass through effects on osteoblast activity, osteocyte morphology and intercellular communication.**
 *Jung Min Hong¹, Daniel Godfrey¹, Sung-Kyung JoAn Kim¹, Angela Bruzzaniti¹, Robert Holland², Padmini Deosthale³, Lilian Plotkin³, Matthew Allen³. ¹Indiana University School of Dentistry, United States, ²Indiana University School of Dentistry, United States, ³Indiana University School of Medicine, United States
Disclosures: Jung Min Hong, None
- MON-485** **Dipeptidyl Peptidase 4 Effect and its Inhibition by Vildagliptin, on Osteogenic and Adipogenic Differentiation of Human Mesenchymal Stem Cells**
 *Antonio Casado-Díaz¹, Bárbara Torrecillas-Baena², Ángel Rodríguez-Ramos³, Jesús González-Macías⁴, José Manuel Quesada-Gómez⁵. ¹CIBER de Fragilidad y Envejecimiento Saludable (CIBERFES), Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC), Hospital Universitario Reina Sofía, Spain, ²Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC), Hospital Universitario Reina Sofía, Spain, ³Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC), Universidad de Córdoba, Spain, ⁴Bone Metabolic Unit, Department of Internal Medicine, Hospital Universitario Marqués de Valdecilla-IDIVAL, Universidad de Cantabria, Spain, ⁵Unidad de Gestión Clínica de Endocrinología y Nutrición, CIBER de Fragilidad y Envejecimiento Saludable (CIBERFES), Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC), Hospital Universitario Reina Sofía, Spain
Disclosures: Antonio Casado-Díaz, None
- MON-486** **Activation of Nox4 is not required for OVX-induced osteoblast senescence and bone loss in mice**
 *Jin-Ran Chen¹, Oxana P. Lazarenko¹, Haijun Zhao¹, James Watt², Martin J. Ronis². ¹Arkansas Children's Nutrition Center and the Department of Pediatrics, University of Arkansas for Medical Sciences, United States, ²Department of Pharmacology and Experimental Therapeutics, Louisiana State University Health Sciences Center, United States
Disclosures: Jin-Ran Chen, None
- MON-487** **PTH Stimulates RANKL and Inhibits OPG in Primary Murine Osteoblasts via a CaMKK/Calcineurin/Nfat Pathway Independent of cAMP/PKA**
 *Shilpa Choudhary¹, Kenneth Maccormac¹, Erica Quinones¹, Carol Pilbeam¹. ¹UConn Health, United States
Disclosures: Shilpa Choudhary, None
- MON-488** **Conditional Activation of NF- κ B Inducing Kinase (NIK) in the Osteolineage Enhances both Basal and Loading-Induced Bone Formation**
 *Jennifer Davis¹, Linda Cox¹, Christine Shao¹, Cheng Lyu¹, Shaopeng Liu¹, Deborah Veis¹, Rajeev Aurora². ¹WASHINGTON UNIVERSITY IN ST. LOUIS SCHOOL OF MEDICINE, United States, ²St Louis University, United States
Disclosures: Jennifer Davis, None

- MON-489 Acceleration of bone formation and suppression of bone resorption by soluble Frizzled2 receptor in mice**
 *Hisashi Hasegawa¹, Emi Akizawa¹, Kengo Yamawaki¹, Yuji Yamazaki¹, Kenji Nagao¹, Kenta Nakajima², Yuki Tanbo³, Miki Murai³, Eri Taguchi³. ¹Nephrology Research Laboratories, Kyowa Kirin Co., Ltd., Japan, ²Nephrology Research Laboratories, Kyowa Kirin Co., Ltd, Japan, ³Research Core Function Laboratories, Kyowa Kirin Co., Ltd., Japan
Disclosures: Hisashi Hasegawa, None
- MON-490 Deletion of the ER stress sensor Ire1a, but not Perk, in the osteoblast lineage decreases bone mass.**
 *Christian Melendez-Suchi¹, Alexander Harb¹, Erin Mannen¹, Srividhya Iyer¹, Li Han², Aaron Warren², Maria Almeida². ¹Department of Orthopaedic Surgery, University of Arkansas for Medical Sciences, Little Rock, Arkansas, United States, ²Division of Endocrinology and Metabolism, Center for Osteoporosis and Metabolic Bone Diseases, Little Rock, Arkansas, United States
Disclosures: Christian Melendez-Suchi, None
- MON-491 Neuromedin-U (NMU) negatively regulates bone remodeling**
 *Kelli Jestes¹, Krista Jackson¹, Yu-Tin Hsiao¹, Jonathan Lowery¹, Tara Zukosky², Maria Squire². ¹Marian University College of Osteopathic Medicine, United States, ²University of Scranton, United States
Disclosures: Kelli Jestes, None
- MON-492 Screening for Small Molecules That Bind to the BMPRI1A: An In Silico Computational Analysis**
 *Chandrasekhar Kesavan¹, Ritika V Surisetty², Karthikeyan Muthusamy³, Subburaman Mohan⁴. ¹JLP VA Medical Center, United States, ²VA Loma Linda Healthcare system, United States, ³Alagappa University, India, ⁴JLP VA Medical Center, United States
Disclosures: Chandrasekhar Kesavan, None
- MON-493 The Vitamin C Dependent Epigenetic Regulator Hairless Controls Bone Development and Osteoblast Differentiation**
 *Farzaneh Khani¹, Roman Thaler¹, Chris Paradise¹, Oksana Pichurin¹, Amel Dudakovic¹, Andre van Wijnen¹, David Deyle². ¹Departments of Orthopedics, Mayo Clinic, United States, ²Department of Medical Genetics, Mayo Clinic, United States
Disclosures: Farzaneh Khani, None
- MON-494 Osteoblast-specific overexpression of Gas and Gaq/11 leads to differential fracture healing responses**
 *Kathy Kyungeun Lee¹, Jane Mitchell¹, Marc Grynepas². ¹University of Toronto, Canada, ²Lunenfeld-Tanenbaum Research Institute, Canada
Disclosures: Kathy Kyungeun Lee, None
- MON-495 Targeting a newly identified lncRNA and its interaction with HuR to promote osteogenic cells migration to bone formation surface for reversing established age-related osteoporosis**
 *Dijie Li¹, Chaofei Yang¹, Zhihao Chen¹, Fan Zhao¹, Airong Qian¹, Jin Liu², Chao Liang², Daogang Guan², Shuaijian Ni², Qing Ren², Yuan Tang², Xiaohao Wu², Aiping Lu², Ge Zhang². ¹Lab for Bone Metabolism, Key Lab for Space Biosciences and Biotechnology, School of Life Sciences, Northwestern Polytechnical University, Xi'an, Shaanxi 710072, China., China, ²Law Sau Fai Institute for Advancing Translational Medicine in Bone and Joint Diseases, School of Chinese Medicine, Hong Kong Baptist University, 999077 Hong Kong, SAR, China., Hong Kong
Disclosures: Dijie Li, None
- MON-496 A long noncoding RNA regulatory mechanism of osteoblast proliferation**
 *Mulati Mieradili¹, Hiroyuki Inose². ¹First author, Japan, ²author, Japan
Disclosures: Mulati Mieradili, None

- MON-497** **A Short Peptide within the Pigment Epithelium Derived Factor that Binds to the Receptor Promotes Human Mesenchymal Stem Cell Differentiation and Matrix Mineralization**
 *Christopher Niyibizi¹, Joyce Tombran-Tink¹, Feng Li². ¹Penn State College of Medicine, United States, ²University of Pittsburgh, United States
Disclosures: Christopher Niyibizi, None
- MON-498** **Glutaminase is necessary and sufficient for preosteoblast differentiation and bone formation**
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- MON-499** **Glutamine uptake through Slc7a7/y+LAT1 is required for WNT induced osteoblast differentiation.**
 *Leyao Shen¹, Courtney Karner¹, Deepika Sharma². ¹Department of Orthopaedic Surgery; Department of Cell Biology, United States, ²Department of Orthopaedic Surgery, United States
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- MON-500** **Activation of Mitochondrial Respiration is an Early Akt-dependent Step in Osteoblast Differentiation Induced by Various Osteogenic Factors**
 *Charles Smith¹, Roman Eliseev¹. ¹University of Rochester, United States
Disclosures: Charles Smith, None
- MON-501** **The effect of SNP rs2887571 (located in an estrogen receptor α binding site) on WNT5B function in bone**
 *Sarochoa Suthon¹, Susan Krum¹. ¹UTHSC, United States
Disclosures: Sarocha Suthon, None
- MON-502** **Increased bone mass in female mice lacking mitofusin-2 (Mfn2) in osteoprogenitors**
 *Allahdad Zarei¹, Anna Ballard¹, Deborah J. Veis¹. ¹Division of Bone and Mineral Diseases, Washington University School of Medicine, United States
Disclosures: Allahdad Zarei, None
- MON-503** **Canonical Notch signaling intersects with Runx2 to promote human osteoblast differentiation**
 *Kurt D. Hankenson¹, Yadav Wagley¹. ¹University of Michigan, United States
Disclosures: Kurt D. Hankenson, None
- OSTEOCLASTS**
- MON-541** **Osteoprotective Neuropilin-1 (Nrp-1) Signaling in Immunosuppressive Regulatory T cells (TREG) is a Potential Target of Orthopedic Particle-induced Inflammatory Osteolysis**
 *Timothy (Hung-Po) Chen¹, Manoj Arra¹, Gabriel Mbalaviele¹, Gaurav Swarnkar¹, Yousef Abu-Amer¹. ¹Washington University School of Medicine, United States
Disclosures: Timothy (Hung-Po) Chen, None

- MON-542** **Impact on the clinical and osteoclastic phenotypes of a rare variant in the DOCK6 gene in familial forms of Paget's disease linked to the p. Pro392Leu mutation in the SQSTM1 gene.**
 *Mariam Dessay¹, Emile Couture¹, Edith Gagnon¹, Laetitia Michou², Jacque P.Brown³.
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- MON-543** **The role of NLRP12 attenuating apical periodontitis development**
 *Thaise Mayumi Taira¹, Léa Assed Bezerra Silva¹, Vilma Lima², Tarcilia Aparecida Silva³,
 Fernando Queiroz Cunha⁴, Sandra Yasuyo Fukada⁵. ¹School of Dentistry of Ribeirão Preto,
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 Medicine of Ribeirão Preto, Brazil, ⁵School of Pharmaceutical Sciences of Ribeirão Preto,
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Disclosures: Thaise Mayumi Taira, None
- MON-544** **Acyloxyacyl Hydrolase (AoaH)-deficiency promotes osteoclast function and bone resorption**
 *Dun Hong¹, Zhiyan Li¹, Xu Cheng¹, Xiaoting Song¹. ¹Taizhou Hospital Affiliated to
 Wenzhou Medical University, China
Disclosures: Dun Hong, None
- MON-546** **MEP50 Suppresses Osteoclast Differentiation Which Effect is Released Through Direct Interaction with the Osteoclast Transcription Factor C/EBPα**
 *Joel Jules¹, Wei Chen², Yi-Ping Li². ¹University of Alabama at Birmingham and The
 Edward Via College of Osteopathic Medicine, Auburn Campus, Auburn, AL, United States,
²University of Alabama at Birmingham, United States
Disclosures: Joel Jules, None
- MON-547** **USP34 Controls Osteoclast Differentiation by Regulating NF-κB Signaling**
 *Qiwen Li¹, Mengyuan Wang¹, Yuchen Guo¹, Weiqing Liu¹, Quan Yuan¹. ¹State Key
 Laboratory of Oral Diseases, West China Hospital of Stomatology, Sichuan University,
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- MON-548** **DAG levels differentially modulate osteoclast versus macrophage functions**
 *Sahil Mahajan¹, Roberta Faccio¹. ¹Department of Orthopaedic Surgery, Washington
 University, United States
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- MON-549** **Histochemical evidence of the presence of osteoclast-like cells in Rankl-/- mice**
 *Yukina Miyamoto Takasaki¹, Miki Abe², Norio Amizuka², Tomoka Hasegawa², Nobuyuki
 Udagawa³. ¹Dept. of Devl. Biol of Hard Tissue, Grad. Sch. Of Dent. Med. Hokkaido Univ,
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Disclosures: Yukina Miyamoto Takasaki, None
- MON-550** **Proteolysis of M-CSF receptor promotes the differentiation of osteoclasts and arthritic bone erosion**
 *Sehwan Mun¹, Seyeon Bae¹, Ye Ji Lee¹, Haemin Kim¹, Peter Park¹, Kaichi Kaneko¹,
 Takayuki Fujii¹, George Kalliolias¹, Chitra Dahia¹, Kyung-Hyun Park-Min¹. ¹Hospital for
 Special Surgery, United States
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- MON-551 OFS, Novel Sentinel Imaging Probes for Early Diagnosis of Periodontitis**
 *Hiroko Okawa¹, Shota Homma¹, Ichiro Nishimura¹, Akishige Hokugo², Lixin Wang², Daniel Khalil², Reza Jarrahy², Eric Richard³, Yiyang Zheng³, Boris Kashemirov³, Charles McKenna³. ¹Weintraub Center for Reconstructive Biotechnology, UCLA School of Dentistry, United States, ²Regenerative Bioengineering and Repair Laboratory, Department of Surgery, David Geffen School of Medicine at UCLA, United States, ³Department of Chemistry, Dornsife College of Letters, Arts and Sciences, USC, United States
Disclosures: Hiroko Okawa, None
- MON-552 Lycorine protects mice from inflammatory bone loss via decreasing autophagy**
 *Hyun-Jung Park¹, Hye-Seon Choi¹. ¹University of Ulsan, Republic of Korea
Disclosures: Hyun-Jung Park, None
- MON-553 Staphylococcus aureus Infects Osteoclasts and Replicates Intracellularly**
 *Philip Roper¹, Jennifer Krauss¹, Anna Ballard¹, Deborah Veis¹. ¹Washington University School of Medicine, United States
Disclosures: Philip Roper, None
- MON-554 ATF3/7 Transcriptionally Regulate the Expression of Cthrc1 in Osteoclasts**
 *Yoshinori Naoe¹, Sunao Takeshita¹. ¹National Center for Geriatrics and Gerontology, Japan
Disclosures: Yoshinori Naoe, None
- MON-555 Inhibitory action of IL-3 on osteoclast differentiation is conserved in mice, human and rats.**
 *Vikrant Piprode¹, Kanupriya Singh¹, Anil Kumar¹, Snehal R. Joshi¹, Mohan R. Wani¹. ¹National Centre for Cell Science, India
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- MON-556 Dpy30 regulates RANKL-mediated osteoclastogenesis**
 *Yanfang Zhao¹, Zhaoferi Li¹, Jannet Katz¹, Suzanne M Michalek¹, Ping Zhang¹, Xu Feng², Hao Jiang³. ¹University of Alabama at Birmingham, United States, ²University of Alabama at Birmingham, United States, ³University of Virginia, United States
Disclosures: Yanfang Zhao, None

OSTEOCYTES

- MON-579 DOCK7 Deletion Diminishes Bone Material Properties and Osteocytes Dendrite Morphologies**
 *Jennifer Coulombe¹, Virginia Ferguson¹, Eben Estell², Kathleen Becker², Vanessa Sherck³, Clifford Rosen⁴. ¹Department of Mechanical Engineering, University of Colorado Boulder, United States, ²Maine Medical Center Research Institute, United States, ³Department Orthopedics, University of Colorado Anschutz Medical Campus, United States, ⁴Tufts University School of Medicine, Maine Medical Center Research Institute, United States
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- MON-580 Connexin 43 Deficiency in Osteocytes Attenuates Cortical Bone Loss from Unloading**
 *Michael Friedman¹, Yue Zhang¹, Camilla Reina Maroni¹, Caleb Ryan¹, Henry Donahue¹. ¹Virginia Commonwealth University, United States
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- MON-581 Osteocytic Connexin 43 Channels Affect Fracture Healing**
 *Yunhe Chen¹, Meng Chen¹, Tong Xue¹, Guibin Li¹, Dongen Wang¹, Peng Shang¹, Huiyun Xu¹, Jean Jiang². ¹Northwestern Polytechnical University, China, ²University of Texas Health Science Center, San Antonio, United States
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- MON-582 Deletion of Sphingosine Phosphate Lyase 1 (Sgpl1) in Osteocytes reduces lacunar size and prevents aging and OVX-induced bone loss in mice**
 *Zheng-tao Lyu¹, Roland Baron¹, Dorothy Hu², Gili Naveh², Francesca Gori². ¹Harvard Medical School, United States, ²Harvard School of Dental Medicine, United States
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- MON-583 Osteocyte Transcriptome Dysregulation in Two Mouse Models of Osteogenesis Imperfecta**
 *Roy Morello¹, Sarah Zimmerman¹, Melissa Lipsmeyer¹, Milena Dimori¹. ¹University of Arkansas for Medical Sciences, United States
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- MON-584 Osteocyte Dysfunction Alters Systemic Bone Loss After Fracture**
 *Benjamin Osipov¹, Armaun J. Emami¹, Blaine A. Christiansen¹, Deepa K. Muruges², Gabriela G. Loots². ¹Department of Orthopaedic Surgery, University of California Davis Health, United States, ²Physical and Life Sciences Directorate, Lawrence Livermore National Laboratory, United States
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- MON-585 Osteoblast-to-Osteocyte Differentiation via Stacking Demineralized Bone Slices**
 *Yongkuk Park¹, Jungwoo Lee¹. ¹University of Massachusetts, United States
Disclosures: Yongkuk Park, None
- MON-586 Examination of optimal culture condition of bone marrow cells on β -TCP / RCP hybrid scaffold.**
 *Ryo Umeyama¹, Takanori Yamawaki², Atsuhiko Hikita², Tsuyoshi Takato³, Kazuto Hoshi⁴. ¹Department of Sensory and Motor System Medicine, Department of Oral and Maxillofacial Surgery, Dentistry&Orthodontics, The University of Tokyo Graduate School of Medicine, Japan, ²The University of Tokyo Hospital Division of Tissue Engineering, Japan, ³JR Tokyo General Hospital, Japan, ⁴Department of Sensory and Motor System Medicine, Department of Oral and Maxillofacial Surgery, Dentistry&Orthodontics, The University of Tokyo Graduate School of Medicine, Japan
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- MON-587 Overlapping properties and functions of matrix vesicles and exosomes/extracellular vesicles in bone cells**
 *Kun Wang¹, LeAnn Tiede-Lewis¹, Donggao Zhao¹, Andrew Keightley¹, Sarah Dallas¹, Lynda Bonewald². ¹University of Missouri Kansas City, United States, ²Indiana University, United States
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- MON-588 Morphologic and Molecular Equivalence of Osteocytes in Biomimetic Hydrogels**
 *Danielle Wu¹, Mary C. Farach-Carson¹, William Thompson². ¹UTHSC, United States, ²Indiana University, United States
Disclosures: Danielle Wu, None

OSTEOPOROSIS - ASSESSMENT

- MON-617 Treatments of Osteoporosis Increase Bone Material Strength index in Patients with low Bone Mass**
 *Manuela Schöb¹, Frank Malgo¹, Elizabeth M. Winter¹, Socrates E. Papapoulos¹, Natasha M. Appelman-Dijkstra¹. ¹Center for Bone Quality, Leiden University Medical Center, Department of Medicine, Division of Endocrinology, Netherlands
Disclosures: Manuela Schöb, European Calcified Tissue Society, Grant/Research Support
- MON-618 Individuals with Central Fractures have More Prevalent Vertebral Fractures, Lower Trabecular Bone Score and Lower BMD than Individuals with Peripheral Fractures: a Sub-study of NoFRACT**
 *Tove Tveitan Borgen¹, Lene Bergendahl Solberg¹, Cathrine Brunborg¹, Ida Lund¹, Cecilie Dahl¹, Tone Kristin Omsland¹, Lars Nordsletten¹, Erik Fink Eriksen¹, Åshild Bjørnerem², Camilla Andreasen², Ann Kristin Hansen², May-Britt Stenbro³, Lars Michael Hübschle³, Anne Frøholdt³, Wender Figved⁴, Ellen Margrete Apalset⁵, Jan-Erik Gjertsen⁵, Trude Basso⁶, Jens-Meinhard Stutzer⁷, Frede Frihagen⁸. ¹University of Oslo, Norway, ²The Arctic University of Norway, Norway, ³Drammen Hospital, Norway, ⁴Bærum Hospital, Norway, ⁵University of Bergen, Norway, ⁶St Olavs Hospital, Norway, ⁷Molde Hospital, Norway, ⁸Oslo University Hospital, Norway
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- MON-619 Study on vitamin D deficiency in Japan: relationship to age, gender, and bone mineral density**
 *Ko Chiba¹, Narihiro Okazaki¹, Kazuteru Shiraishi¹, Makoto Osaki¹. ¹Nagasaki University Graduate School of Biomedical Sciences, Japan
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- MON-620 3D-DXA measurements in lumbar spine in patients with vertebral fractures.**
 *Silvana Di Gregorio¹, Lorena Brance¹, Luis Del Rio¹, Ludovic Humbert². ¹Densitometria. Cetir. Grupo Ascires, Spain, ²Galgo Medical, Spain
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- MON-621 Trend Towards Loss of Bone Microarchitecture Assessed by Trabecular Bone Score in Postmenopausal Women on Exemestane Therapy: Secondary Analysis Of A RCT**
 *Madeline Dwyer¹, Lianne Tile², George Tomlinson³, Angela Cheung³, Sandya Pruthi⁴, James Ingle⁴, John Robbins⁵, Paul Gross⁶, Harriet Richardson⁷. ¹University of Toronto, Canada, ²University Health Network, Canada, ³University Health Network, Canada, ⁴Mayo Clinic Rochester, United States, ⁵University of California, United States, ⁶Massachusetts General Hospital, United States, ⁷Queens University, Canada
Disclosures: Madeline Dwyer, None
- MON-622 Follicle-stimulating Hormone And Estradiol Are Associated With Bone Mineral Densities And Risk Of Fractures In Men With Type 2 Diabetes Mellitus**
 *Yixuan Jing¹, Xiaofeng Wang¹, Jianmin Liu¹, Hongyan Zhao². ¹Department of Endocrine and Metabolic Diseases, Ruijin Hospital, Shanghai Jiao-Tong University School of Medicine; Shanghai Clinical Center for Endocrine and Metabolic Diseases, Shanghai, China, China, ²Department of Endocrine and Metabolic Diseases, Rui-jin Hospital, Shanghai Jiao-tong University School of Medicine, China
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- MON-623 Orthopedic Bone Health Optimization**
 *Rowan Karaman¹, Kristyn Hare¹, Neil Binkley¹, Gretta Borchardt¹, Diane Krueger¹, Paul Anderson¹. ¹University of Wisconsin-Madison, United States
Disclosures: Rowan Karaman, None
- MON-624 Association between osteoporosis-related vertebral fractures and DXA-derived 3D measurements at lumbar spine**
 *Mirella López Picazo¹, Ludovic Humbert¹, Silvana Di Gregorio², Luis Del Río², Miguel Ángel González Ballester³. ¹Galgo Medical, S.L., Spain, ²CETIR Group Medic, Spain, ³BCN MedTech, Universitat Pompeu Fabra, Spain
Disclosures: Mirella López Picazo, None
- MON-625 Spinal curvature assessed by a computer-assisted device and anthropometric indicators are useful in discriminating vertebral fractures among individuals with back pain**
 *Satoshi Mizukami¹, Yasuyo Abe¹, Ritsu Tsujimoto¹, Kazuhiko Arima¹, Kiyoshi Aoyagi¹, Mitsuo Kanagae², Goji Chiba². ¹Nagasaki University, Japan, ²Nishi-Isahaya Hospital, Japan
Disclosures: Satoshi Mizukami, None
- MON-626 FRAX without BMD predicts treatment recommendations for Veterans who recently sustained a low trauma non-vertebral/non-hip fracture**
 *Nicole Sagalla¹, Cathleen Colon-Emeric¹, Kenneth Lyles¹, Richard Lee¹, Julie Vogensen². ¹Duke University Hospital, United States, ²Durham Veteran Affairs, United States
Disclosures: Nicole Sagalla, T32DK007012, Grant/Research Support

MON-627

Osteocalcin and its Forms Across the Adult Male Lifespan

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MON-628

Analysis of 2D-DXA image by 3D-SHAPERTM gives additional information for the treatment with denosumab in post-kidney transplant recipients.

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MON-629

Image validation of Spectral analysis filters on femoral bone with DECT: An Ex-vivo Study on Human Femur

*Philippe Paul Wagner¹, Jean- Paul Roux¹, Francois Duboeuf¹, Roland Chapurlat¹, Helene Follet¹, Quentin Chuzel², Jean-Baptiste Pialat². ¹INSERM UMR 1033, France, ²Univ Lyon Sud, Hospices Civils de Lyon, Lyon, France, France

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MON-630

Intrasite short-term precision in first and second generation HR-pQCT scanners assessed using phantoms and repeated scans in adults with osteogenesis imperfecta

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Disclosures: Elizabeth A. Zimmermann, Mereo BioPharma, Grant/Research Support

OSTEOPOROSIS - EPIDEMIOLOGY

- MON-669 The National Treatment Gap In Secondary Fracture Prevention In Denmark 2005-2014: Individual Patient Data Including Both Hospital Administered And All Prescribed Anti Osteoporosis Medications**
 *Michael K Skjød¹, Martin Ernst², Bo Abrahamsen², Sara Khalid³, Antonella Delmestri³, Daniel Prieto-Alhambra³, Cesar Libanati⁴, Emese Toth⁴, Cyrus Cooper⁵, Daniel Martinez-Laguna⁶. ¹Holbæk Hospital, Denmark, ²OPEN, University of Southern Denmark, Denmark, ³NDORMS, University of Oxford, United Kingdom, ⁴UCB, Belgium, ⁵MRC Lifecourse Epidemiology Unit, Univ of Southampton, United Kingdom, ⁶Instituto de Salud Carlos III, Spain
Disclosures: Michael K Skjød, UCB, Grant/Research Support
- MON-670 Relationship between vitamin D, parathyroid hormone and bone health in Myanmar subjects**
 *Moe Wint Aung¹, Emma Mitchell², Zarchi Pyone³, Thinn Thinn Hlaing⁴, Harshal Deshmukh⁵, Mo Aye⁶. ¹Department of Diabetes and Endocrinology, Yangon General Hospital, Myanmar, ²NHS Thames Valley and Wessex Leadership Academy, United Kingdom, ³University of Medicine 1, Myanmar, ⁴Dept of Chemical Pathology and Metabolic Medicine, University of Medicine 1, Myanmar, ⁵Hull York Medical School, United Kingdom, ⁶Hull University Teaching Hospitals NHS Trust, United Kingdom
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- MON-671 Disease Burden of Osteoporosis and Other NCDs in Lebanon**
 *Aya Bassatne¹, Ghada El-Hajj Fuleihan¹, Hilda Harb², Jenny Romanos², Walid Ammar². ¹Calcium Metabolism and Osteoporosis Program American University of Beirut, Lebanon, ²Lebanese ministry of public health, Lebanon
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- MON-672 Serum Pentosidine in Women in the Canadian Multicentre Osteoporosis Study**
 *Lindsie Blencowe¹, Andrea Bozovic², Vathany Kulasingam², George Tomlinson², Evelyn Wong², Claudie Berger³, Suzanne Morin³, David Goltzman³, Jerilynn Prior⁴, Robert Josse⁵, William D. Leslie⁶, Stephanie Kaiser⁷, Christopher Kovacs⁸, Jonathan D. Adachi⁹, Angela Cheung¹⁰. ¹University of Toronto, Canada, ²University Health Network, Canada, ³McGill University, Canada, ⁴University of British Columbia, Canada, ⁵St. Michael's Hospital, Canada, ⁶University of Manitoba, Canada, ⁷Dalhousie University, Canada, ⁸Memorial University of Newfoundland, Canada, ⁹McMaster University, Canada, ¹⁰University Health Network, University of Toronto, Canada
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- MON-673 Development and Validation of a Risk Score to Predict the First Hip Fracture in the Oldest Old: Retrospective Cohort Studies**
 *Ching-Lung Cheung¹, Ming-Tuen Lam¹, Chor-Wing Sing¹, Gloria Li¹, Annie Kung¹, Kathryn Tan¹. ¹The University of Hong Kong, Hong Kong
Disclosures: Ching-Lung Cheung, None
- MON-674 Incident Fractures and Locations of Subsequent Fractures in Postmenopausal Women: The Women's Health Initiative Observational Study**
 *Carolyn Crandall¹, Rebecca Hunt², Katie Stone³, John Robbins⁴, Maryam Sattari⁵, Karen Johnson⁶, Julie Weitlauf⁷, Tanya Gure⁸, Andrea LaCroix⁹, Jane Cauley¹⁰. ¹University of California, Los Angeles, United States, ²Fred Hutchinson Cancer Research Center, United States, ³California Pacific Medical Center Research Institute and San Francisco Coordinating Center, United States, ⁴UC Davis Medical Center, United States, ⁵University of Florida, United States, ⁶University of Tennessee Health Science Center, United States, ⁷Veterans Affairs Palo Alto Health Care System, Palo Alto, CA and Department of Psychiatry and Behavioral Sciences, Stanford University, United States, ⁸The Ohio State University, United States, ⁹University of California, San Diego, United States, ¹⁰Graduate School of Public Health, University of Pittsburgh, United States
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- MON-675** **Effect of Fractures on Overall Survival in Cancer Patients: The NHANES database**
 *Beatrice Edwards¹, Xiaotao Zhang². ¹Central Texas Veterans Healthcare System, United States, ²Baylor University, United States
Disclosures: Beatrice Edwards, None
- MON-677** **Comorbid illnesses and reduced GFR predict fractures in patients with diabetes in an ethnic-specific manner**
 *Rajesh Jain¹, Mark Weiner¹, Huaqing Zhao¹, Kevin Williams¹, Tamara Vokes². ¹Lewis Katz School of Medicine at Temple University, United States, ²The University of Chicago, United States
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- MON-678** **The Effect of Marital Status on Risk Factors for Fracture and the Risk of Hip Fracture in Sweden**
 *Helena Johansson¹, John A Kanis¹, Catharina Lewerin², Peter Johansson², Mattias Lorentzon³, Daniel Sundh³, Dan Mellström³, Magnus K Karlsson⁴, Björn E Rosengren⁴, Eva Ribom⁵, Claes Ohlsson⁶. ¹McKillop Health Institute, Australian Catholic University, Australia, ²Section of Hematology and Coagulation, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, ³Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, University of Gothenburg, Sweden, ⁴Clinical and Molecular Osteoporosis Research Unit, Department of Clinical Sciences Malmö, Lund University and Department of Orthopedics, Skane University Hospital, Sweden, ⁵Department of Surgical Sciences, University of Uppsala, Sweden, ⁶Center for Bone and Arthritis Research (CBAR), Sahlgrenska Academy, University of Gothenburg, Sweden
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- MON-679** **Mortality Following Fragility Fracture in an Eastern Regional Hospital in Singapore**
 *Linsey Gani¹, Vivien Tan¹, Nicholas Tan¹, Carmen Kam¹, Thomas King¹. ¹Changi General Hospital, Singapore
Disclosures: Linsey Gani, None
- MON-680** **Association of Beta Blocker Use and Bone Mineral Density using the Framingham Osteoporosis Study: Effects of Dose, Duration, and Drug**
 *Christine Lary¹, Kathleen Nevola¹, Alexandra Hinton¹, Katherine Motyl¹, Lee Lucas¹, Sarah Hallen¹, Theresa Shireman², Andrew Zullo², Karen Houseknecht³, Sarah Berry⁴, Douglas Kiel⁴. ¹Maine Medical Center Research Institute, United States, ²Brown University School of Public Health, United States, ³University of New England, United States, ⁴Harvard Medical School, United States
Disclosures: Christine Lary, None
- MON-681** **Difference of Clinical Outcomes after Fracture Hospitalization between Elderly Men and Women**
 *Jiannong Liu¹, Haifeng Guo¹, Yi Peng¹. ¹Hennepin Healthcare Research Institute, United States
Disclosures: Jiannong Liu, None
- MON-682** **Nitrogen-containing Bisphosphonates Are Associated with Reduced Risk of Pneumonia in Patients with Hip Fracture: A Population-based Cohort Study.**
 *Chor-Wing Sing¹, Ching-Lung Cheung¹. ¹Department of Pharmacology and Pharmacy, The University of Hong Kong, Hong Kong
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- MON-683** **Skin autofluorescence, a non-invasive biomarker for advanced glycation end-products, is associated with prevalent vertebral and major osteoporotic fractures: The Rotterdam study**
 *Komal Waqas¹, Katerina Trajanoska¹, Jinluan Chen², Andre Uitterlinden², Fernando Rivadeneira², Fjorda Koromani³, Carola Zillikens⁴. ¹Erasmus Medical Centre, Netherlands, ²Erasmus Medical Centre, Netherlands, ³Erasmus medical Centre, Netherlands, ⁴Erasmus Medical Centre, Netherlands
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MON-684 Derivation and External Validation of the Lower Limit of Normal Values' Predictive Ability for Future Fracture in African-American Women

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MON-685 Incidence of osteoporotic refractures and associated mortality in Korea using Nationwideclaims data

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MON-686 Circulating Protein Biomarkers for Osteoporosis: Results from a Mendelian Randomization Study

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OSTEOPOROSIS - HEALTH SERVICES RESEARCH

MON-700 Current Practices in Osteoporosis Identification and Treatment in Geriatric Hip Fractures at a Tertiary Care Hospital in Pakistan: A Case Series

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Disclosures: Tashfeen Ahmad, None

MON-701 Baseline secondary fracture prevention in three Health Systems in Mexico: The FLS-Mx Inter-Institutional Group

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Disclosures: Grushenska Aguilar-Esparza, None

MON-702 Assessing Hip Surgery Outcomes in the State of Texas: Are Outcomes Equal Across Race and Ethnicity

*Ryan Giang¹, Roberto Fajardo¹, Ammar Saigal², Matthew Morrey³, Joleen Beltrami⁴.

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Disclosures: Ryan Giang, None

MON-703 Perception of severe osteoporosis amongst medical doctors in South Korea: Awareness, impact, and treatment

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Disclosures: Jin Hwan Kim, None

- MON-704 Why patients with a recent fracture do not attend the FLS: a Home visit study among non-responders to FLS invitation.**
 *Peter van den Berg¹, Paul van Haard², Piet Geusens³, Joop van den Bergh³, Dave Schweitzer⁴. ¹Maastricht University Medical Center +, Maastricht, the Netherlands, Netherlands, ²Reinier the Graaf Gasthuis, Netherlands, ³Hasselt University, Netherlands, ⁴Reinier de Graaf Gasthuis Delft, Netherlands
Disclosures: Peter van den Berg, None
- MON-705 Implementing an Osteoporosis Program into Your Practice, Hospital, or Organization: What Works and What Doesn't Work**
 *Kathy Williams. EdD¹. ¹Kaiser Permanente, United States
Disclosures: Kathy Williams. EdD, None

OSTEOPOROSIS - NUTRITION, DIETARY SUPPLEMENTS AND PHYSICAL ACTIVITY

- MON-721 Bovine Colostrum Supplementation and Bone Health: a Pilot Study**
 *Tânia Amorim¹, Laura Freitas¹, Eirini K Kydonaki¹, Henrique Reguendo¹, Carlos R Simón², Ana R Bastos³, Raphaël F Canadas³, Joaquim M Oliveira⁴, Vitor M Correlo⁴, Rui L Reis⁴, Yiannis Koutedakis⁵, Rui Pinto⁶, Franklim Marques⁷. ¹UCIBIO/REQUIMTE, Faculty of Pharmacy, University of Porto, Portugal, Portugal, ²Centro de Estudios Superiores de la Industria Farmacéutica (CESIF, SA), Spain, Spain, ³3B's Research Group, I3Bs - Research Institute on Biomaterials, Biodegradables and Biomimetics, University of Minho, Portugal; ICVS/3B's, Portugal, Portugal, ⁴3B's Research Group, I3Bs - Research Institute on Biomaterials, Biodegradables and Biomimetics, University of Minho, Portugal; ICVS/3B's, Portugal; The Discoveries Centre for Regenerative and Precision Medicine, University of Minho, Portugal, Portugal, ⁵Faculty of Education, Health and Wellbeing, University of Wolverhampton, United Kingdom; School of Sports and Exercise Sciences, University of Thessaly, Greece, Greece, ⁶Med.UL, Faculty of Pharmacy, University of Lisbon, Lisbon, Portugal, Portugal, ⁷UCIBIO/REQUIMTE, Faculty of Pharmacy, University of Porto, Porto, Portugal, Portugal
Disclosures: Tânia Amorim, None
- MON-722 Effect of Adiposity on Change in 25(OH) Vitamin D and Free Vitamin D Levels in the VITamin D and Omega-3 Fatty Acid Trial (VITAL)**
 *Sharon Chou¹, Elle Murata¹, Cindy Yu¹, Nancy Cook¹, Samia Mora¹, I-min Lee¹, Julie Buring¹, JoAnn Manson¹, Meryl LeBoff¹. ¹Brigham and Women's Hospital, United States
Disclosures: Sharon Chou, None
- MON-724 Evaluating the Changes and Side-to-Side Differences in Bone Index of Japanese Male Long-Distance Runners**
 *Nami Imai¹, Kazuhiro Uenishi¹. ¹Kagawa Nutrition University, Japan
Disclosures: Nami Imai, None
- MON-725 Effect of Maitake Mushroom Intake on Vitamin D Status During the Winter Season in Japanese Young Women**
 *Yukino Nakamura¹, Kazuhiro Uenishi¹. ¹Kagawa Nutrition University, Japan
Disclosures: Yukino Nakamura, None
- MON-726 The Dietary Approaches to Stop Hypertension (DASH) index is associated with a lower odds of osteoporosis in adults aged 50 y and older**
 *Sabrina Noel¹, Kelsey Mangano¹, Peter Bakun², John Griffith³, Katherine Tucker⁴. ¹University of Massachusetts Lowell, United States, ²Tufts University, United States, ³Northeastern University, United States, ⁴University of Massachusetts Lowell, United States
Disclosures: Sabrina Noel, None

- MON-727 Bone mass, free 25(OH) vitamin D, oxidized and non-oxidized PTH in young women 3 years after intensive nutrition therapy for severe anorexia nervosa**
 *Anna Svedlund¹, Bojan Tubic¹, Anders Elfvin¹, Diana Swolin-Eide¹, Cecilia Pettersson², Lars Ellegård², Per Magnusson³. ¹Department of Pediatrics, University of Gothenburg, Sweden, ²Department of Internal Medicine and Clinical Nutrition, University of Gothenburg, Sweden, ³Department of Clinical Chemistry, Linköping University, Sweden
Disclosures: Anna Svedlund, None

OSTEOPOROSIS - PATHOPHYSIOLOGY

- MON-734 Serum Bone-Derived Extracellular Vesicles are associated with Bone Loss with Antiretroviral Therapy in adults with HIV**
 *Erika Marques de Menezes¹, Michael Yin², Elizabeth Shane², Philip Norris³. ¹Vitalant Research Institute and Department of Laboratory Medicine, University of California, San Francisco, CA, United States, ²Department of Medicine, Columbia University Medical Center, New York, NY, United States, ³Vitalant Research Institute and Department of Laboratory Medicine, Department of Medicine, University of California, San Francisco, CA, United States
Disclosures: Erika Marques de Menezes, None
- MON-735 Mineral Maturity / Crystallinity at forming trabecular surfaces and its potential role in the bone mineral loss evident in postmenopausal osteoporosis**
 *Sonja Gamsjaeger¹, Erik Eriksen², Klaus Klaushofer³, Eleftherios Paschalis³. ¹Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUA Trauma Centre Meidling, 1st Medical Department, Hanusch Hospital, Vienna, Austria, Austria, ²Hormonlaboratoriet, AUS Aker Universitetssykehus, Norway, ³Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUA Trauma Centre Meidling, 1st Medical Department, Hanusch Hospital, Vienna, Austria, Austria
Disclosures: Sonja Gamsjaeger, None
- MON-736 Wnt Signaling and Bone Fragility in Elderly Postmenopausal Women with Type 2 Diabetes**
 *Alessandra Piccoli¹, Francesca Cannata¹, Fabrizio Russo¹, Valentina Greto¹, Camilla Isgrò¹, Rocky Strollo¹, Carlo Massaroni¹, Claudio Pedone¹, Gianluca Vadalà¹, Vincenzo Denaro¹, Rocco Papalia¹, Paolo Pozzilli¹, Mauro Maccarrone¹, Nicola Napoli¹, Tiziana Bisogno². ¹Campus Bio-Medico University of Rome, Italy, ²Endocannabinoid Research Group, Institute of Translational Pharmacology, CNR, Italy
Disclosures: Alessandra Piccoli, None

OSTEOPOROSIS - SECONDARY OSTEOPOROSIS

- MON-755 Association between plasma sodium and bone disease in patients with chronic heart failure: a prospective cohort study:**
 *Daniel Bencic¹, Johannes Schmid², Michael Fuchsjäger², Astrid Fahrleitner-Pammer³, Barbara Obermayer-Pietsch³, Thomas Pieber³, Ewald Kolesnik⁴, Andreas Zirklik⁴, Friedrich Fruhwald⁴, Dirk von Lewinski⁴, Klemens Ablasser⁴, Nicolas Verheyen⁴, Andreas Tomaschitz⁵, Daniel Scherr⁶. ¹Medical University of Graz, Austria, ²Department of Radiology, Medical University of Graz, Austria, ³Division of Endocrinology and Diabetology, Department of Internal Medicine, Medical University of Graz, Austria, ⁴Department of Cardiology, Medical University of Graz, Austria, ⁵Klinikum Bad Gleichenberg, Austria, ⁶Department of Cardiology, Medical University of Graz, Graz, Austria
Disclosures: Daniel Bencic, None

- MON-756 Biological and non-Biological Therapies and Lumbar Spine Bone Loss in Rheumatoid Arthritis**
 *María Lorena Brance¹, Lucas R Brun¹, Bernardo A Pons-Estel², Norberto J Quagliato³, Marisa Jorfen⁴, Guillermo Berbotto⁴, Juan C Raggio⁴, Ignacio Chavero⁴, Carolina Dieguez⁴, Rómulo Wong⁴, Noel Cortese⁵, Juan Soldano⁵, Mariano Palatnik⁶, Ariel Sánchez⁷, Luis Del Rio⁸, Silvana Di Gregorio⁸. ¹Bone Biology Laboratory. School of Medicine, Rosario National University, Argentina, ²Regional de Enfermedades Autoinmunes y Reumáticas (CREAR), Argentina, ³ Instituto CAICI, Argentina, ⁴Reumatología y Enfermedades Óseas, Argentina, ⁵School of Medicine, Rosario National University, Argentina, ⁶Centro de Reumatología, Argentina, ⁷Centro de Endocrinología, Argentina, ⁸Cetir/Ascires, Spain
Disclosures: María Lorena Brance, None
- MON-757 Comparison of Fracture Prediction Tools in Individuals without and with Chronic Kidney Disease: A Population-Based Analysis of CARTaGENE**
 *Louis-Charles Desbiens¹, Aboubacar Sidibe¹, Fabrice Mac-Way¹, Rémi Goupil². ¹CHU DE QUEBEC - UNIVERSITE LAVAL, Canada, ²Hopital du Sacré-Coeur de Montréal, Canada
Disclosures: Louis-Charles Desbiens, None
- MON-758 Obesity Protects Patients with Rheumatoid Arthritis from Systemic Bone Loss During Anti-TNF Treatment**
 *Mie Jin Lim¹, Won Park¹, Seong Ryul Kwon¹, Kyong-Hee Jung¹, Seung Yun Lee¹. ¹Inha University Hospital, Republic of Korea
Disclosures: Mie Jin Lim, None
- MON-759 Bone Turnover Markers Do Not Predict Fracture Risk in Type 2 Diabetes**
 *Nicola Napoli¹, Caterina Conte², Richard Eastell³, Richard Jacques⁴, Susan K. Ewing⁵, Eric Vittinghoff⁵, Ann V. Schwartz⁵, Douglas C. Bauer⁶, Dennis M. Black⁶, Elsa S. Strotmeyer⁷, Elizabeth J. Samelson⁸. ¹Unit of Endocrinology and Diabetes, University Campus Bio-Medico, Rome, Italy, ²Vita-Salute San Raffaele University, Milan, Italy, ³Academic Unit of Bone Metabolism, University of Sheffield, United Kingdom, ⁴School of Health and Related Research, University of Sheffield, United Kingdom, ⁵Department of Epidemiology and Biostatistics, University of California San Francisco, United States, ⁶Department of Medicine and Department of Epidemiology and Biostatistics, University of California San Francisco, United States, ⁷Center for Aging and Population Health Department of Epidemiology Graduate School of Public Health University of Pittsburgh, United States, ⁸Institute for Aging Research, Hebrew SeniorLife and Department of Medicine, Harvard Medical School and Division of Gerontology, Beth Israel Deaconess Medical Center, Boston, United States
Disclosures: Nicola Napoli, None
- MON-760 Association between renal function and bone turnover or bone microstructure: An HR-pQCT study in healthy Japanese women**
 *Narihiro Okazaki¹, Ko Chiba¹, Kazuaki Yokota¹, Choko Kondo¹, Mitsuru Doi¹, Shuta Yamada¹, Makoto Osaki¹. ¹Department of Orthopaedic Surgery, Nagasaki University Hospital, Japan
Disclosures: Narihiro Okazaki, None
- MON-761 Teriparatide Once Weekly Efficacy Research for Glucocorticoid-induced Osteoporosis: The TOWER-GO study**
 *Ikuko Tanaka¹, Yoshiya Tanaka², Satoshi Soen³, Hisaji Oshima⁴. ¹Nagoya Rheumatology Clinic, Japan, ²University of Occupational and Environmental Health, Japan, ³Kindai University Nara Hospital, Japan, ⁴Tokyo Medical Center, Japan
Disclosures: Ikuko Tanaka, None
- MON-762 Changes in femoral cortical and trabecular bone after bariatric surgery**
 *Renaud Winzenrieth¹, Ludovic Humbert¹, Carmen Gomez Vaquero², Carmen Xammar², Nuria Vilarrosa³, Fernando Guerrero³, Anna Casajoana⁴. ¹Galgo Medical, Spain, ²Rheumatology Department, Hospital Universitari de Bellvitge, Spain, ³Endocrinology and Nutrition Department, Hospital Universitari de Bellvitge, Spain, ⁴Bariatric Surgery Unit, Hospital Universitari de Bellvitge, Spain
Disclosures: Renaud Winzenrieth, None

OSTEOPOROSIS - TREATMENT

MON-802 **Prospective Observational Study to Describe Characteristics and Management of Postmenopausal Women with Osteoporosis Treated with Prolia® in France and its use in Routine Clinical Practice (The PILOTE Study)**

*Karine Briot¹, Anne Marie Schott², Jean Philippe Sanchez³, Sauveur Bendavid⁴, Lise Bosquet⁵, Stéphanie Perot⁵, Aurélie Etringer⁵, Jean Vannak Chauny⁶, Pascale Samama⁷, Gaelle Desameric⁷. ¹Département de Rhumatologie, Hôpital Cochin, Assistance Publique-Hôpitaux de Paris., France, ²Hospices Civils de Lyon, Pôle de Santé Publique, EA 7425 HeSPeR, France, ³Centre de Rhumatologie, France, ⁴Médecine Générale, France, ⁵ICTA PM, France, ⁶Amgen SAS, France, ⁷AMGEN SAS, France

Disclosures: Karine Briot, Amgen, Consultant

MON-803 **ARB may augment effects of anti-resorptive medications in osteoporotic bone of older women with hypertension: a preliminary study**

*Aysha Chaudhri¹, Nahid Rianon¹, Rafia Rasu², Brendan Lee³. ¹UTHealth McGovern Medical School, United States, ²University of North Texas Health Science Center, United States, ³Baylor College of Medicine, United States

Disclosures: Aysha Chaudhri, None

MON-804 **Prospective Observational Study in REal Life Treatment in LatinAmerican Patients with Denosumab Query Database (ROSELA DataBase): Preliminary Report**

*Francisco Fidencio Cons Molina¹, Jose Lucio Javier Balcazar Rodriguez², Edison Edgardo Romero Galvan³, Jose Fernando Molina⁴, Jesus Armando Montaño Uzcanga⁵, Luis Jaime Elizondo Alanis⁶, Fedra Irazoque Palazuelos⁷, Adolfo Jesus Zarain Garcia⁸, Amador Macias Osuna⁹, Jose Antonio Veloz Aranda¹⁰, Jorge Alberto Morales Torres¹¹, Francisco Olan¹², Carlos Ruben Salinas Dorantes¹³, Misael Alejandro Perez Romero¹⁴, Maria Silvia Larraoude¹⁵, Maria Belen Zancheta¹⁶, Vanina Soledad Farias¹⁷, Agustin Escobar Femat¹⁸, Carlos Ramon Rios Acosta¹⁹, Elena Calle Teixeira²⁰, Juan Jose Jaller Read²¹, Alejandro Roman Gonzalez²², Sergio Gutierrez Ureña²³, Jose de Jesus Guerra Jaime²⁴, Hilario Avila Armengol²⁵. ¹Centro Investigación Artritis y Osteoporosis, Mexico, ²Hospital Regional ISSSTE, Culiacán, México, Mexico, ³Consultorio de Osteología, Uruguay, ⁴Centro Reumalab, Colombia, ⁵Diagnóstico Integral Para la Mujer GineDX, Mexico, ⁶Centro de Investigación Clínica de Cd. Obregón, Mexico, ⁷CINTRE, Mexico, ⁸Centro de Climaterio Menopausia y Osteoporosis, Mexico, ⁹Centro Médico San Francisco, Mexico, ¹⁰Hospital Regional ISSSTE Leon Guanajuato, Mexico, ¹¹Hospital Aranda de la Parra, Mexico, ¹²Hospital Regional de Alta Especialidad, Mexico, ¹³Hospital Angeles Puebla, Mexico, ¹⁴Centro integral para la atención de la osteoporosis, Mexico, ¹⁵Consultorio Reumatología, Argentina, ¹⁶IDIM, Instituto de Diagnostico e investigaciones Metabólicas, Argentina, ¹⁷Consultorio Medico Osteología, Argentina, ¹⁸Consultorio Ginecología y Obstetricia, Mexico, ¹⁹Centro de Reumatología y Rehabilitación, Ecuador, ²⁰Complejo Hospitalario San Pablo, Peru, ²¹Centro de Reumatología y Ortopedia S.A.S, Colombia, ²²Hospital Universitario San Vicente Fundación, Colombia, ²³Centro Atención e Investigación Especializado en Enfermedades Reumáticas y Autoinmunes, SC, Mexico, ²⁴Clinica Bajío CLINBA, Mexico, ²⁵Centro Integral en Reumatología, S.A. de C.V., Mexico

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MON-805 **Factors associated with improved readiness for adopting osteoporosis treatment**

*Giovanni Adami¹, Elizabeth Rahn¹, Amy Mudano¹, Kenneth G Saag¹, Maria I Danila¹.

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MON-806 **Novel VEGF loaded Fibrinogen-Aptamer functionalized hydrogel improves osteogenesis and angiogenesis**

*Henry Donahue¹, Otto Juhl², David Cohen², Michael Friedman², Yue Zhang², Zvika Schwartz², Anna-Blessing Merife², Yong Wang³, Nan Zhao³. ¹Virginia Commonwealth University, United States, ²Virginia Commonwealth University, United States, ³Pennsylvania State University, United States

Disclosures: Henry Donahue, None

- MON-807 Whole Body Vibration moderates MGUS-associated Bone Disease in Humans**
 *Franca Genest¹, Lothar Seefried¹, Johanna Strömsdörfer², Bernhard Egelmann², Constantin Lapa², Billy Sperlich², Franziska Jundt². ¹Klinische Studieneinheit, University of Würzburg, Germany, ²University of Würzburg, Germany
Disclosures: Franca Genest, None
- MON-808 Goal-Directed Treatment of Osteoporosis in Patients with Rheumatoid Arthritis Using Denosumab for Three Years from Japanese Multicenter Study**
 *Yuji Hirano¹, Daisuke Kihira¹, Yasuhide Kanayama², Kyosuke Hattori³, Nobunori Takahashi³, Toshihisa Kojima³, Naoki Ishiguro⁴. ¹Rheumatology, Toyohashi Municipal Hospital, Japan, ²Orthopaedic Surgery and Rheumatology, Toyota Kosei Hospital, Japan, ³Orthopaedic Surgery and Rheumatology, Nagoya University Graduate School of Medicine, Japan, ⁴Orthopaedic Surgery and Rheumatology, Nagoya University School of Medicine, Japan
Disclosures: Yuji Hirano, None
- MON-809 Once-weekly teriparatide reduces serum sclerostin levels in osteoporosis patients.**
 *Terumasa Ikeda¹, Masao Akagi², Hiroshi Kaji³. ¹Kindai University Hospital, Orthopaedics surgery, Japan, ²Kindai University Orthopaedic surgery, Japan, ³Department of Physiology and Regenerative Medicine, Japan
Disclosures: Terumasa Ikeda, None
- MON-810 Comparison of the Efficacy of Denosumab and Zoledronic Acid in Postmenopausal Women**
 *Taewook Kang¹, Seung Woo Suh¹, Soon Hyuck Lee¹, Si Young Park², Jae Young Hong². ¹Korea University College of Medicine, Republic of Korea, ²Korea University College of Medicine, Republic of Korea
Disclosures: Taewook Kang, None
- MON-811 Surgical results of osteoporotic vertebral fracture causing thoracic myelopathy combined with ossification of the ligamentum flavum at the same level**
 *Yuji Kasukawa¹, Naohisa Miyakoshi¹, Michio Hongo¹, Yoshinori Ishikawa¹, Daisuke Kudo¹, Chiaki Sato¹, Yoichi Shimada¹. ¹Department of Orthopedic Surgery, Akita University Graduate School of Medicine, Japan
Disclosures: Yuji Kasukawa, None
- MON-812 Modelling Site-specific Time Trends of Bone Density during Teriparatide Therapy – Can they Define a Shorter Effective Duration of Treatment?**
 *Clay Larkin¹, Madhumathi Rao¹, Florence Lima¹, Marie Claude Moniere Faugere¹, Hartmut Malluche¹. ¹University of Kentucky, United States
Disclosures: Clay Larkin, None
- MON-813 Study of the effect of educational intervention on compliance and fracture rates in elder female patients with osteoporosis**
 *Zhang Lei¹. ¹Sichuan Academy of Medical Sciences & Sichuan Provincial People's Hospital, China
Disclosures: Zhang Lei, None

- MON-814** **Hormone therapy decreases the risk of fracture both in fallers and non-fallers – data from the combined Women’s Health Initiative Hormone Therapy Trials**
 *Mattias Lorentzon¹, Helena Johansson², Nicholas C Harvey³, Enwu Liu⁴, Carolyn J Crandall⁵, Eugene V McCloskey⁶, John Kanis⁷. ¹Geriatric Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg and Geriatric Medicine Clinic, Sahlgrenska University Hospital, Mölndal, Sweden, Sweden, ²Geriatric Medicine, Institute of Medicine, University of Gothenburg, Sweden and Centre for Metabolic Bone Diseases, University of Sheffield, Sheffield, UK and Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, Australia, ³MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton and NIHR Southampton Biomedical Research Centre, University of Southampton and University Hospital Southampton NHS Foundation Trust, Southampton, UK, United Kingdom, ⁴Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, Australia, ⁵David Geffen School of Medicine at the University of California, Los Angeles, US, United States, ⁶Mellanby Centre for bone research, Department of Oncology and Metabolism, University of Sheffield and Centre for Integrated research in Musculoskeletal Ageing (CIMA), Mellanby Centre for Bone Research, University of Sheffield, Sheffield, UK, United Kingdom, ⁷Centre for Metabolic Bone Diseases, University of Sheffield, Sheffield, UK and Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, Australia
Disclosures: Mattias Lorentzon, None
- MON-815** **Reversal of serum cystatin C-based eGFR decline by decreased phosphate release from bone by denosumab in osteoporotic patients even at non-CKD stage**
 *Daichi Miyaoka¹, Masaaki Inaba¹, Yasuo Imanishi¹, Noriyuki Hayashi¹, Masaya Ohara¹, Yuki Nagata¹, Shinsuke Yamada¹, Katsuhito Mori¹, Masanori Emoto¹. ¹Department of Metabolism, Endocrinology and Molecular Medicine, Osaka City University Graduate School of Medicine, Japan
Disclosures: Daichi Miyaoka, None
- MON-816** **Anti-myostatin and anti-activin A antibody treatment improves bone strength and microarchitecture in C57BL6J mice.**
 *Catherine Omosule¹, Ferris Pfeiffer¹, Charlotte Phillips¹, Youngjae Joeng², Sandra Kleiner³. ¹University of Missouri, United States, ²Baylor College of Medicine, United States, ³Regeneron Pharmaceuticals, United States
Disclosures: Catherine Omosule, None
- MON-817** **An osteoporosis course for patients presented by students at health-related study programmes.**
 *Helena Salminen¹, Eva Toth-Pal¹, Hans Ranch Lundin¹, Kajsa Kronlund². ¹Karolinska Institutet, Sweden, ²Stockholm County Council, Sweden
Disclosures: Helena Salminen, None
- MON-818** **Development of a bone-targeted orally bioavailable osteogenic oxysterol for the treatment of osteoporosis**
 *Frank Stappenbeck¹, Feng Wang¹, Farhad Parhami¹. ¹MAX BioPharma, Inc., United States
Disclosures: Frank Stappenbeck, MAX BioPharma, Other Financial or Material Support
- MON-819** **The Optimal Loading and Maintenance Dose of Vitamin D2 for Treatment of Hypovitaminosis D in Adults: A Randomized, Double-Blinded, Dose-Comparison Study**
 *Lalita Lohawijarn¹, Natnicha Hounngam¹, Parichat Yimnoi¹, Direk Limmathurotsakul², Sompongse Suwanwalaikorn³, Lalita Wattanachanya³. ¹King Chulalongkorn Memorial Hospital, Thailand, ²Mahidol-Oxford Research Unit and Faculty of Tropical Medicine, Mahidol University, Thailand, ³Chulalongkorn University, Thailand
Disclosures: Lalita Lohawijarn, None

- MON-820** **The role of exosomal miR-214-3p in mechanical load-induced improvement of angiogenesis in a mouse model of postmenopausal osteoporosis**
 *Xinle Li¹, Xuetong Wang¹, Daquan Liu¹, Hiroki Yokota², Ping Zhang³. ¹Department of Anatomy and Histology, School of Basic Medical Sciences, Tianjin Medical University, Tianjin 300070, China, China, ²Department of Biomedical Engineering, Indiana University-Purdue University Indianapolis, IN 46202, USA, United States, ³Department of Anatomy and Histology, School of Basic Medical Sciences, Tianjin Medical University, Tianjin 300070, China; Department of Biomedical Engineering, Indiana University-Purdue University Indianapolis, IN 46202, USA, China
Disclosures: Xinle Li, None

PARACRINE REGULATORS

- MON-829** **Extracellular vesicles (EVs) derived from osteotropic tumors inhibit osteoblast differentiation and increase osteoclastogenesis and angiogenesis.**
 *Alfredo Cappariello¹, Alice Green², Christopher George², Kirsty Shefferd², Argia Ucci², Alexander Loftus², Simona Delle Monache², Marco Ponzetti², Anna Teti², Nadia Rucci², Maurizio Muraca³. ¹Children Hospital Bambino Gesù, Italy, ²University of L'Aquila, Italy, ³University of Padova, Italy
Disclosures: Alfredo Cappariello, None
- MON-830** **Functional Role of Nuclear PTHrP in Breast and Breast Cancer Cells In Vitro and In Vivo**
 *Julie Hens¹, William Philbrick², John Wysolmerski². ¹yale university, United States, ²Yale University, United States
Disclosures: Julie Hens, None
- MON-831** **Primary Cilia Mediates PTHrP-dependent Prosurvival Actions on Bone cells via Hedgehog Signaling Pathway**
 *Eduardo Martin-Guerrero¹, Irene Tirado-Cabrera¹, Irene Buendia¹, Sara Heredero Jiménez¹, Arancha R Gortázar¹, Juan A Ardura¹. ¹Bone Physiopathology laboratory, Applied Molecular Medicine Institute (IMMA), Universidad San Pablo-CEU, CEU Universities, Campus Montepíncipe, 28925 Alcorcón, Madrid, Spain., Spain
Disclosures: Eduardo Martin-Guerrero, None
- MON-832** **BMP9 Regulates Bone Metabolism By Promoting Bone Formation And Inhibiting Bone Resorption**
 *Yanman Zhou¹, Hongyan Zhao¹, Jianmin Liu¹. ¹Department of Endocrine and Metabolic Diseases, Rui-jin Hospital, Shanghai Jiao-tong University School of Medicine, China
Disclosures: Yanman Zhou, None

PRECLINICAL MODELS OF MUSCULOSKELETAL DISORDERS

- MON-857** **Elevating Circulating 25-Hydroxyvitamin D Levels Through Dietary Supplementation Improves Bone Volume and Mineral Density in HYP Mice**
 *Kate Barratt¹, Rebecca Sawyer¹, Paul Anderson¹. ¹University of South Australia, Australia
Disclosures: Kate Barratt, None
- MON-858** **Genetic Inactivation of Sclerostin in a Mouse Model of Osteogenesis Imperfecta**
 *Iris Boraschi-Diaz¹, Josephine T. Tauer¹, Frank Rauch¹. ¹Shriners Hospital for Children Canada, Canada
Disclosures: Iris Boraschi-Diaz, None
- MON-860** **Collagen XII as a maintenance factor for anterior cruciate ligament**
 *Shin Fukusato¹, Yayoi Izu², Masashi Nagao³. ¹Department of Orthopedics, University of Juntendo, Japan, ²Department of Veterinary Okayama science University, Japan, ³Department of Orthopedics, Juntendo University Hospital, Japan
Disclosures: Shin Fukusato, None

- MON-861 Indoleamine 2,3-dioxygenase Knockout Mice are Only Partially Protected Against Orchiectomy Related Bone Loss**
 *Kehong Ding¹, Jianrui Xu¹, Qing Zhong¹, Wendy Bollag¹, Meghan McGee-Lawrence¹, Xingming Shi¹, Sadanand Fulzele¹, Baolin Kang¹, Anuj Sharma¹, Mark Hamrick¹, Carlos Isaacs¹, William Hill². ¹Augusta University, United States, ²Medical University of South Carolina, United States
Disclosures: Kehong Ding, None
- MON-862 Montmorency Tart Cherry Supplementation and Exercise Differentially Affect Bone Microarchitecture and Metabolism with Age**
 *Bryant Keirns¹, Kendall Anderson¹, James Bothwell¹, Colin Robertson¹, Bethany Hatter¹, Ojo Babajide¹, Daniel Lin¹, Edralin Lucas¹, Brenda Smith¹, Kara Robinson². ¹Oklahoma State University, United States, ²Oklahoma State University, United States
Disclosures: Bryant Keirns, None
- MON-864 Systemic alterations due to estrogen deficiency in a senile osteoporotic rat model**
 *Deeksha Malhan¹, Fathi Hassan¹, Sabine Stoetzel¹, Christian Heiss¹, Thaqif El Khassawna¹, Felix Schulze², Angela Rösen-Wolff². ¹Experimental Trauma Surgery, Germany, ²Department of Pediatrics, University Hospital Carl Gustav Carus, Germany
Disclosures: Deeksha Malhan, None
- MON-865 Design and in vivo testing of novel bisphosphonate-fluoroquinolone conjugates chemisorbed to bone graft material**
 *Parish Sedghizadeh¹, Esmat Sodagar¹, Raffie Garabedian¹, Jasveen Wadia¹, Frank Ebetino², Philip Cherian², Shuting Sun², Neema Bakhshalian³, Jeffrey Neighbors⁴, R. Graham Russell⁵, Charles McKenna⁶. ¹University of Southern California, Ostrow School of Dentistry, United States, ²BioVinc, United States, ³University of Southern California; Ostrow School of Dentistry, United States, ⁴BioVinc; Pennsylvania State University, United States, ⁵University of Sheffield, United Kingdom, ⁶University of Southern California, Department of Chemistry, United States
Disclosures: Parish Sedghizadeh, BioVinc, Consultant
- MON-866 Characterization of Changes in Bone Microarchitecture and Bone Turnover after Splenectomy in a Thalassemia Mouse Model**
 *Hui Sun¹, Ling Wang¹, Hongshuai Li¹, Baoli Qian¹, Wei Feng¹, Mark Gladwin¹. ¹University of Pittsburgh, United States
Disclosures: Hui Sun, None
- MON-867 Female mice exhibit a reduced diabetic response to streptozotocin compared to male mice and do not lose bone.**
 *Serra Ucer Ozgurel¹, Kevin McAndrews¹, Meloney Gregor¹, David Halladay¹, Teresita Bellido². ¹Department of Anatomy & Cell Biology, Indiana University School of Medicine; Roudebush Veterans Administration Medical Center, United States, ²Department of Anatomy and Cell Biology; Department of Medicine, Division of Endocrinology, Indiana University School of Medicine; Roudebush Veterans Administration Medical Center, United States
Disclosures: Serra Ucer Ozgurel, None
- MON-868 Bodyweight-Supported Treadmill Training and Passive Cycle Training Produce Differential Effects on Cancellous Bone Loss in Spinal Cord Injured Rats**
 *Joshua Yarrow¹, Christine Conover², Russell Wnek², Michael Reynolds², Kinley Buckley², Jessica Jiron³, Gabriella Gonzalez-Perez³, J. Ignacio Aguirre³. ¹Malcom Randall VA Medical Center / University of Florida College of Medicine, Division of Endocrinology, Diabetes, and Metabolism, United States, ²Malcom Randall VA Medical Center, United States, ³University of Florida, Department of Physiological Sciences, United States
Disclosures: Joshua Yarrow, None

PRECLINICAL MODELS: NUTRITION AND PHARMACOLOGY

- MON-883** **Inhibition of Sclerostin by Sclerostin Antibody Does Not Affect Morphological or Transcriptional Endpoints Related to Atheroprogession, Plaque Calcification, or Inflammation in 2 Murine Models of Atherosclerosis**
 *Rogely Boyce¹, Aimee Deaton¹, Jun Yin¹, Marina Stolina¹, Denise Dwyer¹, Sheetal Kumar¹, Emily de Koning¹, Kathrin Locher¹, Luke Ward¹, Charles Glaus¹, Yudong He¹, James Turk¹, Melanie Felx², Gabrielle Boyd², Jean-Guy Bienvenu², Aurore Varela², Martin Guillot², Gill Holdsworth³, Alison Wolfreys³. ¹Amgen Inc., United States, ²Charles River Laboratories Montreal ULC, Canada, ³UCB Pharma, United Kingdom
Disclosures: Rogely Boyce, Amgen (employee and stocks), Other Financial or Material Support
- MON-884** **Long-term Suppression of Trabecular Bone Resorption with a Low HA-Binding Affinity Bisphosphonate Reverses Rapidly when Treatment Ceases**
 *Abigail A Coffman¹, Rosa Guerra¹, Jelena Basta-Pljakic¹, Robert J Majeska¹, Mitchell B Schaffler¹, Frank H Ebetino², Mark W Lundy³. ¹City College of New York, United States, ²University of Rochester, United States, ³Indiana University School of Medicine, United States
Disclosures: Abigail A Coffman, None
- MON-885** **Abaloparatide: Infusion Causes the Same Catabolic Bone Loss in Mice as PTH (1-34)**
 *Carole Le Henaff¹, Brandon Finnie¹, Zhiming He¹, Joshua Johnson¹, Nicola C Partridge¹. ¹New York University, United States
Disclosures: Carole LE HENAFF, None
- MON-886** **Morphine Treatment Reduces Trabecular Bone Volume Fraction and Impairs Cortical Bone Expansion in Male Mice**
 *Adriana Lelis Carvalho¹, Breanna Morrill¹, Katherine Motyl¹, Deborah Barlow², Karen Houseknecht², Tamara King². ¹Maine Medical Center Research Institute (MMCRI), United States, ²University of New England (UNE), United States
Disclosures: Adriana Lelis Carvalho, None
- MON-887** **Royal Jelly Does Not Prevent Bone Loss But Improves Bone Strength in Ovariectomized Rats**
 *Hiroshi Matsushita¹, Saki Shimizu¹, Akihiko Wakatsuki¹, Akira Minami², Hiroaki Kanazawa², Takashi Suzuki². ¹Aichi Medical University, Japan, ²University of Shizuoka, Japan
Disclosures: Hiroshi Matsushita, None
- MON-888** **Effects of Graded Increases in Ethanol Consumption on Biochemical Markers of Bone Turnover in Young Adult Male and Female Cynomolgus Macaques**
 *Lara Sattgast¹, Nikki Walter², Natali Newman², Kathleen Grant², Adam Branscum³, Russell Turner⁴, Urszula Iwaniec⁴. ¹Oregon State University, United States, ²Division of Neuroscience, Oregon National Primate Research Center, Oregon Health and Science University, United States, ³Biostatistics Program, School of Biological and Population Health Sciences, Oregon State University, United States, ⁴Skeletal Biology Laboratory, School of Biological and Population Health Sciences, Oregon State University, United States
Disclosures: Lara Sattgast, None
- MON-889** **Long-term osteoblast-specific Plekho1 silencing by RNA interference prevents bone formation reduction during aging in safety in both genders**
 *Zong-Kang Zhang¹, Zhenjian Zhuo¹, Bao-Ting Zhang¹, Jin Liu², Chao Liang², Aiping Lu², Ge Zhang³. ¹School of Chinese Medicine, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong, ²Institute for Advancing Translational Medicine in Bone & Joint Diseases, School of Chinese Medicine, Hong Kong Baptist University, Hong Kong, ³Institute for Advancing Translational Medicine in Bone & Joint Diseases, School of Chinese Medicine, Hong Kong Baptist University, Hong Kong
Disclosures: Zong-Kang Zhang, None

- MON-908** **Impaired Cognitive Function in Normocalcemic Primary Hyperparathyroidism**
 *Lara Voss¹, Maira Nóbrega¹, Leonardo Bandeira¹, Francisco Bandeira¹, Pedro Rocha-Filho². ¹Division of Endocrinology & Diabetes, Agamenon Magalhaes Hospital, University of Pernambuco Medical School, Brazil, ²Federal University of Pernambuco Medical School, Brazil
Disclosures: Lara Voss, None
- MON-909** **Clinical Burden in Adults with Pediatric-Onset Hypophosphatasia: a Retrospective Chart Review**
 *Kathryn Dahir¹, Margo Black¹, Lauren Flueckinger², Seung-Hye Jung², Priya Kishnani², Anna Petryk³, Megan Teynor³, Qunming Dong³. ¹Vanderbilt University Medical Center, United States, ²Duke University Medical Center, United States, ³Alexion Pharmaceuticals, Inc., United States
Disclosures: Kathryn Dahir, Alexion Pharmaceuticals, Inc, Consultant, Alexion Pharmaceuticals, Inc, Grant/Research Support
- MON-910** **The Burden of Chronic Hypoparathyroidism in Canada: A Retrospective Study Using the ICES Database**
 *Aliya Khan¹, Kristina Chen², G. Sarah Power³, Lidia Demchyshyn⁴. ¹Department of Medicine, Divisions of Endocrinology and Metabolism and Geriatric Medicine, McMaster University, Canada, ²Shire Human Genetic Therapies, Inc., a member of the Takeda group of companies, United States, ³QVIA, Canada, ⁴Shire Pharma Canada ULC, Toronto, ON, Canada, a member of the Takeda group of companies, Canada
Disclosures: Aliya Khan, Shire, a member of the Takeda group of companies, Grant/Research Support
- MON-911** **Biomarker Profiles in PLS3 and WNT1 Osteoporosis – Elevated Serum DKK1 in Abnormal PLS3 Function**
 *Riikka Mäkitie¹, Outi Mäkitie¹, Anders Kämpe², Alice Costantini², Jessica Alm², Per Magnusson³. ¹Folkhälsan Institute of Genetics and Research Program for Clinical and Molecular Metabolism, Faculty of Medicine, University of Helsinki, Helsinki, Finland, Finland, ²Department of Molecular Medicine and Surgery and Center for Molecular Medicine, Karolinska Institutet, Stockholm, Sweden, Sweden, ³Department of Clinical Chemistry, and Department of Clinical and Experimental Medicine, Linköping University, Linköping, Sweden, Sweden
Disclosures: Riikka Mäkitie, None
- MON-912** **A COL10A1 Frameshift Mutation in a Patient with Features of Cleidocranial Dysplasia**
 *Mari Muurinen¹, Minna Pekkinen¹, Outi Mäkitie¹. ¹Folkhälsan Institute of Genetics, Helsinki, Finland, Children's Hospital, University of Helsinki and Helsinki University Hospital, Helsinki, Finland, Finland
Disclosures: Mari Muurinen, None
- MON-913** **Open-label, Multicenter, Pilot Study of Interferon Gamma – 1b in Patients with Autosomal Dominant Osteopetrosis type 2 (ADO2)**
 *Lynda E. Polgreen¹, Ashish Gupta², Troy C. Lund², Paul J. Orchard², Weston P. Miller³. ¹Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center, United States, ²University of Minnesota, United States, ³Sangamo Therapeutics (previously University of Minnesota), United States
Disclosures: Lynda E. Polgreen, Horizon Pharma, Grant/Research Support
- MON-914** **BONE MINERAL DENSITY AND 3D-DXA ASSESSMENT IN ADULT PATIENTS WITH A POSITIVE AND NEGATIVE GENETICAL TESTING FOR HYPOPHOSPHATASIA COMPARED WITH A HEALTHY CONTROL GROUP.**
 *Carolina Tornero¹, Sara García¹, Alejandro Balsa¹, Pilar Aguado¹, Mónica Coronado², Carmen Lancha², Domenico Monachello², Luis Dominguez², Ludovic Humbert³, Carmen Mateo⁴, Alejandra Montero⁴. ¹Rheumatology Department, La Paz Hospital, Spain, ²Nuclear Medicine Department, La Paz Hospital, Spain, ³Galgo Medical, Spain, ⁴Primary Health Care Center Fuencarral, Spain
Disclosures: Carolina Tornero, SEIOMM, Grant/Research Support

RARE BONE DISEASES: TRANSLATIONAL

- MON-939** **Inhibition of Activin A does not ameliorate the formation of trauma-induced Heterotopic Ossification.**
 *Nanditha Das¹, Liqin Xie², Lily Huang², Lili Wang², Sarah Hatsell², Xialing Wen³, Andrew Murphy³, Aris Economides³, Kalyan Nannuru⁴. ¹Regeneron Pharmaceuticals Inc., United States, ²Regeneron Pharmaceuticals, United States, ³Regeneron Pharmaceuticals, United States, ⁴Regeneron Pharmaceuticals Inc., United States
Disclosures: Nanditha Das, Regeneron Pharmaceuticals Inc., Other Financial or Material Support
- MON-940** **Induction of Cherubism-like Jawbone Expansion in Mice Reveals Unrecognized Contributions of Neutrophils to Cherubism Pathogenesis**
 *Yasuyuki Fujii¹, Nelson Monteiro¹, Ernst Reichenberger¹, I-Ping Chen¹, Yasuyoshi Ueki². ¹University of Connecticut Health, United States, ²Indiana University, United States
Disclosures: Yasuyuki Fujii, None
- MON-941** **X-linked Hypophosphataemia: Prevalence and Mortality Within the United Kingdom**
 *Samuel Hawley¹, Antonella Delmestri¹, Daniel Prieto-Alhambra¹, Rafael Pinedo-Villanueva¹, M. Kassim Javaid¹, Nick Shaw², Cyrus Cooper³. ¹University of Oxford, United Kingdom, ²Birmingham Women's and Children's NHS Foundation Trust, United Kingdom, ³University of Southampton, United Kingdom
Disclosures: Samuel Hawley, None
- MON-942** **Identification of FGFR3 Inhibitors from Plant Extracts with Therapeutic Potential for FGFR3-Activated Diseases**
 *Yi-Ching Lee¹, Yun-Wen Lin², Hsiao-Jung Kao³, Yuan-Tsong Chen³. ¹Institute of Cellular and Organismic Biology, Academia Sinica, Taiwan, Province of China, ²Institute of Cellular and Organismic Biology, Academia Sinica, Taiwan, Province of China, ³Institute of Biomedical Sciences, Academia Sinica, Taiwan, Province of China
Disclosures: Yi-Ching Lee, None
- MON-943** **IFT80 deficiency in type II collagen positive progenitors causes JATD via impaired hedgehog signaling**
 *Xinhua Li¹, Vishawa Deepk¹, Shuting Yang², Shuying Yang², Eiki Koyam³, Ling Qin⁴. ¹Dental medicine school of university of Pennsylvania, United States, ²Dental medicine school of university of Pennsylvania, United States, ³Department of orthopedic surgery, The Children's Hospital of Philadelphia, United States, ⁴Department of orthopaedic surgery, Perelman School of Medicine, University of Pennsylvania, United States
Disclosures: Xinhua Li, None
- MON-944** **In Vitro Signaling Characteristics and Dosing Evaluation of Vosoritide, a CNP-Variant for the Treatment of Achondroplasia**
 *Donald Mackenzie¹, Sean Bell¹, Brian Heglar¹, Hoonsan Ong¹, Daniel Wendt¹. ¹BioMarin Pharmaceutical Inc., United States
Disclosures: Donald Mackenzie, BioMarin Pharmaceutical Inc., Other Financial or Material Support
- MON-945** **Young Adult Male and Female +/G610C Mice as an Animal Model of Osteogenesis Imperfecta**
 *Jukka Morko¹, Jukka Vääräniemi¹, Jussi M Halleen¹. ¹Pharmatest Services, Finland
Disclosures: Jukka Morko, None
- MON-946** **NFAM1 Stimulation of Osteoclast Differentiation in Paget's Disease of Bone**
 *Purushoth Ethiraj¹, Yuvaraj Sambandam¹, Sakamuri Reddy¹, Jessica Hathaway-Schrader². ¹Darby Children's Research Institute/Pediatrics, Medical University of South Carolina, United States, ²Dept. of Oral Health Sciences, College of Dental Medicine, Medical University of South Carolina, United States
Disclosures: Purushoth Ethiraj, None

- MON-947** **Activin-A induces fewer, but larger, osteoclasts from CD14⁺ monocytes in both healthy controls and fibrodysplasia ossificans progressiva patients**
 *Ton Schoenmaker¹, Merve Sariyildiz¹, Teun Vries de¹, Esmee Botman², Coen Netelenbos², Marelise Eekhoff², Dimitra Michal³, Nathalie Bravenboer⁴. ¹Department of Periodontology, Academic Centre for Dentistry Amsterdam (ACTA), University of Amsterdam and Vrije Universiteit, the Netherlands, Netherlands, ²Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Internal Medicine section Endocrinology, Amsterdam Movement Sciences, the Netherlands, Netherlands, ³Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Clinical Genetics, Amsterdam Movement Sciences, the Netherlands, Netherlands, ⁴Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Clinical Chemistry, the Netherlands, Netherlands
Disclosures: Ton Schoenmaker, None

- MON-948** **Sphingomyelin Synthase 2 Mutation Arg50* Causes Autosomal Dominant Osteoporosis With “Doughnut” Lesions Of The Skull (OMIM %126550) In A Multigenerational American Kindred**
 *Michael P. Whyte¹, Angela Nenninger¹, E. Michael Lewiecki², William H McAlister³, Gary S. Gottesman⁴, Deborah Wenkert⁴, John W. Hellstein⁵, Shengui Duan⁶, Steven Mumm⁶. ¹Center for Metabolic Bone Disease and Molecular Research, Shriners Hospital for Children, St. Louis, MO, USA, United States, ²University of New Mexico School of Medicine, Albuquerque, NM, USA, United States, ³Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, MO, USA, United States, ⁴Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children-St. Louis, United States, ⁵University of Iowa, Oral Pathology, United States, ⁶Division of Bone and Mineral Diseases, Department of Internal Medicine, Washington University School of Medicine, St. Louis, MO, USA, United States
Disclosures: Michael P. Whyte, None

- MON-949** **Genotype-Phenotype Correlation In McCune-Albright Syndrome**
 *Maria Zhadina¹, Natasha Cherman¹, Lori Guthrie¹, Beth Brillante¹, Pamela Robey¹, Michael Collins¹, Alison Boyce¹. ¹National Institutes of Health, United States
Disclosures: Maria Zhadina, None

SARCOPENIA, MUSCLE AND FALLS

- MON-964** **Muscle health, postural stability and quality of life in vitamin D insufficient healthy women: a cross-sectional comparison of the effects of elevated parathyroid levels**
 *Lise Sofie Bislev¹, Lene Langgærd Rødbro¹, Tanja Sikjær¹, Lars Rejnmark¹. ¹Department of Endocrinology and Internal Medicine, Aarhus University Hospital, Denmark
Disclosures: Lise Sofie Bislev, None
- MON-965** **Sarcopenia Is Widespread In Females With Anorexia Nervosa But Exercise Is Not Protective**
 *Anne Drabkin¹, Brianne Sutton¹, Philip Mehler¹, Micol Rothman², Christine Swanson². ¹Denver Health Medical Center, United States, ²University of Colorado School of Medicine, United States
Disclosures: Anne Drabkin, None
- MON-966** **Vitamin D Supplementation is Detrimental to Muscle Strength Recovery in Graves' Disease Hyperthyroidism. A Randomized Clinical Trial**
 *Diana Grove-Laugesen¹, Sofie Malmstroem¹, Eva Ebbeløj¹, Lars Rejnmark¹, Per Cramon², Torquill Watt², Klavs Würzler Hansen³. ¹Aarhus University Hospital, Denmark, ²Rigshospitalet, Denmark, ³Regional Hospital Silkeborg, Denmark
Disclosures: Diana Grove-Laugesen, None

- MON-967** **Establishing Potential Jump Power Cut-Off Values for Sarcopenia**
 *Namki Hong¹, Yumie Rhee¹, Diane Krueger², Neil Binkley², Bjoern Buehring³.
¹Department of Internal Medicine, Severance Hospital, Endocrine Research Institute, Yonsei University College of Medicine, Republic of Korea, ²UW Osteoporosis Clinical Research Program, University of Wisconsin-Madison, United States, ³Rheumazentrum Ruhrgebiet, Ruhr-University-Bochum, Germany
Disclosures: Namki Hong, None
- MON-968** **Higher pulsatility index is associated with loss of grip strength and gait speed over time: the Framingham Heart Study**
 *Shivani Sahni¹, Alyssa B. Dufour¹, Douglas P. Kiel¹, Marian T. Hannan¹, Paul F. Jacques², Roger A. Fielding², Emelia J. Benjamin³, Ramachandran S. Vasan³, Joanne M. Murabito³, Gary F. Mitchell⁴, Naomi M. Hamburg⁵. ¹Marcus Institute, Hebrew SeniorLife and Harvard Medical School, United States, ²Jean Mayer USDA HNRCA, Tufts University School of Nutrition, United States, ³BU School of Medicine and Framingham Heart Study, United States, ⁴Cardiovascular Engineering, Inc., United States, ⁵BU School of Medicine, United States
Disclosures: Shivani Sahni, None
- MON-969** **Markers of Sarcopenia and Incident Mobility Limitation: The Tobago Longitudinal Study of Aging**
 *Adam Santanasto¹, Iva Miljkovic¹, Ryan Cvejkus¹, Joseph Zmuda¹, Victor Wheeler².
¹University of Pittsburgh, United States, ²Tobago Health Studies Office, Trinidad and Tobago
Disclosures: Adam Santanasto, None
- MON-970** **Low Agreement Between DXA-Based Low Skeletal Muscle Mass Indicators**
 *Francisco Torres-Naranjo¹, Alejandro Gaytán-González², Roberto Gabriel González-Mendoza², Noé González-Gallegos³, Claudia Martínez-Cordero⁴, Juan Ricardo López-Taylor⁵. ¹Center of Body Composition and Bone Research, Mexico, ²Institute of Applied Sciences for Physical Activity and Sport, Department of Human Movement Sciences, Education, Sport, Recreation and Dance, University Health Sciences Center, University of Guadalajara, Mexico, ³Department of Welfare and Sustainable Development, University Center of the North, University of Guadalajara, Mexico, ⁴HRAEB, Mexico, ⁵Institute of Applied Sciences for Physical Activity and Sport, Department of Human Movement Sciences, Education, Sport, Recreation and Dance, University Health Sciences Center, University of Guadalajara, Mexico
Disclosures: Francisco Torres-Naranjo, None

LATE-BREAKING POSTERS III

12:00 pm - 2:00 pm

**Orange County Convention Center
West Hall C**

All posters will be displayed in the ASBMR Discovery Hall from Saturday, September 21 through Monday, September 23.

ADULT METABOLIC BONE DISORDERS

- LB MON-973** **Free but not total 25hydroxyvitamin D is correlated with calcium absorption**
 *Vinod Yalamanchili¹, John C Gallagher², Lynette Smith³. ¹Cheyenne Regional Medical Center, United States, ²Creighton University School of Medicine, United States, ³University of Nebraska Medical Center, United States
Disclosures: Vinod Yalamanchili, None

BIOMECHANICS AND BONE QUALITY

- LB MON-979 Impact Microindentation Assesses Periosteal Bone Matrix Quality in Humans**
*Stamatia Rokidi¹, Stéphane Blouin¹, Barbara Misof¹, Nathalie Bravenboer², Pascale Chavassieux³, Klaus Klaushofer⁴, Eleftherios P. Paschalis⁴, Socrates E. Papapoulos⁵, Natasha M. Appelman-Dijkstra⁵. ¹Ludwig Boltzmann Institute of Osteology, Austria, ²Leiden University Medical Center, Netherlands, ³INSERM UMR 1033, Université de Lyon, France, ⁴Ludwig Boltzmann Institute of Osteology, Austria, ⁵Leiden University Medical Center, Netherlands
Disclosures: Stamatia Rokidi, None

- LB MON-980 A Local Microstructure and Mechanical Properties Assessment By Volume Reduction of Human Vertebral Trabecular Bone Using HR-pQCT and FEA**
*Alessandro Silva¹, Jonas de Carvalho¹, Marise Lazaretti-Castro², Rosa M.R. Pereira³. ¹University of Sao Paulo, Brazil, ²Federal University of Sao Paulo, Brazil, ³Rheumatology Division, Hospital das Clínicas HCFMUSP, Faculdade de Medicina da Universidade de Sao Paulo, SP, Brazil, Brazil
Disclosures: Alessandro Silva, None

BONE ACQUISITION AND PEDIATRIC BONE DISORDERS

- LB MON-983 Glucocorticoids Decrease Longitudinal Bone Growth in Paediatric Kidney Transplant Recipients by Stimulating the FGF23/FGFR3 Signalling Pathway**
*Luis Toro¹, Angela Delucchi², Rodrigo Alzamora³, Victor Barrientos³, Luis Michea³, Andrea Lazcano⁴, Veronica Mericq⁵. ¹Hospital Clinico Universidad de Chile, Chile, ²Hospital Luis Calvo Mackenna, Chile, ³Facultad de Medicina Universidad de Chile, Chile, ⁴Hospital Roberto del Rio, Chile, ⁵Institute of Maternal and Child Research, Universidad de Chile, Chile
Disclosures: Luis Toro, None
- LB MON-984 Developing an In Vitro Method to Identify the Biological Effect of Bone Marrow on Skeletal Acquisition for Children with Cerebral Palsy**
*Daniel Whitney¹, Andrea Alford¹. ¹University of Michigan, United States
Disclosures: Daniel Whitney, None

BONE INTERACTIONS WITH MUSCLE AND OTHER TISSUES

- LB MON-989 In Vivo Role of M1 and M2 Macrophages at Genesis and Progress of Periapical Lesion**
*Raquel Segato¹, Carolina Pucinelli², Lea Silva², Paulo Nelson-Filho², Lúcia Faccioli³, Carlos Sorgi³. ¹School of Dentistry of Ribeirao Preto - University of Sao Paulo, Brazil, ²School of Dentistry of Ribeirão Preto - University of São Paulo, Brazil, ³Faculdade de Ciências Farmacêuticas de Ribeirão Preto, Universidade de São Paulo, Brazil
Disclosures: Raquel Segato, None
- LB MON-990 Suppression of Heterotopic Ossification in Fibrodysplasia Ossificans Progressiva Models by an mTOR Signaling Modulator**
*Chengzhu Zhao¹, Makoto Ikeya¹. ¹Center for iPS Cell Research and Application, Kyoto University, Japan
Disclosures: Chengzhu Zhao, None

CHONDROCYTES

- LB MON-998 TGFBR2/Noggin/BMP axis is essential for joint development and homeostasis**
*Tieshi Li¹, Fang Fang¹, Alessandra Esposito¹, Marissa Cruz¹, Xiaofei Li¹, Anna Spagnoli¹. ¹University of Nebraska Medical Center, United States
Disclosures: Tieshi Li, None
- LB MON-999 Effects of carbon monoxide releasing molecule-3 on the expression of matrix metalloproteinases in rat condylar chondrocytes induced by interleukin-1β**
*Hui Song¹. ¹School of Stomatology, Shandong university, China
Disclosures: Hui Song, None

HORMONAL REGULATORS

LB MON-1006 PTH-induced phosphorylation of the transcriptional coregulator α NAC is required for optimal anabolic response

*Martin Pellicelli¹, René St-Arnaud¹. ¹Shriners Hospitals for Children – Canada, Canada

Disclosures: Martin Pellicelli, None

MECHANOBIOLOGY

LB MON-1010 Material Properties of Trans-Iliac bone biopsies, as assessed by nanoindentation (NI), in patients with and without Atypical Femur Fractures (AFF) on long-term bisphosphonate (BP) Therapy for low bone density: A prospective nested case-controlled study

*Lanny Griffin¹, Cicilia Nelson¹, Shiging Qiu², Elizabeth Warner², Mahalakshmi Honasoge², Sudhaker Rao². ¹California Polytechnic State University (Cal Poly), United States, ²Henry Ford Health System, United States

Disclosures: Lanny Griffin, None

MUSCULOSKELETAL DEVELOPMENT

LB MON-1015 Effects of Daily Palovarotene Versus KTI-2338 Administration on Skeletal Development in Wild-Type Mice

*Keith Babbs¹, Chris Materna¹, ffolliott Fisher¹, Catherine Evans¹, Jasbir Seehra¹, Jennifer Lachey¹. ¹Keros Therapeutics, United States

Disclosures: Keith Babbs, Keros Therapeutics Inc., Grant/Research Support

MUSCULOSKELETAL PROGENITOR CELLS AND LINEAGE DETERMINATION

LB MON-1020 Transcriptional Factor NFATc1 Enriches a Migratory Stem Cell Population for Musculoskeletal Enveloping Tissues and the Bone

*Ruirui Shi¹, Jiangdong Ren², Lizhi He³, Bin Zhou⁴, Guojin Hou⁵, Bin Zhou⁶, Xianpeng Ge⁷. ¹Peking University School and Hospital of Stomatology, China, ²First Affiliated Hospital of Xinjiang Medical University, China, ³Harvard Medical School, United States, ⁴Shanghai Institute of Biochemistry and Cell Biology, China, ⁵Peking University Third Hospital, China, ⁶Albert Einstein College of Medicine of Yeshiva University, United States, ⁷Department of Molecular, Cell and Cancer Biology, University of Massachusetts Medical School, United States

Disclosures: Ruirui Shi, None

LB MON-1021 Regulation of bone growth and repair by the retinoic acid signaling pathway

*Wilder Scott¹, Arthur Sampaio¹, Michael Underhill¹. ¹University of British Columbia, Canada

Disclosures: Wilder Scott, None

OSTEOARTHRITIS AND OTHER JOINT DISORDERS

LB MON-1022 The Correlation of Bone Bridge and Low Bone Mineral Density Measured by Quantitative Computed Tomography in Patients with Ankylosing Spondylitis

*So-Yun Lee¹, Ran Song¹, Hyung-In Yang¹, Sang-Hoon Lee¹. ¹Division of Rheumatology, Department of Internal Medicine, School of Medicine, Kyung Hee University, Republic of Korea

Disclosures: So-Yun Lee, None

OSTEOBLASTS

LB MON-1026 Identification of Gli1-interacting proteins during simvastatin-stimulated osteogenic differentiation of bone marrow mesenchymal stem cells

*Faming Tian¹, Bojing Chi¹. ¹North China University of Science and Technology, China

Disclosures: Faming Tian, None

OSTEOCLASTS

LB MON-1032 Sirtuin 6 in preosteoclasts suppresses age- and estrogen deficiency-related bone loss by stabilizing estrogen receptor α

*Young Jae Moon¹, Zhongkai Zhang¹, Jung Ryul Kim¹, Eun Ju Bae², Byung-Hyun Park³.

¹Department of Orthopaedic Surgery, Chonbuk National University Medical School, Republic of Korea, ²College of Pharmacy, Woosuk University, Republic of Korea,

³Department of Biochemistry and Molecular Biology, Republic of Korea

Disclosures: Young Jae Moon, None

LB MON-1039 miR-100 coordinates TGF β and Wnt signaling in osteocyte mechanotransduction

*Neha Dole¹, David Monteiro¹, Courtney Mazur¹, Tamara Alliston¹, Jason Yang², Hikaru

Miyazaki². ¹University of California San Francisco, United States, ²University of California Berkeley, United States

Disclosures: Neha Dole, None

OSTEOCYTES

LB MON-1040 Age-related suppression of osteocyte lacuna/canalicular networks, PLR gene expression, and pericellular fluid flow

*Charles Schurman¹, Stefaan Verbruggen², Tamara Alliston³. ¹Department of Orthopaedic Surgery, University of California San Francisco. University of California Berkeley –

University of California San Francisco Graduate Program in Bioengineering, United States,

²Department of Biomedical Engineering, Columbia University, United States, ³Department of Orthopaedic Surgery, University of California San Francisco, United States

Disclosures: Charles Schurman, None

OSTEOPOROSIS - ASSESSMENT

LB MON-1048 Dual Hip DXA. Is it time to change the Official Position of the ISCD?

*Weiwen Chen¹, Zulekha Khan², Nicholas Pocock³. ¹St Vincent's Hospital, Australia, ²St Vincent's Clinic, Australia, ³St Vincent's Hospital, Australia

Disclosures: Weiwen Chen, Amgen, Speakers' Bureau

LB MON-1049 Evaluation of the bone mineral density and cortical thickness of proximal femur by quantitative computed tomography (QCT) in hemodialysis patients

*Yosuke Kawano¹, Shoichi Ichimura¹, Masaichi Hasegawa¹, Shoichi Kurosaki², Yoshiki Ieda². ¹Kyorin University, Japan, ²Shirakawa Hospital, Japan

Disclosures: Yosuke Kawano, None

OSTEOPOROSIS - EPIDEMIOLOGY

LB MON-1055 The risk and consequences of vertebral fracture in patients with Ankylosing Spondylitis from a linked health database

*Milica Ognjenovic¹, Warren Raymond¹, Helen Keen¹, David Preen¹, Charles Inderjeeth², Johannes Nossent². ¹University of Western Australia, Australia, ²University of Western Australia and North Metropolitan Health Service, Australia

Disclosures: Milica Ognjenovic, None

LB MON-1056 Secular Trends and Predictors of Hypovitaminosis D Across the Life Course in Lebanese from a Large Laboratory Database

*Randa Saad¹, Ghada El-Hajj Fuleihan¹, Vanessa Akiki². ¹Calcium Metabolism and Osteoporosis Program, WHO Collaborating Center for Metabolic Bone Disorders at the American University of Beirut-Medical Center, Beirut, Lebanon, Lebanon, ²Endocrinology division, Internal Medicine department, American University of Beirut Medical Center, Lebanon

Disclosures: Randa Saad, None

LB MON-1057 Prevalent Radiographic Vertebral Fracture and Abdominal Aortic Calcification Together May Improve Prediction of Incident Hip Fracture

*John Schousboe¹, Lisa Langsetmo², Brent Taylor², Allyson Kats², Tien Vo², Kristine Ensrud², Pawel Szulc³, Joshua Lewis⁴. ¹Park Nicollet Clinic & HealthPartners Institute; University of Minnesota, United States, ²University of Minnesota, United States, ³INSERM, University of Lyon, France, ⁴Edith Cowan University, Australia

Disclosures: John Schousboe, None

LB MON-1058 Multimorbidity and long-term mortality following a specific fragility fracture: Latent class analysis of a nationwide population-based cohort

*Thach S Tran¹, Dana Bliuc², Louise Hansen³, Bo Abrahamsen⁴, Joop van den Bergh⁵, John A Eisman⁶, Tineke van Geel⁷, Piet Geusens⁸, Peter Vestergaard⁹, Tuan V Nguyen¹⁰, Jacqueline R Center¹¹. ¹Osteoporosis and Bone Biology, Garvan Institute of Medical Research; Faculty of Medicine, UNSW Sydney Australia, Australia, ²Osteoporosis and Bone Biology, Garvan Institute of Medical Research; Faculty of Medicine, UNSW Sydney Australia, Australia, ³Danish Center for Healthcare Improvements, Department of Business and Management, Aalborg University, Aalborg East, Denmark, ⁴Department of Medicine, Holbæk Hospital, Holbæk; Department of Clinical Research, Odense Patient Data Explorative Network, University of Southern Denmark, 5000, Odense; Denmark, Denmark, ⁵Maastricht University Medical Center, Research school Nutrim, Department of Internal Medicine, Subdivision of Rheumatology, Maastricht, The Netherlands; VieCuri Medical Centre of Noord-Limburg, Department of Internal Medicine, Venlo, The Netherlands, Netherlands, ⁶Osteoporosis and Bone Biology, and Clinical Translation and Advanced Education, Garvan Institute of Medical Research; ; Clinical School, St Vincent's Hospital; Faculty of Medicine, UNSW Sydney; School of Medicine Sydney, University of Notre Dame Australia, Australia, ⁷Maastricht University, Research School CAPHRI, Department of Family Medicine, Maastricht, The Netherlands, Netherlands, ⁸Maastricht University Medical Center, Research School CAPHRI, Department of Internal Medicine, Subdivision of Rheumatology, The Netherlands; University Hasselt, Biomedical Research Institute, Hasselt, Belgium, Netherlands, ⁹Department of Clinical Medicine, Aalborg University, Aalborg, Denmark; Department of Endocrinology, Aalborg University Hospital, Aalborg, Denmark; Steno Diabetes Center North Jutland, Denmark, ¹⁰Osteoporosis and Bone Biology, Garvan Institute of Medical Research, Sydney Australia; Faculty of Medicine, UNSW Sydney Australia; School of Biomedical Engineering, University of Technology Sydney, Australia, Australia, ¹¹Osteoporosis and Bone Biology, Garvan Institute of Medical Research, Sydney Australia; Clinical School, St Vincent's Hospital, Sydney, Australia ; Faculty of Medicine, UNSW Sydney Australia, Australia

Disclosures: Thach S Tran, None

LB MON-1059 Trajectories to subsequent admissions and mortality following a specific fragility fracture: A nationwide population-based follow-up study

*Thach S Tran¹, Dana Bliuc¹, Seán O'Donoghue², Louise Hansen³, Bo Abrahamsen⁴, Joop van den Bergh⁵, Tineke van Geel⁶, Piet Geusens⁷, Peter Vestergaard⁸, Tuan V Nguyen⁹, Jacqueline R Center¹⁰, ¹Bone Biology Division, Garvan Institute of Medical Research; Faculty of Medicine, UNSW Sydney, Australia, ²Genomics and Epigenetics Division, Garvan Institute of Medical Research; Data61, Commonwealth Scientific and Industrial Research Organisation (CSIRO); School of Biotechnology and Biomolecular Sciences, UNSW Sydney, Australia, ³Danish Center for Healthcare Improvements, Department of Business and Management, Aalborg University, Denmark, ⁴Department of Medicine, Holbæk Hospital, Holbæk; Department of Clinical Research, Odense Patient Data Explorative Network, University of Southern Denmark, 5000, Odense, Denmark, ⁵Maastricht University Medical Center, Research school Nutrim, Department of Internal Medicine, Subdivision of Rheumatology, Maastricht; VieCuri Medical Centre of Noord-Limburg, Department of Internal Medicine, Venlo, Netherlands, ⁶Maastricht University, Research School CAPHRI, Department of Family Medicine, Netherlands, ⁷Maastricht University Medical Center, Research School CAPHRI, Department of Internal Medicine, Subdivision of Rheumatology, The Netherlands; University Hasselt, Biomedical Research Institute, Hasselt, Belgium, Netherlands, ⁸Department of Clinical Medicine, Aalborg University; Department of Endocrinology, Aalborg University Hospital; Steno Diabetes Center North Jutland, Denmark, ⁹Osteoporosis and Bone Biology, Garvan Institute of Medical Research; ¹⁰Faculty of Medicine, UNSW; School of Biomedical Engineering, University of Technology Sydney, Australia, ¹⁰Osteoporosis and Bone Biology, Garvan Institute of Medical Research; Clinical School, St Vincent's Hospital; Faculty of Medicine, UNSW Sydney, Australia

Disclosures: Thach S Tran, None

LB MON-1060 Data mining approaches in the assessment of urinary and blood concentrations of chemical elements in the North American population and their association to bone mineral density loss.

*Joao Paulo Ximenez¹, Ariane Zamarioli¹, Fernando Barbosa Jr¹. ¹University of Sao Paulo, Brazil

Disclosures: Joao Paulo Ximenez, None

OSTEOPOROSIS - HEALTH SERVICES RESEARCH

LB MON-1061 Targeting women with severe microstructural deterioration for treatment is cost effective

*Danny Liew¹, Roland Chapurlat², Ego Seeman³. ¹School of Public Health and Preventive Medicine, Monash University, Australia, ²INSERM UMR1033 and Université de Lyon, France, ³Departments of Endocrinology and Medicine, Austin Health, The University of Melbourne, Australia

Disclosures: Danny Liew, None

OSTEOPOROSIS - NUTRITION, DIETARY SUPPLEMENTS AND PHYSICAL ACTIVITY

LB MON-1066 Acute Effects of Dietary or Supplemental Calcium on serum CTX levels in Post-Menopausal Women With High or Low Visceral Fat Levels.

*Deepti Sharma¹, Paul Anderson¹, Peter Clifton¹, Howard Morris¹. ¹University of South Australia, Australia

Disclosures: Deepti Sharma, None

OSTEOPOROSIS - PATHOPHYSIOLOGY

LB MON-1067 Role of Progranulin in Lactation-Induced Bone Loss

*Liping Wang¹, Robert Nissenson¹. ¹San Francisco VA Medical Center, United States

Disclosures: Liping Wang, None

OSTEOPOROSIS - TREATMENT

LB MON-1073 Effect of Denosumab compared with Bisphosphonate on fracture-healing in Japanese patients with fragility intertrochanteric fracture

*Shusuke Ota¹, Yoshiaki Tsuboi¹, Atsushi Inada¹, Hiroki Yonezu², Jiro Kato³. ¹Department of Orthopaedic Surgery, Nagoya City West Medical Center, Japan, ²Department of Orthopaedic Surgery, Nagoya City East Medical Center, Japan, ³Department of Orthopaedic Surgery, Kasugai Municipal Hospital, Japan

Disclosures: Shusuke Ota, None

PARACRINE REGULATORS

LB MON-1076 Adipose-derived stem cells: differentiation to parathyroid hormone secreting cells

*Eun Heui Kim¹, Yun Kyung Jeon¹, Sang Soo Kim¹, Wook Yi¹. ¹Department of Internal Medicine and Biomedical Research Institute, Pusan National University Hospital, Busan, Republic of Korea, Republic of Korea

Disclosures: Eun Heui Kim, None

PRECLINICAL MODELS OF MUSCULOSKELETAL DISORDERS

LB MON-1079 Local administration of IL-1Ra as a strategy to enhance long bone healing

*William Lackington¹, Maria Antonia Gomez¹, Maria Hildebrand¹, Mauro Alini¹, Stephan Zeiter¹, Keith Thompson¹. ¹AO Research Institute Davos, Switzerland

Disclosures: William Lackington, None

RARE BONE DISEASES - TRANSLATIONAL

LB MON-1087 Rmrp mutation disrupts chondrogenesis and bone ossification in zebrafish model of cartilage-hair hypoplasia via enhanced Wnt/ β -catenin signaling

*Xianding Sun¹, Yangli Xie¹, Lin Chen¹. ¹Laboratory for the Rehabilitation of Traumatic Injuries, State Key Laboratory of Trauma, Burns and Combined Injury, Trauma Center, Research Institute of Surgery, Daping Hospital, Army Medical University, China

Disclosures: Xianding Sun, None

ORAL POSTER SESSION III

12:15 pm - 1:05 pm

Orange County Convention Center
West Hall C

New this year! Come hear a select number of plenary poster presenters give an overview of their poster on digital touch screen displays. Following the oral poster presentations, visit their poster board to ask questions and continue the discussion.

BASIC & TRANSLATIONAL

12:15 pm PPAR γ Regulation of Osteocyte Fuel Dependency and Capacity Contributes to the Balance of Systemic Energy Metabolism

FRI-558

*Sudipta Baroi¹, Amit Chougule², Beata Lecka-Czernik², Patrick Griffin³. ¹University of Toledo College of Medicine & Life Sciences, United States, ²University of Toledo College of Medicine and Life Sciences, United States, ³The Scripps Research Institute, United States

Disclosures: Sudipta Baroi, None

12:20 pm ASBMR 2019 Annual Meeting Young Investigator Award Truncating Mutations in Recql4 Cause a Low Bone Mass Phenotype, but Not Osteosarcoma

FRI-440

*Wilson Castillo-Tandazo¹, Monique Smeets¹, Natalie Sims¹, Carl Walkley². ¹St. Vincent's Institute; Department of Medicine, St. Vincent's Hospital, University of Melbourne, Australia, ²St. Vincent's Institute; Department of Medicine, St. Vincent's Hospital, University of Melbourne; Mary MacKillop Institute for Health Research, Australian Catholic University, Australia

Disclosures: Wilson Castillo-Tandazo, None

- 12:25 pm
FRI-559** **Osteocyte Oxidative Stress Following Estrogen Loss, Microdamage and Disuse**
*Dorra Frikha-Benayed¹, Mitchell Schaffler¹, Jelena Basta-Plajkic¹, Robert J Majeska¹. ¹The city college of New York, United States
Disclosures: Dorra Frikha-Benayed, None
- 12:30 pm
FRI-560** **Mechanical Loading Reduces the Adverse Effects of Fatty Acid Overload on Osteocytes**
*Yukiko Kitase¹, Alberto Smargiassi¹, Lynda Bonewald¹, Nuria Lara², Mark Johnson³.
¹Indiana University, United States, ²University of Missouri at Kansas City, United States, ³University of Missouri-Kansas City, United States
Disclosures: Yukiko Kitase, None
- 12:35 pm
FRI-454** **The Constitutive Photomorphogenesis 9 (COP9) Signalosome (CSN) Complex is Required for Proper Postnatal Skeletal Growth**
*William Samsa¹, Murali Mamidi¹, Lindsay Bashur¹, Guang Zhou¹. ¹Case Western Reserve University, United States
Disclosures: William Samsa, None
- 12:40 pm
FRI-833** **Insights from Lexicon Pharmaceuticals' Genome5000™ Mouse Gene Knockout Campaign**
*Robert Brommage¹, David R. Powell¹, Peter Vogel². ¹Lexicon Pharmaceuticals, United States, ²St Jude Children's Research Hospital, United States
Disclosures: Robert Brommage, Lexicon Pharmaceuticals, Grant/Research Support
- 12:45 pm
FRI-836** **The SH3BP2-SYK Axis Regulates Alveolar Bone Loss in a Mouse Model for Periodontitis**
*Mizuho Kittaka¹, Tetsuya Yoshimoto¹, Yasuyoshi Ueki¹, Collin Schlosser², Mikihiro Kajiya³, Hidemi Kurihara³, Ernst Reichenberger⁴. ¹Department of Biomedical Sciences and Comprehensive Care, Indiana University School of Dentistry, Indianapolis, United States, ²Department of Orthodontics and Dentofacial Orthopedics, University of Missouri-Kansas City, School of Dentistry, United States, ³Department of Periodontal Medicine, Applied Life Sciences, Institute of Biomedical & Health Sciences, Graduate School of Biomedical & Health Sciences, Hiroshima University, Japan, ⁴Department of Reconstructive Sciences, School of Dental Medicine, University of Connecticut Health, United States
Disclosures: Mizuho Kittaka, None
- 12:50 pm
FRI-237** **Leveraging Unconfounded Genetic Risk Scores to Stratify Fracture Risk by Age at Onset**
*Carolina Medina-Gomez¹, Katerina Trajanoska¹, M. Carola Zillikens¹, Andre G. Uitterlinden¹, Fernando Rivadeneira¹, Chun Chieh Fan², Anders M. Dale², Tyler M. Seibert², Ole A. Andreassen³. ¹Department of Internal Medicine, Erasmus University Medical Centre, Netherlands, ²Center for Multimodal Imaging and Genetics, University of California San Diego, United States, ³NORMENT, KG Jebsen Centre, Institute of Clinical Medicine, University of Oslo, Norway
Disclosures: Carolina Medina-Gomez, None
- 12:55 pm
FRI-840** **CaMKK2-AMPK-p38 MAPK Axis in Osteoarthritis**
*Uma Sankar¹, Elsa Mevel¹, Justin Williams¹. ¹Indiana University School of Medicine, United States
Disclosures: Uma Sankar, None
- 1:00 pm
FRI-844** **OI fractures show delayed healing and increased possibility of re-fracture in murine models**
*Jennifer Zieba¹, Elda Munivez¹, Alexis Castellon¹, Brendan Lee¹. ¹Baylor College of Medicine, United States
Disclosures: Jennifer Zieba, None

CLINICAL

- 12:15 pm
FRI-706** **The Effect of Exercise or Bisphosphonate Use on Bone Density and Microarchitecture among Postmenopausal Women with Low Bone Mass Experiencing Modest Weight Loss**
*Kristen Beavers¹, Lauren Fasth¹, Nancy Waltman², Kevin Kupzyk², Laura Flores², Laura Bilek², Joan Lappe³. ¹Wake Forest University, United States, ²University of Nebraska Medical Center, United States, ³Creighton University, United States
Disclosures: Kristen Beavers, None
- 12:20 pm
FRI-769** **Osteosarcoma Surveillance Program Using Real World Data from US Pharmacy Claims Linked to State Cancer Registry Data to Estimate the Incidence of Osteosarcoma Among Patients Treated with Teriparatide (Forteo)**
*Nicole Kellier-Steele¹. ¹Eli Lilly and Company, United States
Disclosures: Nicole Kellier-Steele, Eli Lilly and Company, Other Financial or Material Support
- 12:25 pm
FRI-766** **Modeling-based Bone Formation Persists in the Femoral Neck Despite Remodeling Inhibition in Subjects Treated with Denosumab**
*David W Dempster¹, Jeri W Nieves¹, Felicia Cosman¹, Peter W Butler², Li Chen², Rachel B Wagman², Mathias P Boström³, Hua Zhou⁴, Nicola Pannacciulli⁵. ¹Columbia University, United States, ²Amgen Inc., United States, ³Hospital for Special Surgery, United States, ⁴Helen Hayes Hospital, United States, ⁵Amgen Inc., United States
Disclosures: David W Dempster, Amgen, Consultant, Amgen, Grant/Research Support, Amgen, Speakers' Bureau
- 12:30 pm
FRI-707** **ASBMR 2019 Diversity Fund in Research and Education Young Investigator Award Evaluating the Relationship Between Physical Activity Level and Bone Structure: a pQCT Analysis**
*Laura Flores¹, Sarah Nelson¹, Kevin Kupzyk¹, Nancy Waltman¹, Sophia Pankratz¹, Laura Bilek¹, Joan Lappe². ¹University of Nebraska Medical Center, United States, ²Creighton University, United States
Disclosures: Laura Flores, None
- 12:35 pm
FRI-640** **The Risk of Hip and Non-Vertebral Fractures in Parkinson's Disease: A Systematic Review and Meta-Analysis**
*Marian Schini¹, Tatiane Vilaca¹, Richard Eastell¹, Susan Harnan², Anthea Sutton², Edith Poku², Steve Cummings³. ¹Academic Unit of Bone Metabolism, The University of Sheffield, UK, United Kingdom, ²School of Health and Related Research, The University of Sheffield, UK, United Kingdom, ³University of California, San Francisco, United States
Disclosures: Marian Schini, None
- 12:40 pm
FRI-710** **A comparison of DXA-derived bone responses to impact versus resistance training in young adult women: The OPTIMA-Ex trial**
*Conor Lambert¹, Amy Harding¹, Steven Watson¹, Benjamin Weeks¹, Belinda Beck². ¹School of Allied Health Sciences, Griffith University, Gold Coast, Australia, ²Menzies Health Institute Queensland, Griffith University, Gold Coast, Australia, Australia
Disclosures: Conor Lambert, None
- 12:45 pm
FRI-771** **Denosumab 10 Year Simulation of Bone Remodeling In Human Biopsies**
*Duncan Tourolle né Betts¹, Charles Ledoux¹, Daniele Boaretti¹, Ralph Müller¹, Mauricio Aguilera², Najma Saleem², Mauricio Aguilera³, Najma Saleem³. ¹Institute for Biomechanics, ETH Zurich, Switzerland, ²Amgen Inc., Mexico, ³Amgen Inc., United States
Disclosures: Duncan Tourolle né Betts, Amgen Inc., Grant/Research Support
- 12:50 pm
FRI-774** **Is severely suppressed bone turnover in patients on long term bisphosphonate treatment causally related atypical femoral fracture?**
*Shijing Qiu¹, George Divine¹, Elizabeth Warner¹, Sudhaker Rao¹. ¹Henry Ford Health System, United States
Disclosures: Shijing Qiu, None

12:55 pm
FRI-776

Risk predictors for seniors at imminent risk of fracture

*Richard Sheer¹, Yawen Jiang², Lavanya Sudharshan³, Margaret Pasquale³. ¹Humana Healthcare Research Inc., United States, ²Amgen, United States, ³Humana Healthcare Research, United States

Disclosures: Richard Sheer, Humana Healthcare Research, Major Stock Shareholder

1:00 pm
FRI-778

Study of Twice-Weekly Injections of Teriparatide by Comparing Efficacy with Once-Weekly Injections in Osteoporosis Patients: The TWICE Study

*Toshitsugu Sugimoto¹, Masataka Shiraki², Hiroshi Hagino³, Takeshi Yoshimura⁴, Toshitaka Nakamura⁵. ¹Eikokai Ono Hospital, Japan, ²Research Institute and Practice for Involutional Diseases, Japan, ³School of Health Science, Tottori University, Japan, ⁴Medical Affairs Department, Asahi Kasei Pharma Corporation, Japan, ⁵Toto Sangenjaya Rehabilitation Hospital, Japan

Disclosures: Toshitsugu Sugimoto, Astellas Pharma, Eisai, Daiichi-Sankyo, Chugai Pharmaceutical, and Eli Lilly Japan, Grant/Research Support, Asahi Kasei Pharma and Daiichi-Sankyo, Consultant

AEIOU Scientific

Booth: 900

AEIOU Scientific provides Cortical Bone Mechanics Technology™ Scientific Instruments that enable researchers to make more accurate measurement of the strength/fragility of bone in living people. CBMT is non-invasive, uses vibration analysis to make dynamic bending test measurements of mechanical properties of the ulna in vivo and in cadaver arms.

Alexion Pharmaceuticals

Booth: 608

Alexion is a global biopharmaceutical company focused on serving patients and families affected by rare diseases, including hypophosphatasia (HPP), through the innovation, development and commercialization of life-changing therapies.

American Bone Health

Booth: 522

American Bone Health is a national, community-based nonprofit organization focused on public education and advocacy. We recruit, train and nurture a network of peer educators and provide local programs to engage, educate and empower consumers to take action to improve bone health and reduce osteoporosis and fractures.

Biomedica

Booth: 516

Biomedica provides internationally recognized, fully validated own ELISAs for pre-/clinical research. Biomedica's portfolio includes ELISAs for FGF23, Sclerostin, DKK-1, OPG and FREE soluble RANKL. Launched 2019: intact FGF23, Vanin-1, Angiopoietin-2, Periostin. Service measurements, also for TAmiRNA's osteomiR™ and Fianostic's FluoBolt™ FIAs are available. www.bmgrp.com

Biomomentum

Booth: 803

Biomomentum provides biomechanical testing services and manufactures and commercializes testing devices for the mechanical characterization of biomaterials and tissues. The Mach-1™ multi-axial mechanical tester is the only all-in-one device designed for compression, tension, shear, friction, torsion and indentation mapping. The Mach-1™ is also an excellent educational tool for students.

Biophytis

Booth: 821

Biophytis is a clinical-stage biotechnology company focused on the development of novel therapeutics for patients suffering from age-related diseases such as sarcopenia. Our therapeutic approach targets key biological resilience pathways that can protect against and counteract the effects of the multiple biological stresses that lead to age-related diseases."

Bioquant Image Analysis Corporation

Booth: 717

BIOQUANT OSTEO software provides automated and interactive analysis of bone and muscle histology: skeletal phenotyping, muscle phenotyping, osseointegration, human bone, arthritis, cortical bone, chondrocyte proliferation, and metastasis. BIOQUANT SCAN software provides automated bright field, fluorescent, and polarized light slide-scanning. BIOQUANT RESEARCH SERVICES provides contract services in bone biology. Website: osteo.bioquant.com

Bindex**Booth: 533**

Bindex® is the game changer point-of-care technology in osteoporosis management (a new reimbursement code in US). Bindex® measures the cortical bone thickness of the tibia and the algorithm calculates the Density Index, a parameter which estimates bone mineral density at the hip with 90% sensitivity and specificity thresholds for osteoporosis.

Bruker BioSpin**Booth: 709**

Bruker BioSpin offers advanced preclinical imaging solutions for a broad spectrum of application fields, including orthopedics. Drawing on over thirty years' experience, Bruker develops and manufactures systems for 3-dimensional, non-destructive investigation of an object's internal microstructure.

Charles River**Booth: 612**

Charles River offers an integrated service in the field of musculoskeletal research. Our scientists, pathologists, veterinarians, and surgeons provide expertise allowing for a comprehensive evaluation of bone, muscle and cartilage drug efficacy and safety, as well as orthopedic applications across many animal species.

Clementia and Ipsen Company**Booth: 819**

Ipsen Biopharmaceuticals is a global biopharmaceutical company focused on innovation and specialty care. The company develops and commercializes innovative medicines in three key therapeutic areas – Oncology, Neuroscience and Rare Diseases. For more information on Ipsen in North America, please visit

Eagle Biosciences**Booth: 626**

Featuring assays like Intact FGF23, Intact FGF21, Noggin, HMGB1, Semaphorin 4D, Free 25OH Vitamin D and hundreds of other relevant assays for bone metabolism, kidney, cardiovascular research and clinical laboratories, Eagle Biosciences has quickly become a leading provider of immunoassays, antibodies, and proteins to the worldwide research and clinical communities.

Elsevier**Booth: 528**

Elsevier is a global information analytics business that helps scientists and clinicians to find new answers, reshape human knowledge, and tackle the most urgent human crises.
www.elsevier.com

Galgo Medical**Booth: 817**

Galgo Medical develops and provides advanced medical imaging software solutions to optimize bone management, from the industry and clinicians' practice towards patients' outcomes - by reducing radiation exposure while increasing the potential of current 2D imaging modality, turning standard DXA hip examination into QCT-like 3D analysis, with 3D-SHAPER(r).

Hologic, Inc.**Booth: 500**

Hologic, Inc., a leading supplier of innovative imaging solutions showcases the Horizon™ DXA System. The Horizon DXA System provides high quality images that go beyond accurately determining bone mineral density. The powerful images can assess vertebral fractures, pinpoint incomplete atypical femur fractures, identify aortic calcifications, and measure body composition. <https://www.hologic.com/hologic-products/breast-skeletal/horizon-dxa-system>

Immundiagnostik**Booth: 823**

Immundiagnostik is an internationally active diagnostics company that develops and produces innovative immunoassays and other analytical methods for clinical routine and life science research. We provide effective tools for prevention, differential diagnosis and therapy monitoring in the areas of disorders of the skeletal system, oxidative stress, gastroenterology and cardiovascular diseases.

Inozyme Pharma**Booth: 520**

Inozyme Pharma is a biotechnology company committed to developing novel medicines for the treatment of rare metabolic diseases of calcification. The company was founded in 2016 with technology licensed from Yale University. For more information, please visit: www.inozyme.com.

Kubtec Scientific**Booth: 714**

Kubtec Scientific continues to break new ground in imaging technology with the PARAMETER 3D with DIGIMUS®, the only 3D cabinet X-ray system to offer tomosynthesis capability and BMD/BMC measurement applications. The PARAMETER 3D with DIGIMUS for science and research, also provides 2D and optical imaging, which affords unprecedented high-resolution, high-contrast imaging with multi-slice capability, making it the most powerful radiographic tool on the market.

Medimaps Group**Booth: 504**

Medimaps Group is a leading global medical software analytics company based in Switzerland with offices in US and France. Its flagship product, the TBS iNsight™ (Osteo) has been used to better predict fracture risk in osteoporosis. It is the gold standard for bone microarchitecture assessment integrated seamlessly in clinical routine.

Micro Photonics**Booth: 711**

Micro Photonics, and partner Bruker MicroCT are leading the advancement in high resolution micro-CT solutions for bone, biomaterials, orthopedics, and other life science research with a focus on bone morphology and BMD. The SkyScan product line meets the high-resolution and versatility required for any demanding research laboratory.

Micro Photonics**Booth: 808**

Measure Bone Mineral Density and Body Composition for Lab Animals

Micro Photonics, and partner Medikors are leading advances in measurement of bone mineral density (BMD) and body composition (BMC, FAT, LEAN) of live lab animals with InAlyzer DEXA systems. The InAlyzer is simple, quick, noninvasive, and useful for longitudinal studies.

Mindways Software, Inc.**Booth: 509**

Mindways produces Quantitative CT (QCT) products for measurement of bone mineral density from CT scans. QCT Pro and CliniQCT are FDA-cleared, reimbursable, and compatible with FRAX, all for a fraction of the cost of DXA. For researchers, Mindways BIT adds investigational tools for analysis capability beyond bone density.

Novotec Medical GmbH / Stratec Medizintechnik GmbH**Booth: 513**

Stratec Medizintechnik and Novotec Medical offer systems for musculoskeletal diagnosis and therapy. The XCT pQCT systems allow diagnosis of bone and muscle characteristics. Leonardo Mechanography is used to measure muscular function under physiological conditions. Galileo vibration devices improve neuromuscular function and mobility in patients with chronic diseases and sarcopenia.

Pharmatest Services LTD**Booth: 429**

Pharmatest is a CRO that offers preclinical efficacy services in skeletal diseases and oncology. Our services include in vitro bone cell assays (osteoclasts and osteoblasts), bone analysis services, animal models of bone safety, osteoporosis, osteoarthritis, rare bone diseases and cancer bone metastasis, and clinical bone turnover marker measurements.

Quidel Corporation**Booth: 835**

Quidel manufactures immunoassays for markers of bone turnover that are useful predictors of fracture risk and rate of bone loss. Examples include pyridinolines, deoxypyridinolines, and helical peptide. Formation markers include bone specific alkaline phosphatase, carboxyterminal propeptide of Type 1 collagen (CICP, PICP), and osteocalcin. Visit quidel.com for more information.

Radius Health, Inc.**Booth: 508**

Radius Health is a science-driven fully integrated biopharmaceutical company committed to developing and commercializing innovative endocrine therapeutics in osteoporosis and oncology. Visit www.radiuspharm.com

Rare Bone Disease**Booth: 403**

The Rare Bone Disease Alliance is a coalition which educates medical professionals, expands research and assists patients. Alliance participants include rare bone disease physician and scientific thought leaders, 11 Rare Bone Disease Patient organizations and pharmaceutical companies interested in the rare bone field.

Scanco Medical

Booth: 801

Scanco Medical (www.scanco.ch) is the leading global provider of mCT and HR-pQCT (XtremeCT) systems. All systems are bundled with easy to use and comprehensive tools for Scan Acquisition, Image analysis including Finite Element Software, Visualization and Archiving. Scanco also provides scanning and analysis services for academic and industrial groups.

Soft Bones Foundation

Booth: 610

Soft Bones Foundation (www.SoftBones.org) was formed in 2009 to provide information and a community to educate, empower and connect patients living with the rare bone disease hypophosphatasia (HPP), their families and caregivers. HPP is a condition affecting healthy development of bones and teeth, making bones softer and more likely to fracture.

StraxCorp

Booth: 812

StraxCorp has the first FDA cleared HRpQCT device. It is also doing research for developing a clinical AI aid for imminent risk of fracture (within 2 years) in over 70's for interpreting HRpQCT scans. This is being researched (not FDA cleared) as an adjunct to BMD, to help better target therapy, a major source of fracture treatment costs. Visit Booth 812 for more information.

Takeda

Booth: 632

Takeda is a global, values-based, R&D-driven biopharmaceutical leader headquartered in Japan, committed to bringing Better Health and a Brighter Future to patients by translating science into highly-innovative medicines. www.takeda.com

The International Society for Clinical Densitometry (ISCD)

Booth: 810

The International Society for Clinical Densitometry (ISCD) is dedicated to advancing high-quality musculoskeletal health assessments in the service of superior patient care. Our vision is to make quality musculoskeletal health assessment accessible for people everywhere.

UCONN Core for Imaging Mineralized Tissues

Booth: 527

This core performs fluorescence-based cryohistological analysis of mouse non-decalcified bone and cartilage plus access to μ CT analysis. Our in-house developed LIMS software will demonstrate how samples are acquired and processed for dynamic/cellular histomorphometry of the femur and vertebra and to assess pathology of articular/growth plate cartilage or alveolar/dental tissues.

Ultragenyx

Booth: 534, 809

Ultragenyx is a biopharmaceutical company committed to bringing to patients novel products for the treatment of serious rare and ultra-rare genetic diseases. The company has built a diverse portfolio of approved therapies and product candidates aimed at addressing diseases with high unmet medical need and clear biology for treatment, for which there are typically no approved therapies treating the underlying disease. www.ultragenyx.com

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