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SILVER LEVEL

Ultragenyx Pharmaceutical, Inc.

BRONZE LEVEL SUPPORTERS

Ascendis Pharma
Takeda

FRIEND LEVEL SUPPORTERS

Baxter Healthcare Corporation
Biophytis, Inc.
Cytokinetics
Inozyme Pharma, Inc.
Ipsen Biopharmaceuticals, Inc.
Kyowa Kirin
Lilly USA, LLC
Novartis Institutes for Biomedical Research, Inc.
Radius Health
Sanofi Genzyme
Scanco Medical
UCB

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 to 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	**Do not dismantle. All posters remain on the poster boards through 2:30 pm Monday, September 23**
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	**Do not dismantle. All posters remain on the poster boards through 2:30 pm Monday, September 23**
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	**Do not dismantle. All posters remain on the poster boards through 2:30 pm Monday, September 23**
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

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 thatwill 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 Burtt, 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 1001 **FGF23 in crosstalk of bone, kidney, and hematopoiesis in sickle cell bone disease**
*Liping Xiao[1], Sara Tavakoli[1], Donyell Williams[1], Marja Hurley[1]. [1]UConn Health, United States
Disclosures: Liping Xiao, None

1:30 pm 1002 **The Hajdu Cheney Mutation Sensitizes Mice to the Osteolytic Actions of TNFα**
*Jungeun Yu[1], Ernesto Canalis[1]. [1]UConn Health, United States
Disclosures: Jungeun Yu, None

1:45 pm
1003

Guanylyl cyclase-B activation rescues achondroplasia in mice
*Jerid Robinson[1], Lincoln Potter[1], Siu-Pok Yee[2], Yuan-Tsong Chen[3], Yi-Ching Li[3]. [1]University of Minnesota, United States, [2]University of Connecticut Health Center, United States, [3]Academia 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-Shepard[1], Lily Huang[1], Lili Wang[1], Xialing Wen[1], Nanditha Das[1], Qian Zhang[1], Christopher Schoenherr[1], Vincent Idone[1], Kalyan Nannuru[1], Aris Economides[1], Andrew Murphy[1], Sarah Hatsell[1]. [1]Regeneron Pharmaceuticals, United States
Disclosures: John Lees-Shepard, Regeneron Pharmaceuticals, Other Financial or Material Support

ASBMR 2019 Annual Meeting Young Investigator Award

2:15 pm
1005

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 Liu[1], Lei Dang[1], Xiaohao Wu[1], Jun Lu[1], Huarui Zhang[1], Chuanxin Zhong[1], Aiping Lyu[1], Ge Zhang[1], Chelsea H. DU[2], Joseph Zhai[3]. [1]Institute for Advancing Translational Medicine in Bone & Joint Diseases, Hong Kong Baptist University, Hong Kong SAR, China, China, [2]Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Hong Kong SAR, China, China, [3]Del 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

ASBMR 2019 Most Outstanding Translational Abstract

1:15 pm
1006

T cell-derived Dkk1 controls bone homeostasis and contributes to the pathogenesis of estrogen deficiency-induced bone loss
*Juliane Colditz[1], Syvia Thiele[1], Ulrike Baschant[1], Lorenz Hofbauer[1], Martina Rauner[1], Christof Niehrs[2]. [1]TU Dresden, Germany, [2]Uni Heidelberg, Germany
Disclosures: Juliane Colditz, None

ASBMR 2019 Annual Meeting Young Investigator Award

1:30 pm
1007

Glucocorticoids Induce Blood Vessel Senescence in Growing Long Bone
*Xiaonan Liu[1], Yu Chai[1], Weiping Su[1], Janet L Crane[1], Xu Cao[1], Mei Wan[1], Alena Shen[2]. [1]Johns Hopkins University, United States, [2]River Hill High School, United States
Disclosures: Xiaonan Liu, None

1:45 pm
1008

Long Interspersed Element–1 (LINE-1) with retrosposon activity is necessary for osteoblast differentiation in vitro and is altered in postmenopausal osteoporotic bone
*Arianna Mangiavacchi[1], Nazerke Atinbayeva[1], Valerio Orlando[1], Sjur Reppe[2], Kaare M Gautvik[3]. [1]KAUST, Saudi Arabia, [2]Oslo University Hospital, Norway, [3]Lovisenberg Diaconal Hospital, Norway
Disclosures: Arianna Mangiavacchi, None

2:00 pm 1009 **Sex Differences in Systemic Bone and Muscle Loss After Fracture in Mice**
*Blaine Christiansen[1], Manali Paralkar[1], Benjamin Osipov[1], Priscilla Tjandra[1], Armaun Emami[1], Henning Langer[2], Keith Baar[2]. [1]University of California Davis Health, Department of Orthopaedic Surgery, United States, [2]University 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 Brunetti[1], Silvia Colucci[1], Giuseppina Storlino[2], Graziana Colaianni[2], Maria Grano[2], Janne E Reseland[3], Monica Celi[4], Umberto Tarantino[5], Giovanni Passeri[6], Carl F Ware[7]. [1]Department of Basic and Medical Sciences, Neurosciences and Sense Organs, Section of Human Anatomy and Histology, University of Bari, Italy, [2]Department of Emergency and Organ Transplantation, Section of Human Anatomy and Histology, University of Bari, Italy, [3]Department of Biomaterials, Institute for Clinical Dentistry, University of Oslo, Norway, [4]Department of Orthopedics and Traumatology, Tor Vergata University of Rome, Italy, [5]Tor Vergata University of Rome, Italy, [6]Department of Clinical and Experimental Medicine, University of Parma, Italy, [7]Infectious 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 Ying[1], Jie Shen[1], Cuicui Wang[1], Regis Okeefe[1], Peijian Tong[2]. [1]Department of Orthopaedic Surgery, Washington University, United States, [2]Department 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 Michalski[1], Alex Zhong[1], Mitchell McDonald[1], Gabrielle Foxa[1], Cassandra Diegel[1], Bart Williams[1]. [1]Van Andel Research Institute, United States
Disclosures: Megan Michalski, None

1:45 pm 1013 **Investigation of Wnt Receptor Fzd2 in Mouse Limb Development**
*Zhendong Zhong[1], Cassandra Diegel[1], Megan Michalski[1], Mitchell McDonald[1], Gabrielle Foxa[1], Bart Williams[1]. [1]Van 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 Ha[1], Xiangyou Luo[1], Chenshuang Li[1], Eric Chen[1], Zhong Zheng[1], Kang Ting[1], Xinli Zhang[1], Samantha Lee[2], Alan Chien[3], Chia Soo[4]. [1]Division of Growth and Development, School of Dentistry, University of California, Los Angeles, United States, [2]Department of Ecology and Evolutionary Biology, University of California, Los Angeles, Los Angeles, United States, [3]Department of Microbiology, Immunology and Molecular Genetics, University of California, Los Angeles, United States, [4]Department 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 Cousminer[1], Andrew Wells[1], Yadav Wagley[2], Kurt Hankenson[2], Gregory Way[3], Casey Greene[3], Benjamin Voight[3], Shana McCormack[4], Alessandra Chesi[4], Jonathan Mitchell[4], Joseph Kindler[4], Matthew Johnson[4], James Pippin[4], Hakon Hakonarson[4], Babette Zemel[4], Struan Grant[4], Heidi Kalkwarf[5], Joan Lappe[6], Vicente Gilsanz[7], John Shepherd[8], Sharon Oberfield[9]. [1]Childrens Hospital of Philadelphia, United States, [2]University of Michigan, United States, [3]University of Pennsylvania, United States, [4]Children's Hospital of Philadelphia, United States, [5]Cincinnati Children's Hospital Medical Center, United States, [6]Creighton University, United States, [7]Children's Hospital Los Angeles, United States, [8]University of Hawaii, United States, [9]Columbia 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 Dowthwaite[1], Stephanie Kliethermes[2], Tamara Scerpella[2], Tim Cole[3]. [1]Upstate Medical University; Binghamton University, United States, [2]University of Wisconsin - Madison, United States, [3]University College London, United Kingdom

Disclosures: Jodi Dowthwaite, None

1:30 pm 1017 **Predictable Changes in Skeletal Maturation: An Assessment of Individual Trajectories**

*Melanie Boeyer[1], Emily Leary[1], Richard Sherwood[1], Dana Duren[1]. [1]University of Missouri - Columbia, United States

Disclosures: Melanie Boeyer, None

ASBMR 2019 Annual Meeting Young Investigator Award

1:45 pm
1018

Effect of Parathyroidectomy on Quality of Life: 10 Year Data from a Prospective Randomized Control Trial on Primary Hyperparathyroidism (the SIPH-study)

*Mikkel Pretorius[1], Karolina Lundstam[2], Mikael Hellstøm[2], Ansgar Heck[3], Kristin Godang[3], Jens Bollerslev[3], Kjersti Ringvoll Normann[4]. [1]Section of Specialized Endocrinology, Oslo University Hospital, Norway, [2]Department of Radiology, Institute of Clinical Sciences, The Sahlgrenska Academy at the University of Gothenburg, Sahlgrenska University Hospital, Sweden, [3]Section of Specialized Endocrinology, Oslo University Hospital, Norway, [4]Faculty 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. Bilezikian[1], Henry Bone[2], Bart L. Clarke[3], Douglas Denham[4], Hak-Myung Lee[5], Nicole Sherry[5], Michael A. Levine[6], Michael Mannstadt[7], Munro Peacock[8], Jeffrey Rothman[9], Dolores M. Shoback[10], Tamara J. Vokes[11], Mark L. Warren[12], Nelson B. Watts[13]. [1]Division of Endocrinology, College of Physicians and Surgeons, Columbia University, United States, [2]Michigan Bone and Mineral Clinic, PC, United States, [3]Mayo Clinic Division of Endocrinology, Diabetes, Metabolism, and Nutrition, United States, [4]Clinical Trials of Texas, Inc., United States, [5]Shire Human Genetic Therapies, Inc., a member of the Takeda group of companies, United States, [6]Division of Endocrinology and Diabetes and Center for Bone Health, Children's Hospital of Philadelphia, United States, [7]Endocrine Unit, Massachusetts General Hospital and Harvard Medical School, United States, [8]Department of Medicine, Division of Endocrinology, Indiana University School of Medicine, United States, [9]University Physicians Group – Research Division, United States, [10]Endocrine Research Unit, San Francisco Veterans Affairs Medical Center, Department of Medicine, University of California, United States, [11]Section of Endocrinology, University of Chicago Medicine, United States, [12]Endocrinology and Metabolism, Physicians East, PA, United States, [13]Osteoporosis 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 Jensen[1], Christine Hjort Andreassen[1], mette lorenzen[1], Anne Jørgensen[1], Ebbe Eldrup[2], Simone Theilade[2]. [1]Rigshospitalet, Denmark, [2]herlev 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 Wee[1], Madelyn Lorenz[2], Yusuf Bekirov[2], Erica Scheller[2], Mark Jacquin[3]. [1]Department of Reconstructive Sciences, UConn Health, United States, [2]Department of Medicine, Division of Bone and Mineral Diseases, Washington University School of Medicine, United States, [3]Department 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 Shochat[1], David Karasik[1], Zhiying Wang[2], Chenglin Mo[2], Jian Huang[3], Marco Brotto[4]. [1]Azrieli Faculty of Medicine, Bar-Ilan University, Israel, [2]College of Nursing&Health Innovation, University of Texas at Arlington, United States, [3]College of Nursing & Health Innovation, University of Texas at Arlington, United States, [4]College of Nursing&Health Innovation, University of Texas at Arlington, United States
Disclosures: Chen Shochat, None

3:15 pm 1023 **Bone-derived sclerostin regulates Pdgfrα+ adipoprogenitor cell differentiation.**
*Soohyun Kim[1], Lei Wang[1], Mei Wan[1], Ryan Riddle[1], Hao Da[2]. [1]Johns Hopkins University School of Medicine, United States, [2]Johns 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 Pierce[1], Kanglun Yu[1], Rachel Roberts[1], Vivek Choudhary[1], Wendy Bollag[1], Xingming Shi[1], Carlos Isales[1], William Hill[2], Mark Hamrick[3], Meghan McGee-Lawrence[3]. [1]Augusta University, United States, [2]Medical University of South Carolina, United States, [3]Medical College of Georgia, Augusta University, United States
Disclosures: Jessica Pierce, None

3:45 pm 1025 **Deletion of PPARγ in Mesenchymal Lineage Cells Protects Against Aging-Induced Cortical but Not Trabecular Bone Loss in Mice**
*Jay Cao[1], Kehong Ding[2], Raysa Rosario[2], Yun Su[2], Yonggang Bao[2], Meghan McGee Lawrence[2], Mark Hamrick[2], Carlos Isales[2], Xing-Ming Shi[3]. [1]USDA ARS Grand Forks Human Nutrition Research Center, United States, [2]Augusta University, United States, [3]Medical 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-κB transrepression of preosteoclast PDGF-BB transcription in young mice

*Yi Peng[1], Janet Crane[1], Xu Cao[1], Yusheng Li[2], Jianxi Zhu[2], Shan Lv[3], Song Wu[4]. [1]Johns Hopkins University School of Medicine, United States, [2]Xiangya Hospital of Central South University, China, [3]The First Hospital Affiliated to Nanjing Medical University, China, [4]The 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 Nagata[1], Yasuo Imanishi[1], Daichi Miyaoka[1], Noriyuki Hayashi[1], Masanori Emoto[1], Masaaki Inaba[1]. [1]Osaka City University Graduate School of Medicine, Department of Metabolism, Endocrinology, and Molecular Medicine, Japan

Disclosures: Yuki Nagata, None

ASBMR 2019 Annual Meeting Young Investigator Award

3:15 pm
1028

Structural Basis of Activation and Sustained Signaling by the PTH Receptor

*Ieva Sutkeviciute[1], Lisa J. Clark[1], Jean-Pierre Vilardaga[1], Thomas J. Gardella[2], Ming-Wei Wang[3], Yan Zhang[4], H. Eric Xu[5]. [1]Laboratory for GPCR Biology, Department of Pharmacology and Chemical Biology, School of Medicine, University of Pittsburgh, United States, [2]Endocrine Unit, Massachusetts General Hospital, United States, [3]The CAS Key Laboratory of Receptor Research, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, China, [4]Department of Biophysics, and Department of Pathology of Sir Run Run Shaw Hospital, Zhejiang University School of Medicine, China, [5]Center 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 Castro[1], Maureen Omeara[1], Janaina da Silva Martins[1], Daniel Brooks[1], Michael Bruce[1], Mary Bouxsein[1], Shigeki Nishimori[1], Henry Kronenberg[1], Harald Jueppner[1], Thomas Gardella[1], Marc Wein[1], Hiroshi Noda[2], Murat Cetinbas[3], Ruslan Sadreyev[3], Ugur Ayturk[4], Marc Foretz[5]. [1]MGH Endocrine Unit, United States, [2]Chugai Pharamceuticals, Japan, [3]MGH Department of Molecular Biology, United States, [4]Hospital for Special Surgery, United States, [5]Institut 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 Sato[1], Meloney Cregor[1], David L Halladay[1], Karyn A Esser[2], Munro Peacock[3], Monte S Willis[4], Teresita M Bellido[5]. [1]Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, [2]Department of Physiology and Functional Genomics, University of Florida College of Medicine, United States, [3]Department of Medicine, Division of Endocrinology, Indiana University School of Medicine, United States, [4]Indiana Center for Musculoskeletal Health, University of Indiana School of Medicine, United States, [5]Department 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 Hernandez[1], Ashley Torres[1], Cameron Aubin[1], Floor Lambers[1], Marysol Luna[1], Adwait Trikanad[2], Pablo Zavattieri[2], Clare Rimnac[3]. [1]Cornell University, United States, [2]Purdue University, United States, [3]Case 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 Friedman[1], Yue Zhang[1], Camilla Reina Maroni[1], Henry Donahue[1], Abdullah Abood[2], Charles Farber[2]. [1]Virginia Commonwealth University, United States, [2]University 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 Chlebek[1], F. Patrick Ross[2], Marjolein van der Meulen[3]. [1]Cornell University, United States, [2]Hospital for Special Surgery, United States, [3]Cornell 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 Miyagawa[1], Noriyoshi Kurihara[1], Jolene J. Windle[2], G. David Roodman[3]. [1]Medicine/Hematology-Oncology; Indiana University, United States, [2]Human and Molecular Genetics, Virginia Commonwealth University, United States, [3]Medicine/Hematology-Oncology; Indiana University, Roudebush VA Medical Center, United States

Disclosures: Kazuaki Miyagawa, None

ASBMR 2019 Annual Meeting Young Investigator Award

3:45 pm
1035

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

*Whitney Bullock[1], April Hoggatt[1], Daniel Horan[1], Andrew Elmendorf[1], Amy Sato[1], Teresita Bellido[1], Fredrick Pavalko[1], Alexander Robling[1], Gabriela Loots[2]. [1]Indiana University, United States, [2]Lawrence 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 Imel[1], Michael P. Whyte[2], Craig Munns[3], Anthony A. Portale[4], Leanne Ward[5], Ola Nilsson[6], Jill H. Simmons[7], Raja Padidela[8], Noriyuki Namba[9], Hae Il Cheong[10], Wolfgang Högler[11], Meng Mao[12], Chao-Yin Chen[12], Alison Skrinar[12], Javier San Martin[12], Francis Glorieux[13]. [1]Indiana University School of Medicine, United States, [2]Shriners Hospitals for Children, United States, [3]The Children's Hospital at Westmead, Australia, [4]University of California, San Francisco, United States, [5]University of Ottawa, Canada, [6]Karolinska Institutet, Sweden, [7]Vanderbilt University School of Medicine, United States, [8]Royal Manchester Children's Hospital, United Kingdom, [9]Osaka Hospital, Japan Community, Healthcare Organization and Osaka University Graduate School of Medicine, Japan, [10]Seoul National University Children's Hospital, Republic of Korea, [11]Johannes Kepler University Linz, Austria, [12]Ultragenyx Pharmaceutical Inc., United States, [13]Shriners 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. Carpenter[1], Wolfgang Högler[2], Erik A. Imel [3], Anthony A. Portale[4], Annemieke Boot[5], Agnès Linglart[6], Raja Padidela[7], William Van't Hoff[8], Meng Mao[9], Alison Skrinar[9], Mary Scott Roberts[9], Javier San Martin[9], Michael P. Whyte[10]. [1]Yale University School of Medicine, United States, [2]Johannes Kepler University Linz, Austria, [3]Indiana University School of Medicine, United States, [4]University of California, San Francisco, United States, [5]University of Groningen, Netherlands, [6]APHP Hôpital Bicêtre Paris Sud, France, [7]Royal Manchester Children's Hospital, United Kingdom, [8]Great Ormond Street Hospital, United Kingdom, [9]Ultragenyx Pharmaceutical Inc., United States, [10]Shriners 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

ASBMR 2019 Annual Meeting Young Investigator Award

3:15 pm
1038

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 Botman[1], J. Coen Netelenbos[1], E. Marelise W. Eekhoff[1], Eduardo Forleo Neto[2], Gary Herman[2], Scott J. Mellis[2], Melissa Simek-Lemos[2], Andrew J. Rankin[2], Dinko González Trotter[2], Pieter G.H.M. Raijmakers[3], Maqsood Yaqub[3], Adriaan A. Lammertsma[3], Aris N. Economides[4], Eduardo Forleo Neto[5], Gary Herman[5], Scott J. Mellis[5], Melissa Simek-Lemos[5], Andrew J. Rankin[5], Dinko González Trotter[5]. [1]Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Internal Medicine section Endocrinology, Amsterdam Bone Center, Amsterdam Movement Sciences, the Netherlands, Netherlands, [2]Regeneron Pharmaceuticals, Inc., New York, United States of America, United States, [3]Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Radiology and Nuclear Medicine, the Netherlands, Netherlands, [4]Regeneron Pharmaceuticals, Inc., New York, United States of America, United States, [5]Regeneron Pharmaceuticals, Inc., New York, United States of America, Netherlands

Disclosures: Esmée Botman, None

ASBMR 2019 Fund for Research and Education Young Investigator Award

3:30 pm
1039

Evolution of early Paget's disease in SQSTM1 mutation carriers: baseline analysis of the ZiPP study

*Owen Cronin[1], Deepak Subedi[1], Laura Forsyth[1], Kirsteen Goodman[1], Steff Lewis[1], Catriona Keerie[1], Allan Walker[1], Mary Porteous[1], Stuart Ralston[1], Roseanne Cetnarskyj[2], Ranganath Lakshminarayan[3], Peter Selby[4], Geeta Hampson[5], Rama Chandra[6], Shu Ho[7], Jon Tobias[8], Stephen Young-MIn[9], Malachi McKenna[10], Rachel Crowley[10], William Fraser[11], Jonathan Tang[11], Luigi Gennari[12], Rannucio Nuti[12], Maria Luisa Brandi[13], Javier Del Pino Montes[14], Jean-Pierre Devogelaer[15], Anna Durnez[16], Giancarlo Isaia[17], Marco di Stefano[17], Nuria Guanabens[18], Josep Blanch[19], Markus Seibel[20], John Walsh[21], Mark Kotowitz[22], Geoffrey Nicholson[23], Emma Duncan[23], Gabor Major[24], Anne Horne[25], Nigel Gilchrist[26]. [1]University of Edinburgh, United Kingdom, [2]University of Dundee, United Kingdom, [3]University of Liverpool, United Kingdom, [4]University of Manchester, United Kingdom, [5]St Thomas Hospital, United Kingdom, [6]KIng's College Hospital, United Kingdom, [7]Robert Jones and Agnes Hunt Orthopaedic Hospital, United Kingdom, [8]University of Bristol, United Kingdom, [9]Queen Alexandra Hospital, United Kingdom, [10]University College Dublin, Ireland, [11]University of East Anglia, United Kingdom, [12]University of Siena, Italy, [13]University Hospital of Careggi, Italy, [14]University of Salamanca, Spain, [15]Clinic Universitaire Saint-Luc, Belgium, [16]Clinic Universitaires Saint-Luc, Belgium, [17]University of Turin, Italy, [18]University of Barcelona, Spain, [19]Hospital del Mar, Spain, [20]Concord Hospital, Australia, [21]University of Western Australia, Australia, [22]Barwon Health, Australia, [23]University of Queensland, Australia, [24]Royal Newcastle Centre, Australia, [25]University of Auckland, New Zealand, [26]Princess 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 Willie[1], Elizabeth A Zimmermann[1], Francis H Glorieux[1], Ian Hodgson[2], Anthony Hall[2], Alistair MacKinnon[2], Muhammed K Javaid[3], Jay Shapiro[4]. [1]Shriners Hospital for Children, Canada, [2]Mereo BioPharma Group plc, United Kingdom, [3]Medical Sciences Division, University of Oxford, United Kingdom, [4]Kennedy 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

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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 Lötvall, 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 Universitaet 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
Disclosures: 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
Disclosures: 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

Time/Event/Location

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**

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)**
- **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

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 Courbon[1], Connor Francis[1], Claire Gerber[1], Samantha Neuburg[1], Maralee Capella[1], Xueyan Wang[1], Aline Martin[1], Valentin David[1]. [1]Division 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 Li[1], Li Han[1], Intawat Nookaew[1], Erin Mannen[1], Maria Almeida[1], Jinhu Xiong[1], Matthew Silva[2]. [1]University of Arkansas for Medical Sciences, United States, [2]Department 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 Ponzetti[1], Argia Ucci[1], Antonio Maurizi[1], Annamaria Teti[1], Nadia Rucci[1]. [1]University 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. Noonan[1], Erica L. Clinkenbeard[1], Pu Ni[1], Samantha P. Tippen[1], William R. Thompson[1], Matthew R. Allen[1], Kenneth E. White[1]. [1]Indiana 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 TNFα and IL-1β Signaling
*Wenyu Fu[1], Shuya Wang[1], Ronghan Liu[1], Wenhao Song[1], Chuanju Liu[1]. [1]New 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 LeBoff[1], Sharon Chou[1], Elle Murata[1], Nancy Cook[1], Samia Mora[1], I-Min Lee[1], Julie Buring[1], JoAnn Manson[1]. [1]Brigham & 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 Kendler[1], Arkadi Chines[2], Shuang Huang[2], Robert Kees Stad[2], Patricia Clark[3], Peter R Ebeling[4], Michael McClung[5], Yumie Rhee[6], Arkadi Chines[7], Shuang Huang[7], Robert Kees Stad[7], Nick Freemantle[8]. [1]University of British Columbia, Canada, [2]Amgen Inc., United States, [3]Hospital Infantil de Mexico Federico Gómez and National University of Mexico, Mexico, [4]Monash University, Australia, [5]Oregon Osteoporosis Center, United States, [6]Yonsei University College of Medicine, Republic of Korea, [7]Amgen Inc., Switzerland, [8]University 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 Tsai[1], Natalie David[1], Grace Sassana[1], Benjamin Leder[1]. [1]Massachusetts 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. Eriksen[1], Roland Chapurlat[2], Pascale Chavassieux [2], Rogely Boyce[3], Stephane Horlait[3], Yifei Shi[3], Rachel B. Wagman[3], Jacques P. Brown[4], Rogely Boyce[5], Stephane Horlait[5], Yifei Shi[5], Rachel B. Wagman[5], Cesar Libanati[6]. [1]Department of Clinical Endocrinology, Oslo University Hospital and Institute of Clinical Medicine Oslo University, Norway, [2]INSERM UMR 1033, Université de Lyon, France, [3]Amgen Inc., United States, [4]CHU de Quebec Research Centre and Laval University, Canada, [5]Amgen Inc., France, [6]UCB 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 Brown[1], Arkadi Chines[2], Wenjing Yang[2], Roland Chapurlat[3], Joseph Foldes[4], Xavier Nogues[5], Roberto Civitelli[6], Tobias De Villiers[7], Fabio Massari[8], Cristiano Zerbini[9], Chris Recknor[10], Cesar Libanati[11]. [1]Laval University, Canada, [2]Amgen Inc., United States, [3]INSERM UMR 1033, University of Lyon, France, [4]Hadassah Hebrew University Medical Center, Israel, [5]5IMIM Institut Hospital del Mar d'Investigacions Mèdiques, Spain, [6]Washington University School of Medicine, United States, [7]Stellenbosch University, South Africa, [8]Instituto de Investigaciones Metabólicas, Argentina, [9]Centro Paulista de Investigação Clinica, Brazil, [10]United Osteoporosis Centers, United States, [11]UCB 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
1051 **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 Weivoda[1], Chee Kian Chew[2], David Monroe[3], Elizabeth Atkinson[3], Josh Farr[3], Brianne Thicke[3], Ming Ruan[3], Amanda Tweed[3], Brittany Eckhardt[3], Louise McCready[3], Jennifer Geske[3], Robert Rizza[3], Adrian Vella[3], Aleksey Matveyenko[3], Matthew Drake[3], Bart Clarke[3], Merry Jo Oursler[3], Sundeep Khosla[3], Moustapha Kassem[4], Thomas Andersen[4].
[1]University of Michigan, United States, [2]Tan Tock Seng Hospital, Singapore, [3]Mayo Clinic, United States, [4]University 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 Chougule[1], Sudipta Baroi[1], Piotr Czernik[1], Beata Lecka-Czernik[1], Vipula Kolli[2], Peng Loh[2]. [1]University of Toledo College of Medicine and Life Sciences, United States, [2]Eunice 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 Leanza[1], Francesca Fontana[2], Yael Alippe[2], Seung-Yon Lee[2], Maria Remedi[2], Nicola Napoli[2], Roberto Civitelli[2], Rocky Strollo[3], Paolo Pozzilli[3]. [1]Campus Bio-Medico University of Rome, Italy/ Washington University in St Louis, Italy, [2]WASHINGTON UNIVERSITY IN ST. LOUIS, United States, [3]Campus 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 Shikhel[1], Ioanna Mosialou[1], Ery Petropoulou[1], Na Luo[1], Nyanza Rothman[1], Stavroula Kousteni[1], Mishaela Rubin[2], Bertrand Cariou[3], Mathieu Wargny[3], Elisabeth Rendu[4], Cyrille Confavreux[4]. [1]Department of Physiology and Cellular Biophysics, Columbia University Medical Center, United States, [2]Department of Medicine-Endocrinology, Columbia University Medical Center, New York, NY, United States, United States, [3]Institut du thorax, INSERM UMR 1087/CNRS UMR 6291, CHU de Nantes, Université de Nantes, France, [4]INSERM 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 Petropoulou[1], Steven Shikhel[1], Ioanna Mosialou[1], Stavroula Kousteni[1], Lihong Hao[2], Sue Shapses[2], Fabiana Bahna[3], Lawrence Shapiro[3], Jongho Kim[4], Patrick Carberry[4], Akiva Mintz[4], J. John Mann[4], Norman Simpson[5], Mihran Bakalian[5], Suham Kassir[6], Mark D. Underwood[6], Christina M. May[7], Matthew J. Jorgensen[7], Kiran Kumar Solingapuram Sai[8], Cyrille B. Confavreux[9], Blandine Laferrere[10], Mishaela Rubin[11]. [1]Department of Physiology and Cellular Biophysics, Columbia University Medical Center, United States, [2]The Rutgers Center for Lipid Research, New Jersey Institute for Food, Nutrition, and Health, Rutgers University, United States, [3]Department of Biochemistry and Molecular Biophysics, Columbia University, United States, [4]Department of Radiology, Columbia University Medical Center, United States, [5]Department of Psychiatry, Columbia University Medical Center, United States, [6]Molecular Imaging and Neuropathology Division, New York State Psychiatric Institute, United States, [7]Department of Pathology, Section on Comparative Medicine, Wake Forest School of Medicine, United States, [8]Department of Radiology, Wake Forest School of Medicine, United States, [9]INSERM UMR1033-Université de Lyon, France, [10]New York Obesity Nutrition Research Center, Columbia University, United States, [11]Department 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 Kushwaha[1], Ryan C Riddle[1], Soohyun P Kim[2], Conor Beil[2]. [1]Johns Hopkins University, School of Medicine, United States, [2]Johns 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

Saturday

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 LeBoff[1], Sharon Chou[1], Elle Murata[1], Nancy Cook[1], Samia Mora[1], I-min Lee[1], Julie Buring[1], JoAnn Manson[1], Peggy Cawthon[2]. [1]Brigham and Women's Hospital, United States, [2]UCSF, 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 Weaver[1], Janet Tooze[1], Stephen Kritchevsky[1], Denise Houston[1], Jane Cauley[2], Douglas Bauer[3], Fran Tylavsky[4]. [1]Wake Forest University School of Medicine, United States, [2]University of Pittsburgh, United States, [3]University of California San Francisco, United States, [4]University 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 Hughes[1], Kristin Popp[1], Katelyn Guerriere[1], Kathryn Taylor[1], Ronald Matheny[1], Stephen Foulis[1], Mary Bouxsein[2]. [1]Military Performance Division, United States Army Research Institute of Environmental Medicine, United States, [2]Center 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. Koltun[1], Emily A. Southmayd[1], Rebecca Mallinson[1], Nancy I. Williams[1], Mary Jane De Souza[1]. [1]Pennsylvania 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 Leslie[1], John Schousboe[2], Suzanne Morin[3], Patrick Martineau[4], Lisa Lix[5], Helena Johansson [6], Eugene McCloskey[7], Nicholas Harvey[8], John Kanis[9]. [1]University of Manitoba, Canada, [2]Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US; University of Minnesota, Minneapolis, US, United States, [3]McGill University, Montreal, Canada, Canada, [4]University of Manitoba, Winnipeg, Canada; Harvard Medical School, Boston, US, Canada, [5]University of Manitoba, Winnipeg, Canada, Canada, [6]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK;) Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, [7]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, [8]MRC 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, [9]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK; Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, United Kingdom
Disclosures: William Leslie, None

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. Kiel[1], Timothy Tsai[1], Ilean Isaza[1], Marian T. Hannan[1], Thomas Travison[1], Brett Allaire[2], Mary Bouxsein[2], Ching-Ti Liu[3]. [1]Marcus Institute for Aging Research, United States, [2]Beth Israel Deaconess Medical Center, United States, [3]Boston University School of Public Health, United States

Disclosures: Douglas P. Kiel, None

CONCURRENT ORALS: OSTEOBLASTS

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

ASBMR 2019 Annual Meeting Young Investigator Award

4:15 pm
1063

YAP and TAZ mediate osteoprogenitor mobilization for primary ossification center development

*Joseph Collins[1], Nathaniel Dyment[1], Joel Boerckel[1]. [1]University 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 Qi[1], Li Wang[1], Han Kyoung Choi[1], Laurie McCauley[1], Fei Liu[1], Jian Pan[2], Jun-Lin Guan[3]. [1]University of Michigan School of Dentistry, United States, [2]West China College of Stomatology, Sichuan University, China, [3]University 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 Mohamed[1], Chunxi Ge[1], Abdul-Aziz Binreyes[1], Renny Franceschi[1]. [1]UNIVERSITY 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 Hojo[1], Shinsuke Ohba[1], Akira Yamakawa[2], Ung-il Chung[2], Qiuyu Guo[3], Xinjun He[3], Andrew McMahon[3], Taku Saito[4], Shoko Onodera[5], Toshifumi Azuma[5]. [1]Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, The University of Tokyo, Japan, [2]Department of Bioengineering, Graduate School of Engineering, The University of Tokyo, Japan, [3]Department of Stem Cell Biology and Regenerative Medicine, Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research, United States, [4]Orthopaedic Surgery, Graduate School of Medicine, The University of Tokyo, Japan, [5]Department of Biochemistry, Tokyo Dental College, Japan

Disclosures: Hironori Hojo, None

ASBMR 2019 Annual Meeting Young Investigator Award

5:15 pm
1067

Mitochondrial long-chain fatty acid b-oxidation is required for Wnt-mediated increases in bone volume

*Megan C. Moorer[1], Conor Beil[1], Soohyun Kim[1], Priyanka Kushwaha[1], Ryan Riddle[1]. [1]Johns 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 Cawley[1], Jinhu Xiong[1], Ryan Macleod[1], Igor Gubrij[1], Yu Liu[1], Robin Mulkey[1], Michela Palmieri[1], Joseph Goellner[1], Charles O'Brien[1]. [1]University 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 Kim[1], Li-Yung Lui[2], Jane Cauley[3], Kristine Ensrud[4], Eric Orwoll[5], Marcia Stefanick[6], Steve Cummings[7]. [1]San 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, [2]San Francisco Coordinating Center, Research Institute, CPMC, CA, USA, United States, [3]Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA, USA, United States, [4]Center 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, [5]Oregon Health & Science University, Portland, OR, USA, United States, [6]Stanford Prevention Research Center, School of Medicine, Stanford University, Palo Alto, CA, USA, United States, [7]San 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 Nilsson[1], Daniel Sundh[1], Lisa Johansson[1], Dan Mellström[1], Mattias Lorentzon[1]. [1]Geriatric 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 Vilaca[1], Syazrah Salam[1], Richard Eastell[1], Marian Schini[2], Sue Harnan[3], Anthea Sutton[4], Edith Poku[5], Steve Cummings[6]. [1]Academic Unit of Bone Metabolism The University of Sheffield , United Kingdom, [2]Academci Unit of Bone Metabolism The University of Sheffield , United Kingdom, [3]Health Economics and Decision Science School of Health and Related Research (ScHARR) The University of Sheffield, United Kingdom, [4]Health Economics and Decision Science School of Health and Related Reseach (ScHARR) The University of Sheffield , United Kingdom, [5]Health Economics and Related Research School od Health and Related Research (ScHARR) The University of Sheffield , United Kingdom, [6]University 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 Crabtree[1], Michael Machin[2], Eleni Kariki[2], Raja Padidela[3], Imelda Hughes[3], Zulf Mughal[3], Michael Machin[4], Eleni Kariki[4], Nicholas Shaw[5]. [1]Birmingham Women's and Children's Hospital NHS Foundation Trust, United Kingdom, [2]Central Manchester University Hospitals NHS Foundation Trust, United Kingdom, [3]Royal Manchester Children's Hospital, United Kingdom, [4]Central Manchester University Hospitals NHS Foundation Trust, United Arab Emirates, [5]Birmingham Women's and Children's NHS Foundation Trust, United Kingdom

Disclosures: Nicola Crabtree, None

ASBMR 2019 Annual Meeting Young Investigator Award

5:15 pm
1073

Multiple Sclerosis and Fracture Risk: A Mendelian Randomization Study

*Sohyun Jeong[1], Yi-Hsiang Hsu[2]. [1]Marcus Institute at Hebrew SeniorLIfe and Harvard Medical School, United States, [2]1.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 Obunwale[1], Richard Sloane[1], Carl Pieper[1], Richare Lee[1], Kenneth Lyles[1], Colon-Emeric Cathleen[1], Robert Adler[2]. [1]Duke University, United States, [2]Hunter 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

Time/Event/Location

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**

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

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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 Morin[1], Angel M Ong[1], Hope A Weiler[1], Elham Rahme[1], David Goltzman[1], Styliani S Daskalopoulou[1], Michelle Wall[2], Claudie Berger[2], Shubhabrata Das[3], Angela M Cheung[3]. [1]McGill University, Canada, [2]Research Institute of the McGill University Health Centre, Canada, [3]University 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 Billington[1], Lauren Burt[1], Ryan Plett[1], Steven Boyd[1], David Hanley[1], Marianne S Rose[2]. [1]University of Calgary, Canada, [2]Alberta 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. Insogna[1], Anthony A. Portale[2], Farzana Perwad[2], Karine Briot[3], Erik A. Imel[4], Peter Kamenický[5], Thomas Weber[6], Pisit Pitukcheewanont[7], Hae Il Cheong[8], Suzanne Jan de Beur[9], Yasuo Imanishi[10], Nobuaki Ito[11], Robin Lachmann[12], Hiroyuki Tanaka[13], Lin Zhang[14], Alison Skrinar[14], Linda Rees[14], Javier San Martin[14], Thomas O. Carpenter[15]. [1]Yale School of Medicine, United States, [2]University of California, San Francisco, United States, [3]Centre d'Evaluation des Maladies Osseuses, Hôpital Cochin, France, [4]Indiana University School of Medicine, United States, [5]Université Paris-Sud, Le Kremlin Bicêtre, France, United States, [6]Duke University Medical Center, United States, [7]Children's Hospital Los Angeles, University of Southern California Keck School of Medicine, United States, [8]Seoul National University Children's Hospital, Republic of Korea, [9]Johns Hopkins University, United States, [10]Osaka City University Graduate School of Medicine, Japan, [11]The Tokyo University Hospital, Japan, [12]University College London Hospitals, United Kingdom, [13]Okayama Saiseikai General Hospital, Japan, [14]Ultragenyx Pharmaceutical Inc., United States, [15]Yale 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 Laurent[1], Sirui Zhou[1], Vincenzo Forgetta[1], J. Brent Richards[1], John P. Kemp[2], David M. Evans[2], Albena Pramatarova[3], Peter I. Croucher[4], Graham R. Williams[5], J. H. Duncan Bassett[5], David Goltzman[6]. [1]Lady Davis Institute, Jewish General Hospital, McGill University, Canada, [2]University of Queensland Diamantina Institute, Translational Research Institute, Australia, [3]McGill University and Genome Quebec Innovation Centre, Canada, [4]Garvan Institute of Medical Research, Australia, [5]Molecular Endocrinology Laboratory, Department of Medicine, Imperial College London, United Kingdom, [6]Research Institute of the McGill University Health Centre, Canada

Disclosures: Laetitia Laurent, None

10:45 am
1079

The Burden of Osteoporosis in the United States – A US Bone and Joint Initiative Report

*Nicole Wright[1], Kenneth Saag[2], Toby King[3], Silvia Watkins-Castillo[4], Ed Yelin[5], Marc Hochberg[6]. [1]Department of Epidemiology, University of Alabama at Birmingham, United States, [2]Division of Clinical Immunology and Rheumatology, University of Alabama at Birmingham, United States, [3]United States Bone and Joint Initiative, United States, [4]Unites States Bone and Joint Initiative, United States, [5]Division of Rheumatology and Institute for Health Policy Studies, University of California, San Francisco, United States, [6]Department 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
1080

An Antibody against Oxidized Phospholipids Prevents Age Related Bone Loss and Improves Glucose Metabolism in Mice

*Michela Palmieri[1], Teenamol Joseph[1], Stavros C Manolagas[1], Elena Ambrogini[1], Horacio Gomez-acevedo[2], Joseph L Witztum[3]. [1]Center 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, [2]Department of Biomedical Informatics, University of Arkansas for Medical Sciences, United States, [3]Department of Medicine, University of California San Diego, United States

Disclosures: Michela Palmieri, None

10:00 am
1081

Deletion of the Mitochondrial Deacetylase Sirt3 Suppresses Osteoclast Fusion and Increases Bone Mass in Old Mice

*Kimberly Krager[1], Aaron Warren[1], Nukhet Aykin-Burns[1], Maria Almeida[2], Ha-Neui Kim[2]. [1]University of Arkansas for Medical Sciences, United States, [2]University of Arkansas for Medical Sciences and Central Arkansas Veterans Healthcare System, United States

Disclosures: Kimberly Krager, None

10:15 am
1082

Old mice attenuate compression-induced intervertebral disc degeneration by suppressing Serpina1 via Wnt signaling

*Marina Ziegler Zieger[1], Christian Mueller[1], Nilsson Holguin[2]. [1]University of Massachusetts, United States, [2]IUPUI, United States

Disclosures: Marina Ziegler Zieger, None

10:30 am
1083

Immune Evasion, Apoptosis Resistance and Cellular Senescence in Tendon Aging and Pathology

*Anne Gingery[1], Yuki Saito[1], Takako Chikenji-Saito[1], Alyssa Vrieze[1], James Kirkland[1], Peter Amadio[1]. [1]Mayo Clinic, United States

Disclosures: Anne Gingery, None

10:45 am
1084

TRAF3 degradation in mesenchymal stem cells during aging promotes accumulation of RANKL- and TGFβ-expressing immune cells in bone marrow and causes bone loss

*Jinbo Li[1], Zhenqiang Yao[1], Xiangjiao Yi[1], Akram Ayoub[1], Rong Duan[1], Lianping Xing[1], Brendan Boyce[1]. [1]Department 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

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 Miller[1], Arkadi Chines[2], Cassandra E. Milmont[2], Judy Maddox[2], Ben-Hur Albergaria[3], Evelien Gielen[4], Bente Langdahl[5], Akimitsu Miyauchi[6], Mark Vanderkelen[7], Jonathan Adachi[8]. [1]Colorado Center for Bone Research at Panorama Orthopedics and Spine Center, United States, [2]Amgen Inc., United States, [3]Federal University of Espirito Santo, Brazil, [4]Gerontology and Geriatrics, Department of Chronic Diseases, Metabolism and Aging, KU Leuven & Center for Metabolic Bone Diseases, UZ Leuven, Belgium, [5]Aarhus University Hospital, Denmark, [6]Miyauchi Medical Center, Japan, [7]UCB Pharma, Belgium, [8]McMaster 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 Holdsworth[1], Peter Hall[1], Remi Okoye[1], Alison Wolfreys[1], Ian van Koeverden[2], Petra van der Kraak[2], Gerard Pasterkamp[2], Rogely Boyce[3], James Turk[3]. [1]UCB Pharma, United Kingdom, [2]UMC Utrecht, Netherlands, [3]Amgen 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 Farlay[1], Sébastien Rizzo[1], Louis-Georges Ste-Marie[2], Laëtitia Michou[3], Suzanne Morin[4], Shijing Qiu[5], Sudhaker D. Rao[5], Jacques P. Brown[6], Georges Boivin[7]. [1]INSERM UMR 1033, Univ Lyon, Universite Claude Bernard Lyon 1, France, [2]Université de Montreal, Canada, [3]Division of Rheumatology, Department of Medicine, CHU de Québec-Université Laval, Canada, [4]McGill University, Canada, [5]Bone & Mineral Research Laboratory, Henry Ford Health System, United States, [6]Division of Rheumatology, Department of Medicine, CHU de Québec-Université Laval, , Canada, [7]INSERM, UMR 1033, Univ Lyon, Universite 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 Pienkowski[1], Connie Wood[1], Hartmut Malluche[1]. [1]University of Kentucky, United States
Disclosures: David Pienkowski, None

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 Black[1], Ann Schwartz[1], Douglas Bauer[1], Jane Cauley[2], Kristine Ensrud[3], Nicola Napoli[4]. [1]University of California, San Francisco, United States, [2]University of Pittsburgh, United States, [3]Department of Medicine and Epidemiology & Community Health, University of Minnesota, United States, [4]Unit 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 Eastell[1], Eric Vittinghoff[2], Charles McCulloch[2], Douglas Bauer[2], Dennis Black[2], Li-Yung Liu[3], Fernando Marin[4], Anne de Papp[5], Rachel Wagman[6], Sundeep Khosla[7], Jane Cauley[8], Mary Bouxsein[9]. [1]University of Sheffield, United Kingdom, [2]University of California, San Francisco, United States, [3]California Pacific Medical Center , United States, [4]Eli Lilly and Company, United States, [5]Merck & Co., Inc., Kenilworth, NJ USA, United States, [6]Amgen Inc., Thousand Oaks, CA, United States, [7]Mayo Clinic Center for Clinical and Translational Science, United States, [8]Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, United States, [9]Center 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

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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 Ferrari[1], Kevin McAndrews[1], Jessica Nelson[1], James Bell[1], G. David Roodman[1], Teresita Bellido[1], Jesus Delgado-Calle[1], Venkatesan Srinivasan[2], Frank H. Ebetino[2], Robert K. Boeckman Jr[2]. [1]Indiana University School of Medicine, United States, [2]University 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. Clements[1], Lauren D. Holtslander[1], Courtney M. Edwards[1], Vera Todd[1], Samuel Dooyema[1], Rachelle W. Johnson[2]. [1]Vanderbilt University, United States, [2]Vanderbilt 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 Li[1], Shuying Yang[1]. [1]University 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 Aslan[1], Lea Hanna Doumit Sakr[1], Judith Luce[1], Rafailia Vakasiri[1], Claire-Sophie Devignes[1], Sylvain Provot[1], *Yetki Aslan[2], Lea Hanna Doumit Sakr[2], Judith Luce[2], Rafailia Vakasiri[2], Claire-Sophie Devignes[2], Sylvain Provot[2]. [1]INSERM U1132 And Paris Diderot University, France, [2]Inserm 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 Ricci[1], Sahil Mahajan[1], Roberta Faccio[1], Francesca Fontana[2], Roberto Civitelli[2], Danielle Ketterer[3]. [1]Washington University in St Louis - Orthopaedic Surgery, United States, [2]Washington University in St Louis - Internal Medicine, United States, [3]Washington 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 Samsa[1], Murali Mamida[1], Lindsay Bashur[1], Robin Elliott[1], Ricky Chan[1], David Danielpour[1], Guang Zhou[1]. [1]Case Western Reserve University, United States
Disclosures: William Samsa, None

Sunday

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 Yang[1], Haichun Pan[1], Masako Toda[1], Fei Liu[1], Yuji Mishina[1], Megumi Kitami[2], Mamoru Ishii[3], Robert Maxson[3], Yoshihiro Komatsu[4]. [1]Department of Biologic and Materials Sciences, School of Dentistry, University of Michigan, United States, [2]Department of Pediatrics, The University of Texas Medical School at Houston, United States, [3]Department of Biochemistry and Molecular Biology, Keck School of Medicine, University of Southern California, United States, [4]Department 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 Doherty[1], Archana Sanjay[1], Sanja Novak[1], Ivo Kalajzic[1], Jessica Lehoczky[2]. [1]UConn Health, United States, [2]Brigham and Women's Hospital, United States
Disclosures: Laura Doherty, None

3:15 pm
1099
Diabetes reduces regenerative capacity of periosteal progenitors
*Laura Doherty[1], Archana Sanjay[1], Ivo Kalajzic[1]. [1]UConn Health, United States
Disclosures: Laura Doherty, None

3:30 pm
1100

PDGFRβ Signaling Drives the Expansion, Recruitment and Blood Vessel Affinity of Skeletal Stem and Progenitor Cells for Bone Repair

*Anna-Marei Böhm[1], Naomi Dirckx[1], Robert J. Tower[1], Nicolas Peredo[1], Elena Nefyodova[1], Ruben Cardoen[1], Matthias Van Hul[1], Christa Maes[1], Sebastiaan Vanuytven[2], Koen Theunis[2], Thierry Voet[2], Volkhard Lindner[3]. [1]Laboratory of Skeletal Cell Biology and Physiology (SCEBP), Skeletal Biology and Engineering Research Center (SBE), KU Leuven, Belgium, [2]Laboratory of Reproductive Genomics, Department of Human Genetics, KU Leuven, Belgium, [3]Center 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 Pmepa1

*David Molstad[1], Margaret Meyer[1], Jennifer Westendorf [1], Elizabeth Bradley [1]. [1]Mayo 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 Matsushita[1], Noriaki Ono[1]. [1]University 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 Wang[1], Qinnan Yan[1], Yiran Zhao[1], Simin Lin[1], Chuanyue Wu[1], Huiling Cao[1], Yumei Lai[2]. [1]Department of Biology and Guangdong Provincial Key Laboratory of Cell Microenvironment and Disease Research, Southern University of Science and Technology, Shenzhen 518055, China, China, [2]Department 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 Morrell[1], X. Edward Guo[1], Samuel Robinson[2], Hua Zhu Ke[3], Gill Holdsworth[4]. [1]Columbia University, United States, [2]Columbia University , United States, [3]Angitia Biopharmaceuticals, China, [4]UCB 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. Wang[1], Fatemeh Mirzamohammadi[1], Daniel Rotter[1], Christian D. Castro Andrade[1], Henry M. Kronenberg[1], Marc N. Wein[1], Hironori Hojo[2], Melissa Fiscaletti[3], Craig Munns[4]. [1]Center for Skeletal Research, Endocrine Unit, Department of Medicine, Massachusetts General Hospital, Harvard Medical School, United States, [2]Center for Disease Biology and Integrative Medicine, The University of Tokyo Graduate School of Medicine, Japan, [3]Pediatric Department, Sainte-Justine University Hospital Centre, Canada, [4]Institute 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 Sato[1], Shiv Verma[1], Marc Wein[1], David Lagares[2]. [1]Endocrine Unit, Massachusetts General Hospital and Harvard Medical School, United States, [2]Center for Immunology and Inflammatory Diseases, Massachusetts General Hospital and Harvard Medical School, United States
Disclosures: Tadatoshi Sato, None

ASBMR 2019 Annual Meeting Young Investigator Award

3:45 pm
1107

Rapid lysosomal degradation of sclerostin in osteocytes following mechanical load
*Katrina Williams[1], Humberto Joca[1], James Lyons[1], Manasa Srikanth[1], Nicole Gould[1], Ricardo Feldman[1], Joseph Stains[1], Ramzi Khairallah[2], Christopher Ward[3]. [1]University of Maryland School of Medicine, United States, [2]Myologica, LLC, United States, [3]University 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 Williams[1], Uma Sankar[1], Anuradha Valiya Kambrath [1], Mavis Irwin [1], Nicholas Clough [1]. [1]Indiana 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 Wang[1], Jie Shen[1], Jun Ying[1], Regis O'Keefe[1]. [1]Washington University in St Louis, United States
Disclosures: Cuicui Wang, None

Sunday

4:45 pm 1110 **Calcium-sensing Receptors in Chondrocytes Are Required for Post-natal Bone Growth, Callus Maturation, and Fracture Healing in Mice**
*Zhiqiang Cheng[1], Alfred Li[1], Chia-Ling Tu[1], Christian Santa Maria[1], Amanda Herberger[1], Fuqing Song[1], Dolores Shoback[1], Wenhan Chang[1]. [1]Endocrine 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 Mamidi[1], William Samsa[2], Ricky Chan[3], Guang Zhou [4]. [1]Department of Orthopaedics, Case Western Reserve University., United States, [2]Department of Orthopaedics, Case Comprehensive Cancer, Case Western Reserve University., United States, [3]Institute for Computational Biology, Case Western Reserve University. , United States, [4]Department 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 Zhang[1], Zhengliang Luo[1], Patrick Massey[1], Barton Shane[1], Yufeng Dong[1], Bing Shu[2], Yongjun Wang[2]. [1]LSUHSC Orthopedics, United States, [2]Shanghai University of Traditional Chinese Medicine, China
Disclosures: Hao Zhang, None

5:30 pm 1113 **Lin28a reactivation during OA induces chondrocyte reprogramming by HMGA2**
*Yohan Jouan[1], Benoît Bardèche-Trystram[1], Joanna Sanna[1], Eric Hay[1], Augustin Latourte[2], Pascal Richette[2], Hang-Korgn Ea[2], Martine Cohen-Solal[2]. [1]Paris Diderot University, Inserm 1132, France, [2]Paris Diderot University, Inserm 1132, Hopital 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 Lee[1], Sun Yong Song[1], Yumie Rhee[1], Jeesoo Chae[2]. [1]Yonsei University College of Medicine, Republic of Korea, [2]Department 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 Maria[1], Liesbeth Vandenput[1], Claes Ohlsson[1], Ulrika Pettersson-Kymmer[2], Mattias Lorentzon[3], Dan Mellström[3], Magnus Karlsson[4]. [1]Centre for Bone and Arthritis Research, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, Sweden, [2]Clinical Pharmacology, Department of Pharmacology and Clinical Neuroscience, Umea University, Umea, Sweden, Sweden, [3]Geriatric Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, Sweden, [4]Clinical 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 Liu[1], Hong Wen Deng[1], Hui Shen[2], Greenbaum Jonathan[2], Kuan-Jui Su[2], Anqi Liu[2]. [1]Department of Biostatistics and Bioinformatics, Tulane University, New Orleans 70112, LA, USA, United States, [2]Department of Biostatistics and Bioinformatics, Tulane University, United States

Disclosures: Yong Liu, None

ASBMR 2019 Annual Meeting Young Investigator Award

5:15 pm
1117

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

*Sung Hye Kong[1], Jung Hee Kim[1], Chan Soo Shin[1], Daehwan Ahn[2], Buomsoo (Raymond) Kim[3], Karthik Srinivasan[3], Sudha Ram[3], Nam H. Cho[4]. [1]Department of Internal Medicine, Seoul National University College of Medicine, Republic of Korea, [2]Department of Operations, Information and Decisions, Wharton School, University of Pennsylvania, United States, [3]Department of Management Information Systems, Eller College of Management, University of Arizona, United States, [4]Department 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 Wu[1], Bibek Bhattarai[2], Fatma Nasoz[2]. [1]Department of Environmental & Occupational Health School of Public Health University of Nevada, Las Vegas, United States, [2]Department 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 Li[1], Mingcan Yu[1], Abdul Malik Tyagi[1], Jonathan Adam[1], Rheinallt M. Jones[1], Roberto Pacifici[1]. [1]School of Medicine, Emory University, United States

Disclosures: Jau-Yi Li, None

Sunday

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 Chen[1], Xiaoqing Hu[1], Guoping Wu[1], Dengshun Miao[1], David Goltzman[2]. [1]Nanjing Medical University, China, [2]McGill 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 Bleichman[1], Naphtali Savion[1], Shlomo Kotev-Emeth[1], Yankel Gabet[2]. [1]Department of Human Molecular Genetics and Biochemistry, Sackler Faculty of Medicine, Tel Aviv University, Israel, [2]Department 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 Low[1], Jeffery Nielsen[2], Gert Breur[2], Yava Jones-Hall[2], Cheyanne Woolwine[2], Jonathan Hicks[2], Philip Low[2]. [1]Purdue University, United States, [2]Purdue, 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 Schepper[1], Fraser Collins[1], Naiomy Rios-Arce[1], Narayanan Parameswaran[1], Laura McCabe[1], Laura Schafer[2], Rob Britton[2], Joeseph Gardinier[3]. [1]Michigan State University, United States, [2]Baylor College of Medicine, United States, [3]Henry 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 Shieh[1], Gail Greendale[1], Arun Karlamangla[1], Jane Cauley[2]. [1]UCLA, United States, [2]University of Pittsburgh, United States
Disclosures: Albert Shieh, None

4:45 pm 1125
Racial Disparities Exist in Outcomes Post Major Fragility Fractures
*Nicole Wright[1], Ligong Chen[1], Jeffrey Curtis[2], Kenneth Saag[2], Cynthia Brown[3], James Shikany[4]. [1]Department of Epidemiology, University of Alabama at Birmingham, United States, [2]Division of Clinical Immunology and Rheumatology, University of Alabama at Birmingham, United States, [3]Division of Gerontology, Geriatrics, and Palliative Care, University of Alabama at Birmingham, United States, [4]Division of Preventive Medicine, University of Alabama at Birmingham, United States
Disclosures: Nicole Wright, Amgen, Grant/Research Support

ASBMR 2019 Annual Meeting Young Investigator Award

5:00 pm
1126

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 Medicin, Sahlgrenska Academy, Gothenburg University and Skaraborgs Sjukhus Skövde, Sweden, Sweden, [2]Institute of Medicin, 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

Disclosures: Kristian Axelsson, None

ASBMR 2019 Annual Meeting Young Investigator Award

5:15 pm
1127

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

Disclosures: 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

Disclosures: Mohammed Almohaya, None

ASBMR TOWN HALL MEETING

6:00 pm - 7:00 pm **Orange County Convention Center W308**

ADULT BONE AND MINERAL WORKING GROUP

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

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 [1]Endocrinology and [2]Clinical Chemistry, St. Vincent's University Hospital, Dublin, and [3]UCD 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 E[1], Wong D [2], Cusano N [3], Mannstadt M[1],[4]. [1]Endocrine Unit, Massachusetts General Hospital, United States; [2]Sutter Health, United States; [3]Department of Medicine, Lenox Hill Hospital, United States; [4]Harvard Medical School, United States

8:45 **Raine Syndrome as a Rare Cause of Hypophosphatemia and Osteosclerosis in an Adult.**
Mamedova EO, Davtyan DA, Przhiyalkovskaya 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 N[1], Rhee Y[1]. [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 R [1], Pinedo-Villanueva R[1], Shine B[2], Partington K[3], Keshav S[4], Travis S[4], Javaid MK[1]. [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 A[1], Fu P[1], Schafer AL[1],[2], Shoback DM[1],[2]. [1]Division of Endocrinology and Metabolism, University of California, San Francisco, CA; [2]Endocrine 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, Ultragenyx 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**

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 Califoria, 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

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
Disclosures: 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
Disclosures: Will disclose relevant financial information on site

6:50 am **Hypoparathyroidism and Pregnancy**
Aliya Khan, MD, FRCPC, FACP, FACE
McMaster University, Oakville, Ontario, Canada
Disclosures: 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
Disclosures: 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**

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 McDonald[1], Weng Hua Khoo[1], Sindhu Mohanty[1], Rachael Terry[1], Ryan Chai[1], Julian Quinn[1], Jessica Pettitt[1], Ya Xiao[1], Paul Baldock[1], Michael Rogers[1], Peter Croucher[1], Tri Phan[1], Pei Ying Ng[2], Nathan Pavlos[2], Mate Biro[3]. [1]Garvan Institute, Australia, [2]University of Western Australia, Australia, [3]UNSW, 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 Sun[1], Dong Yang[1], Jingyi Wu[1], Robert Linhardt[1], Xiaofang Wang[1], Yanlei Yu[2], Fuming Zhang[2]. [1]Department of Biomedical Sciences, Texas A&M University College of Dentistry, United States, [2]Department 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 Takahata[1], Kanta Wakamori[1], Chika Fujiwara[1], Eriko Nakamura[1], Mitsuki Urushizaki[1], Ayaka Kimura[1], Kayon Yu[1], Kenji Hata[1], Tomohiko Murakami[1], Riko Nishimura[1]. [1]Osaka 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 Zhong[1], Robert J Tower[1], Lutian Yao[1], Yulong Wei[1], Jihwan Park[1], Zhen Miao[1], Rojeshi Shrestha[1], Luqiang Wang[1], Wei Yu[1], Yejia Zhang[1], Yanqing Gong[1], Jaimo Ahn[1], Patrick Seale[1], Katalin Susztak[1], Mingyao Li[1], Chider Chen[1], Ling Qin[1], Nicholas Holdreith[2], Wei Tong[3], Fanxin Long[4]. [1]University of Pennsylvania, United States, [2]Children's Hospital of Philadelphia and University of Pennsylvania, United States, [3]hildren's Hospital of Philadelphia and University of Pennsylvania, United States, [4]The 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 α2δ1 voltage sensitive calcium channel subunit impairs skeletal strength and decreases both lean and fat masses.

*Christian S. Wright[1], Xin Yi[1], William R. Thompson[1], Artur Schneider[2], Molly Pederson[3], Mary C. Farach-Carson[4], Alexander G. Robling[5]. [1]Department of Physical Therapy, School of Health and Rehabilitation Sciences, Indiana University, United States, [2]Department of Physiology, College of Osteopathic Medicine, Marian University, United States, [3]School of Science, Indiana University-Purdue University, United States, [4]Department of Diagnostic and Biomedical Sciences, School of Dentistry, University of Texas, Health Science Center, United States, [5]Department 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 Kang[1], Wayne A. Cabral[1], Joan C. Marini[1], Aleksandra Ivovic[2], Richard M. Siegel[2], Smita Jha[3], Nadja Fratzl-Zelman[4], Zuoming Deng[5], Apratim Mitra[6], Ryan K. Dale[6], Eric P. Hanson[7], Eileen Lange[8], James Katz[8], Paul Roschger[9], Klaus Klaushofer[9], Timothy Bhattacharryya[10]. [1]Section on Heritable Disorders of Bone and Extracellular Matrix, NICHD, NIH, United States, [2]Immunoregulation Section, Autoimmunity Branch, NIAMS, NIH, United States, [3]Section on Congenital Disorders, Clinical Center, NIH, United States, [4]Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUVA Trauma Centre Meidling, 1st Medical Department Hanusch Hospital, Austria, [5]Biodata Mining and Discovery Section, Office of Science and Technology, NIAMS, NIH, United States, [6]Bioinformatics and Scientific Programming Core, NICHD, NIH, United States, [7]Immunodeficiency and Inflammation Unit, Autoimmunity Branch, NIAMS, NIH, United States, [8]Office of the Clinical Director, NIAMS, NIH, United States, [9]Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK, and AUVA Trauma Center Meidling, 1st Medical Department Hanusch Hospital, Austria, [10]Clinical 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 Scheiber[1], Akiko Suzuki[1], Motomi Enomoto-Iwamoto[1], Masahiro Iwamoto[1], Satoru Otsuru[1], Sergey Leikin[2]. [1]University of Maryland, Baltimore, School of Medicine, Department of Orthopaedics, United States, [2]Eunice 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. Russo[1], Wenping Song[1], Mitul Desay[1], Xiaoyou Ying[1], Lily Chai[1], Ann Byrne[1], Yves Sabbagh[1], Oxana Ibraghimov-Beskrovnaya[1], Stefano Zanotti[1]. [1]Sanofi, 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

Disclosures: 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 Schoo, Hong Kong, [3]School of Chinese Medicine, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong

Disclosures: 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

This activity is supported by educational funding from Baxter Healthcare Corporation

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

Disclosures: Pfizer,13

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 Ozgurel[1], Kevin McAndrews[1], David Halladay[1], Amy Yoshiko Sato[1], Meloney Cregor[1], Jessica Nelson[2], Teresita Bellido [3]. [1]Department of Anatomy and Cell Biology, Indiana University School of Medicine, Indianapolis, IN, Roudebush Veterans Administration Medical Center, Indianapolis, IN, United States, [2]Hematology/Oncology, Indiana University School of Medicine, Indianapolis, IN, United States, [3]Department 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 Johnson[1], Kirk McGilvray[1], Jeremiah Easley[1], Brad Nelson[1], Eileen Hackett[1], Ben Gadomski[1]. [1]Colorado 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 Herber[1], Patrick Ventura[1], Saul Villeda[1], Holly Ingraham[1], Thomas Ambrosi[2], Charles Chan[2], Nancy Lane[3]. [1]University of Califoria, San Francisco, United States, [2]Stanford University, United States, [3]University 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 Andrukhova[1], Nejla Latic[1], Judith Radloff[1], Svetlana Slavic[1], Lukas Endler[1], Sathish Murali[1], Jessica Bayer[1], Ute Zeitz[1], Ulrike Pfeiffenberger[1], Simone Tangermann[1], Sabine Lagger[1], Julia Wilflingseder[1], Lukas Kenner[1], Birgit Strobl[1], Reinhold Erben[1], Christoph Kornauth[2], Rainer Oberbauer[2], Dario Alessi[3]. [1]University of Veterinary Medicine Vienna, Austria, [2]Medical University Vienna, Austria, [3]University 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-weigh FGF2

*Liping Xiao[1], Donyell Williams[1], Marja Hurley[1]. [1]UConn 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 Saito[1], Monica Reyes[1], Harald Jüppner[1]. [1]Massachusetts 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 Scerpella[1], Jill Thein-Nissenbaum[1], Stephanie Kliethermes[1], Deena Weiss[2]. [1]University of Wisconsin, United States, [2]none, 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 Robinson[1], X. Edward Guo[1]. [1]Columbia 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 Goel [1], Diane Krueger [2], Gretta Borchardt [3], Neil Binkley [3]. [1]Division of Endocrinology, University of Wisconsin, United States, [2]Osteoporosis Research Program, United States, [3]Osteoporosis Research Program, United States

Disclosures: Heenam Goel, None

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 Lewis[1], Jonathan Hodgson[1], Wai Lim[2], Kun Zhu[2], Richard Prince[2], John Schousboe[3], Elizabeth Byrnes[4], Richard Woodman[5], Peter Thompson[6], Douglas Kiel[7]. [1]Edith Cowan University, Australia, [2]University of Western Australia, Australia, [3]Park Nicollet Osteoporosis Center and Institute for Research and Education, United States, [4]PathWest, Sir Charles Gairdner Hospital, Australia, [5]Flinders University, Australia, [6]Sir Charles Gairdner Hospital, Australia, [7]Hinda 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 Sølling[1], Torben Harsløf[1], Bente Lomholt Langdahl[1]. [1]Aarhus 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 Phu[1], Ebrahim Bani Hassan[1], Sara Vogrin[1], Ahmed Al Saedi[1], Gustavo Duque[1], Ben Kirk[2]. [1]Australian Institute for Musculoskeletal Science, The University of Melbourne, Australia, [2]Australian 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 Winter[1], Nathalie Bravenboer[1], Maaike Schilperoort[2], Jan Kroon[2], Joann Lim[2], Patrick Rensen[2], Sander Kooijman[2], Bjorn Busse[3], Kathrin Mletzko[3], Leo Ruijven van[4]. [1]Department of Medicine, Division of Endocrinology and Center for Bone Quality, Leiden University Medical Center & Einthoven Laboratory for Experimental Vascular Medicine, Netherlands, [2]Department of Medicine, Division of Endocrinology, Leiden University Medical Center & Einthoven Laboratory for Experimental Vascular Medicine, Netherlands, [3]Department of Osteology and Biomechanics (IOBM), University Medical Center Hamburg-Eppendorf, Germany, [4]6Department 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 Zarecki[1], Richard Eastell[1], Johannes Grillari[2], Matthias Hackl[3]. [1]University of Sheffield, United Kingdom, [2]Christian Doppler Laboratory on Biotechnology of Skin Aging; Ludwig Boltzmann Institute for Experimental and Clinical Traumatology; TAmiRNA GmbH, Austria, [3]TAmiRNA GmbH, Austria
Disclosures: Patryk Zarecki, None

ASBMR 2019 Annual Meeting Young Investigator Award

2:30 pm
1141

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

*Joan LLabre[1], Ruben Trujillo[1], Deepak Vashishth[1], Mariana Figueiro[2]. [1]Department of Biomedical Engineering, Center for Biotechnology and Interdisciplinary Studies, Rensselaer Polytechnic Institute, United States, [2]Lighting 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-Diez[1], Stavroula Kousteni[1], Junfei Zhao[2], Raul Rabadan[3]. [1]Columbia University, Dept. Physiology and Cell Biophysics, United States, [2]Columbia University, Dept. of Biomedical Informatics, United States, [3]Columbia University, Dept. of Systems Biology, United States
Disclosures: Marta Galan-Diez, None

Monday

ASBMR 2019 Annual Meeting Young Investigator Award

3:00 pm
1143

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

*Ahmed Elmansi[1], Dmitry Knodrikov[1], Nada Eisa[1], William Hill[1], Sudharsan Periyasamy-Thandavan[2], Alexandra Aguilar-Pérez[3], Brian Volkman[4], Carlos Isales[5], Sadanand Fulzele[5], Mark Hamrick[6], Meghan McGee-Lawrence[6], Jie Chen[7]. [1]Department of Pathology and Laboratory Medicine, Medical University of South Carolina, United States, [2]Georgia Cancer Center, Augusta University, Augusta, GA 30912, United States, [3]Department of Anatomy and Cell Biology, Indiana University School of Medicine in Indianapolis, IN, United States, [4]Biochemistry Department, Medical College of Wisconsin, Milwaukee, WI 53226, United States, [5]Department of Orthopaedic Surgery, Medical College of Georgia, Augusta University, Augusta, GA 30912, United States, [6]Cellular Biology and Anatomy, Medical College of Georgia, Augusta University, Augusta, GA 30912, United States, [7]Department 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

ASBMR 2019 Annual Meeting Young Investigator Award

2:00 pm
1144

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

*Gabriella Fioravanti[1], Phuong Hua[1], Ryan Tomlinson[1]. [1]Thomas 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 Li[1], Baoli qian[1], ling wang[1], MaCalus Hogan[1]. [1]University of Pittsburgh, United States

Disclosures: hongshuai Li, None

ASBMR 2019 Annual Meeting Young Investigator Award

2:30 pm
1146

Irisin Directly Regulates Osteoclastogenesis via αV Integrin Receptors In Vitro and In Vivo

*Eben Estell[1], Phuong Le[1], Yosta Vegting[1], Clifford Rosen[1], Hyeonwoo Kim[2], Bruce Spiegelman[2]. [1]Maine Medical Center Research Institute, United States, [2]Harvard Medical School, Dana-Farber Cancer Institute, United States

Disclosures: Eben Estell, None

ASBMR 2019 Annual Meeting Young Investigator Award

2:45 pm
1147

Interleukin-6 must signal in osteoblasts to favor adaptation to exercise

*Subrata Chowdhury[1], Logan Schulz[2], Paula Mera[3], Jens Brünin[4], Juan Hidalgo[5], Gerard Karsenty[6]. [1]Department of Genetics and Development, Columbia University Irving Medical Center, United States, [2]Department of Genetics and Development, United States, [3]Dept. Biochemistry and Physiology School of Pharmacy & Food Science, University of Barcelona, Spain, Spain, [4]3 Max Planck Institute for Metabolism Research, Germany, [5]4 Department of Cellular Biology, Physiology and Immunology Faculty of Biosciences, Universitat Autònoma de Barcelona, Spain, [6]Department of Genetics and Development, United States

Disclosures: Subrata Chowdhury, None

ASBMR 2019 Annual Meeting Young Investigator Award

3:00 pm
1148

Wnts produced by osteo-lineage cells are required for loading-induced bone formation in mice

*Lisa Lawson[1], Michael Brodt[1], Matthew Silva[1]. [1]Washington 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

ASBMR 2019 Annual Meeting Young Investigator Award

2:00 pm
1149

Molecular and cellular analyses of BMP-dependent coupling signals between osteoclasts and osteoblasts during bone remodeling

*Yuji Mishina[1], Maiko Omi[1]. [1]University of Michigan, School of Dentistry, Department of Biologic and Materials Sciences & Prosthodontics, United States

Disclosures: Yuji Mishina, None

ASBMR 2019 Annual Meeting Young Investigator Award

2:15 pm
1150

Diversity in Inflammatory Osteoclasts Contributes to the Modulation of Their Inflammatory Effect and Resorptive Function

*Maria-Bernadette Madel[1], Matthieu Rouleau[1], Antoine Boutin[1], Claudine Blin-Wakkach[1], Lidia Ibáñez[2], Christophe Hue[3], Henri-Jean Garchon[3], Isabelle Duroux-Richard[4], Florence Apparailly[4], Abdelilah Wakkach[5]. [1]LP2M, CNRS UMR7370, Université Côte d'Azur, Nice, France, France, [2]Department of Pharmacy, Cardenal Herrera-CEU University, Valencia, Spain, Spain, [3]INSERM U1173, Faculty of Health Sciences Simone Veil, Université de Versailles Saint-Quentin, Montigny-le-Bretonneux, France, France, [4]INSERM U1183, Institute for Regenerative Medicine and Biotherapies, Université de Montpellier, Montpellier, France, France, [5]LP2M, 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 Xu[1], Miaomiao Li[1]. [1]University at Buffalo, United States

Disclosures: Ding Xu, None

Monday

ASBMR 2019 Annual Meeting Young Investigator Award

2:45 pm
1152

Aging and menopause reprogram osteoclast precursors for aggressive bone resorption

*Anaïs MJ Møller[1], Jean-Marie Delaissé[2], Kent Søe[2], Jonna S. Madsen[3], Luisa M. Canto[4], Silvia R. Rogatto[4]. [1]Clinical Cell Biology, Lillebaelt Hospital, University of Southern Denmark, Denmark, [2]Clinical Cell Biology, Odense University Hospital, University of Southern Denmark, Denmark, [3]Department of Clinical Biochemistry and Immunology, Lillebaelt Hospital, Denmark, Denmark, [4]Department 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 Westhrin[1], Vlado Kovcic[1], Anders Sundan[1], Albert Bondt[2], Stephanie Holst[2], Zejian Zhang[2], Tobias Slørdahl[3], Anders Waage[4], Manfred Wuhrer[5], Therese Standal[6]. [1]Department of Cancer Research and Molecular Medicine, Faculty of Medicine, Norwegian University of Science and Technology (NTNU), Trondheim, Norway, [2]Leiden University Medical Center, Albinusdreef 2, 2333ZA Leiden, Netherlands, [3]IKOM, NTNU, Norway, [4]Department of Hematology, St.Olavs University Hospital, Trondheim, Norway, [5]dLeiden University Medical Center, Albinusdreef 2, 2333ZA Leiden, Netherlands, [6]Centre of Molecular Inflammation Research (CEMIR), NTNU, Trondheim, Norway

Disclosures: Marita Westhrin, 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 Leslie[1], Lisa Lix[1], John Schousboe[2], Suzanne Morin[3], Patrick Martineau[4], Helena Johansson[5], John Kanis[5], Eugene McCloskey[6], Nicholas Harvey[7]. [1]University of Manitoba, Winnipeg, Canada, Canada, [2]Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US; University of Minnesota, Minneapolis, US, United States, [3]McGill University, Montreal, Canada, Canada, [4]University of Manitoba, Winnipeg, Canada; Harvard Medical School, Boston, US, Canada, [5]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK; Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, United Kingdom, [6]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, [7]MRC 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 Johansson[1], Daniel Sundh[2], Mellström Dan[2], Anna Nilsson[3], Mattias Lorentzon[4]. [1]Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, Sweden, [2]Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, Sweden, [3]Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, [4]Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg and Geriatric Medicine Clinic, Sahlgrenska University Hospital, Mölndal, Sweden, Sweden

Disclosures: Lisa Johansson, None

ASBMR 2019 Annual Meeting Young Investigator Award

2:30 pm
1156

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

*Emmanuel Biver[1], Thierry Chevalley[1], René Rizzoli[1], Serge Ferrari[1], Elizabeth J Samelson[2], Laiji Yang[2], Marian T Hannan[2], Douglas P Kiel[2], Hanfei Xu[3], Ching-Ti Liu[3], Serkalem Demissie[3], Steven Boyd[4], Lauren Burt[4], Pawel Szulc[5], Roland Chapurlat[5], Blandine Merle[5], Elisabeth Sornay-Rendu[5], Jonathan Adachi[6], Shreyasee Amin[7], Elizabeth Atkinson[7], Sundeep Khosla[7], Claudie Berger[8], David Goltzman[9], David Hanley[10], Eric Lespessailles[11], Mattias Lorentzon[12], Dan Mellstrom[13], Maria Nethander[14], Claes Ohlsson[15], Daniel Sundh[16], Bert van Rietbergen[17], Andy Kin On Wong[18], Mary L Bouxsein[19]. [1]Division of Bone Diseases, Geneva University Hospitals and Faculty of Medicine, University of Geneva, Switzerland, [2]Marcus Institute for Aging Research, Hebrew SeniorLife, Harvard Medical School, United States, [3]Department of Biostatistics, Boston University School of Public Health, United States, [4]McCaig Institute for Bone and Joint Health, University of Calgary, Canada, [5]INSERM UMR1033, Université de Lyon, Hôpital Edouard Herriot, France, [6]Department of Medicine, Michael G. DeGroote School of Medicine, St Joseph's Healthcare - McMaster University, Canada, [7]Mayo Clinic College of Medicine and Science, United States, [8]Research Institute of the McGill University Health Centre, Canada, [9]Departments of Medicine, McGill University and McGill University Health Centre, Canada, [10]McCaig Institute for Bone & Joint Health, University of Calgary, Canada, [11]Department of rheumatology, Regional Hospital of Orleans, University of Orleans, France, [12]Geriatric 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, [13]Geriatric Medicine and Centre for Bone and Arthritis Research, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, [14]Bioinformatics Core Facility and Centre for Bone and Arthritis Research, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, [15]Centre for Bone and Arthritis Research, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, [16]Geriatric Medicine and Centre for Bone and Arthritis Research, Institute of Medicine, University of Gothenburg, Sweden, [17]Department of Biomedical Engineering, Eindhoven University of Technology, Netherlands, [18]Joint Department of Medical Imaging, University Health Network, Toronto, Canada, [19]Department 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 Sundh[1], Lisa Johansson[1], Dan Mellström[1], Anna G Nilsson[1], Mattias Lorentzon[1]. [1]Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, University of Gothenburg, Sweden, Sweden

Disclosures: Daniel Sundh, None

Monday

3:00 pm
1158

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

*Emese Toth[1], Cesar Libanati[1], Kristina Åkesson[2], Anna Spångeus[3], Östen Ljunggren[4], Gustaf Ortsäter[5], Jonas Banefelt[5]. [1]UCB Pharma, Belgium, [2]Skåne University Hospital, Lund University, Sweden, [3]Linköping University Hospital, Sweden, [4]Uppsala University, Sweden, [5]Quantify 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 Cusano[1], Mishaela Rubin[2], John Williams[2], Sanchita Agarwal[2], Rukshana Majeed[2], Beatriz Omeragic[2], John Bilezikian[2], Gaia Tabacco[3], Yu-Kwang Donovan Tay[4]. [1]Lenox Hill Hospital, United States, [2]Columbia University Medical Center, United States, [3]University Campus Bio-Medico, Italy, [4]Singapore 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 Leahy[1], Barbara Garita[1], Po-Hung Wu[1], Gabrielle Joseph[1], Misung Han[1], Roland Krug[1], Thomas Link[1], Galateia Kazakia[1]. [1]UCSF, 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 Alalawi[1], Hajar Abu Alrob [1], Haniah Shaikh[2], Manoela Braga[2], Zubin Punthakee[2], Rafik El Werfalli [2], J.E.M. Young[2], Aliya Khan[2], Adam Millar[3], Muhammad Shrayyef[3], Susan Teschke[3], Heather Zariffeh[4], Iman M'Hiri[4], Tayyab Khan[5], Adam Waldbilling[6]. [1]McMaster University, Canada, [2]McMaster University , Canada, [3]University of Toronto , Canada, [4]Bone Research and Education Centre, Canada, [5]LCM , Canada, [6]CHEO, Canada
Disclosures: Yousef Alalawi, None

FRI-5 **Clinical, Biochemical and Radiological Profile of Normocalcaemic Hyperparathyroidism: a Multicentric Cross-Sectional Evaluation**
*Anda Mihaela Naciu[1], Gaia Tabacco[1], Daria Maggi[1], Luca D'Onofrio[1], Silvia Briganti[1], Nicola Napoli[1], Paolo Pozzilli[1], Silvia Manfrini[1], Andrea Palermo[1], Stefania Falcone[2], Andrea Fabbri[2], Assunta Santonati[3], Domenico Castellitto[4], Alessandro Casini[4], Roberto Cesareo[4], Diana Lelli[5], Claudio Pedone[5]. [1]Unit of Endocrinology, University Campus Bio-Medico, Italy, [2]Unit of Endocrinology and Metabolic Diseases, CTO A. Alesini Hospital, University Tor Vergata, Italy, [3]Department of Endocrinology, San Giovanni Addolorata Hospital, Italy, [4]Thyroid and Metabolic Bone Diseases Center, Santa Maria Goretti Hospital, Italy, [5]Unit 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 Zhao[1], Zhe Wei[1], Zhen-lin Zhang[1]. [1]Metabolic 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 Agarwal[1], Adi Cohen[1], Mafo Kamanda-Kosseh[1], Mariana Bucovsky[1], Elizabeth Shane[1]. [1]1. 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 Bailey[1], Tessabella Magliochetti[1], Deepak Vashishth[1], Ewan McNay[2]. [1]Rensselaer Polytechnic Institute, United States, [2]University 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 Macdonald[1], Claudie Berger[2], Neora Pick[3], Evelyn Maan[3], Helene Cote[4], Melanie Murray[5], Jerilynn Prior[6]. [1]Department of Family Practice, University of British Columbia, Canada, [2]CaMos Methods Centre, McGill University, Canada, [3]Oak Tree Clinic, BC Women's Hospital & Health Centre, Canada, [4]Department of Pathology and Laboratory Medicine, University of British Columbia, Canada, [5]Division of Infectious Diseases, Faculty of Medicine, University of British Columbia, Canada, [6]Department 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 Elizondo[1], Scott Lenfest[1], Sandhya Sihra[1], Jennifer Kosniewski[1], Jeremy Black[1], Zachary Kohn[1], Jessica Brezicha[2], Susan Bloomfield[3], Harry Hogan[4]. [1]Texas A&M University, Dept. of Mechanical Engineering, United States, [2]Texas A&M University, Dept. of Biomedical Engineering, United States, [3]Texas A&M University, Dept. of Health & Kinesiology, United States, [4]Texas A&M University, Depts. of Mechanical Engineering & Biomedical Engineering, United States

Disclosures: Jon Elizondo, None

ASBMR 2019 Annual Meeting Young Investigator Award

FRI-29 **Mineral deposition is required to repair diffuse damage in bone in vivo**

*Leila Mehraban Alvandi[1], Donna Chen[1], Robert J Majeska[1], Rinaldo Florencio-Silva[2], Zeynep Seref-Ferlengez[3], Mitchell B. Schaffler[4]. [1]1Department of Biomedical Engineering, City College of New York, New, United States, [2]Federal University of São Paulo – Medical school, Brazil, [3]Albert Einstein College of Medicine, Orthopedic Surgery, New York NY, United States, [4]Department 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 Nyman[1], Sasidhar Uppuganti[1], Nora Ward[2], Mark Does[2]. [1]Vanderbilt University Medical Center, United States, [2]Vanderbilt 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 Powell[1], Cayla Skaggs[1], Alexis Pulliam[1], Joseph Wallace[1], Alycia Berman[2], Matthew Allen[3]. [1]Indiana University Purdue University Indianapolis, Department of Biomedical Engineering, United States, [2]Purdue University, Weldon School of Biomedical Engineering, United States, [3]Indiana 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 Surowiec[1], Kenneth Kozloff[1], Sundaresh Ram[2], Craig Galban[2], Djaudat Idiyatullin[3], Robert Goulet[4]. [1]Departments of Orthopaedic Surgery and Biomedical Eng., University of Michigan, United States, [2]Department of Radiology, University of Michigan, United States, [3]Department of Radiology, University of Minnesota, United States, [4]Department 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**

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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 Curtis[1], Rebecca Moon[1], Stefania D'Angelo[1], Sarah Crozier[1], Hazel Inskip[1], Keith Godfrey[1], Cyrus Cooper[1], Nicholas Harvey[1], Nicholas Bishop[2], Sujatha Gopal[2], Stephen Kennedy[3], Aris Papageorghiou[3], Robert Fraser[4], Saurabh Gandhi[4], Inez Schoenmakers[5], Ann Prentice[6], Kassim Javaid[7], Richard Eastell[8]. [1]MRC Lifecourse Epidemiology Unit, University of Southampton, United Kingdom, [2]Academic Unit of Child Health, Sheffield Children's Hospital, United Kingdom, [3]Nuffield Department of Women's and Reproductive Health, John Radcliffe Hospital, University of Oxford, United Kingdom, [4]Department of Obstetrics and Gynaecology, Sheffield Hospitals NHS Trust, University of Sheffield, United Kingdom, [5]Department of Medicine, Faculty of Medicine and Health Sciences, University of East Anglia, United Kingdom, [6]Nutrition and Bone Health, University of Cambridge, United Kingdom, [7]NIHR Oxford Biomedical Research Centre, University of Oxford, United Kingdom, [8]Academic Unit of Bone Metabolism, University of Sheffield, United Kingdom

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FRI-75 **Molecular Mechanisms for Pamidronate Rescue of Post-burn Muscle Loss in Children**

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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 Ahuja[1], Henry Tran[1], Marco Brotto[1], Venu Varanasi[1], Kamal Awad[2], Pranesh Aswath[2], Lindsay Wilson[3], Simon Young[3]. [1]Bone Muscle Research Center, CONHI, University of Texas at Arlington, United States, [2]Department of Material Science and Engineering, University of Texas at Arlington, United States, [3]Department 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 Gross[1], Edith Gardiner[1], Leah Worton[1], Brandon Ausk[1], Steven Bain[1], Nicholas Shubin[2], Adrian Piliponsky[2]. [1]University of Washington, United States, [2]Seattle 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 Huang[1], Leticia Brotto[1], Marco Brotto[1], Janalee Isaacson[2], Lynda Bonewald[3], Mark Johnson[4], Robert Recker[5], Joan Lappe[5]. [1]Bone-Muscle Research Center, College of Nursing and Health Innovation, University of Texas at Arlington, United States, [2]School of Nursing & Human Physiology, Gonzaga University, United States, [3]Indiana Center for Musculoskeletal Health, School of Medicine, Indiana University, United States, [4]Department of Oral and Craniofacial Sciences, School of Dentistry, University of Missouri-Kansas City, United States, [5]School 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 Shainer[1], Vardit Kram[2], Tina M. Kilts[2], Li Li[2], Marian F. Young[2], Andrew Doyle[3]. [1]Molecular Biology of Bones and Teeth Section, NIDCR, NIH , United States, [2]Molecular Biology of Bones and Teeth Section, NIDCR, NIH, United States, [3]Cell Biology Section, NIDCR, NIH, United States
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FRI-91 **Osteocalcin ameliorates the cognitive dysfunctions in APP/PS1 mice**
*Chang Shan[1], Yan-fang Hou[1], Shu-min Wang[1], Jian-min Liu[1], Yan-ling Gong[2], Qian-qian Zhuang[2], Sheng-tian Li[2]. [1]Shanghai Jiao-tong University School of Medicine, China, [2]Shanghai Jiao-tong University, China
Disclosures: Chang Shan, None

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FRI-92 **The Muscle Metabolite, β-aminoisobutyric acid, L-BAIBA, Enhances the Effects of Suboptimal Mechanical Loading on New Bone Formation.**
*Alberto Smargiassi[1], Alexander Robling[1], Lynda Bonewald[1], Marco Brotto[2]. [1]IUPUI, United States, [2]University of Texas at Arlington , United States
Disclosures: Alberto Smargiassi, None

FRI-93 **Distinctive role of muscle-specific ubiquitin ligases in bone microarchitecture**
*Vidyani Suryadevara[1], Monte Willis[1]. [1]IUPUI, United States
Disclosures: Vidyani Suryadevara, None

FRI-96 **Impaired PTH-stimulated periosteal proliferation, Wnt activity and fracture healing in Fgf2 knockout mice**
*Liping Xiao[1], Marja Hurley[1]. [1]UConn 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 Costa[1], Heather Fairfield[1], Mariah Farrell[1], Connor Murphy[1], Ashley Soucy[1], Michaela Reagan[1], Gill Holdsworth[2]. [1]Maine Medical Center Research Institute, United States, [2]UCB 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. Clements[1], Rachelle W. Johnson[2]. [1]Vanderbilt University, United States, [2]Vanderbilt University Medical Center, United States
Disclosures: Miranda E. Clements, None

FRI-136 **TBK1/IKKε inhibitor Amlexanox blocks Multiple Myeloma cell growth in vitro and in vivo**

*Quanhong Sun[1], Juraj Adamik[1], Peng Zhang[1], Konstantinos Lontos[1], Deborah L. Galson[1], Valentina Marchica[2], Nicola Giuliani[2], Rebecca Silbermann[3], G.David Roodman[4], Lea Nyiranshuti[5], Joseph Latoche[5], Carolyn J. Anderson[5], Konstantinos Verdelis[6]. [1]Department of Medicine, Hem-Onc Division, UPMC Hillman Cancer Center, University of Pittsburgh, United States, [2]Myeloma Unit, Department of Clinical and Experimental Medicine, University of Parma, Italy, Italy, [3]Department of Medicine, Hematology-Oncology Division, Indiana University, Indianapolis, IN, USA, United States, [4]Department of Medicine, Hem-Onc Division, Indiana University, Indianapolis, IN; 5Veterans Administration Medical Center, Indianapolis, IN, USA, United States, [5]Department of Medicine, Cardiology Division, University of Pittsburgh, United States, [6]Department of Oral Biology, The Center for Craniofacial Regeneration, McGowan Institute for Regenerative Medicine, University of Pittsburgh, United States

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ASBMR 2019 Annual Meeting Young Investigator Award

FRI-138 **Circulating osteocalcin-positive cells predict the progression of breast cancer bone metastasis**

*Kyoung Jin Lee[1], Serk In Park[1], Hyun Jin Sun[2], Kyung-Hun Lee[2], Tae Young Kim[2], Seock-Ah Im[2], Sun Wook Cho[2]. [1]Department of Biochemistry and Molecular Biology, Korea University College of Medicine, Republic of Korea, [2]Department of Internal Medicine, Seoul National University Hospital, Republic of Korea

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FRI-141 **The Role of Integrin α2β1 in Breast Cancer Metastasis to Bone**

*Milene Moritz[1], Heloisa de Araujo[1], Alyssa Merkel[2], Julie Rhoades (Sterling)[2], Ean Feldman[3]. [1]Federal University of Sao Carlos, Brazil, [2]Vanderbilt University Medical Center, United States, [3]Vanderbilt 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 Park[1], Kyoung Jin Lee[1], Eun Jung Lee[1], Bo-Yeon Seo[1], Seung Pil Jung[2], Sun Wook Cho[3]. [1]Department of Biochemistry and Molecular Biology, Korea University College of Medicine, Republic of Korea, [2]Department of Surgery, Korea University College of Medicine, Republic of Korea, [3]Department 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 Park[1], Mattew Eber[1], Shunsuke Tsuzuki[1], Rebecca Cain[1], Brooke Widner[1], Yusuke Shiozawa[1], Yuko Kamata[2], Takahiro Kimura[2], Fang-Chi Hsu[3], Christopher Peters[4]. [1]Wake Forest University Health Sciences, United States, [2]The Jikei University School of Medicine, Japan, [3]Wake Forest University Health Scineces, United States, [4]Wake Forest Univerisy Health Sciences, United States

Disclosures: Sun Park, None

FRI-145 **Parathyroid Hormone Receptor Signaling Mediates Breast Cancer Metastasis to Bone in Mice**

*Srilatha Swami[1], Hui Zhu[1], Joy Y. Wu[1]. [1]Stanford University, United States

Disclosures: Srilatha Swami, None

FRI-147 **HIF Signaling Drives Spontaneous Dissemination of Breast Cancer Cells to Bone**

*Vera Todd[1], Lawrence Vecchi[2], Rachelle Johnson[2]. [1]Vanderbilt University, United States, [2]Vanderbilt University Medical Center, United States

Disclosures: Vera Todd, None

CHONDROCYTES

FRI-174 **DDRGK1 is required for the proper chondrogenesis and the regulation of osteochondroprogenitors**

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Disclosures: Yangjin Bae, None

FRI-175 **Pinch regulates chondrogenesis by control of TGF-β1 signaling and expression of Sox9 and Runx2 in chondrocytes**

*Yiming Lei[1], Huiling Cao[1], Pengyu Li[1], Xin Liu[1], Qinnan Yan[1], Simin Lin[1], Liting Ma[1], Yuxi Guo[1], Yumei Lai[2], Yiran Zhao[3], Wei Yang[3], Yishu Wang[3], Ruxuan Li[3], Guozhi Xiao[3]. [1]Guangdong 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, [2]Department of Orthopedic Surgery, Rush University Medical Center, United States, [3]Guangdong 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

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FRI-178 **Growth plate borderline chondrocytes behave as transient mesenchymal precursor cells**

*Koji Mizuhashi[1], Noriaki Ono[1]. [1]University 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 Song[1], Ivan Bochkov[1], Yangjin Bae[1], Erez Aiden[1], Brendan Lee[1]. [1]Molecular 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**

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Disclosures: qiaoyan tan, None

FRI-181 **Runx1 Mediates Articular Cartilage Repair in Osteoarthritis through Upregulating Yap and Downregulating Wnt/β-catenin Signaling Pathway**

*Yan Zhang[1], Yun Lu[1], Tao Zuo[1], Guochun Zhu[1], Jinjin Wu[1], Wei Chen[1], Yi-Ping Li[1]. [1]Department 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 Kato[1], Minae Koga[1], Nobuaki Ito[1]. [1]Division 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 Smith[2], Susan Bayliss[2], Marwan Shinawi[2], William McAlister[2], Ana Maria Arbelaez[2], Gary Gottesman[3], Valerie Wollberg[3], Michael Whyte[3], Jeffrey Sugarman[4]. [1]University of Arizona College of Medicine - Phoenix, United States, [2]Washington University School of Medicine in St. Louis, United States, [3]Shriners Hospitals for Children - St. Louis, United States, [4]University 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 Stanciu[1], Paul Miller [2]. [1]Colorado Center for Bone Research at Panorama Orthopedics and Spine Center, United States, [2]Colorado Center for Bone Research at Panorama Orthopedics and Spine Surgery Center, United States

Disclosures: Irinel Stanciu, None

FRI-208 **A Unique Cause of Hypercalcemia**

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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**

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Disclosures: Audrie Langlais, None

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

*Seung-Yon Lee[1], Manuela Fortunato[1], Marcus Watkins[1], Francesca Fontana[1], Roberto Civitelli[1]. [1]Divisions 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 Shares[1], Roman Eliseev[1]. [1]University 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 Sowman[1], Sam Z. Olechnowicz[1], Stefan Kluzek[1], Nigel K. Arden [1], James R. Edwards[1]. [1]University 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**

*Jai Prakash[1], Fiona E McGuigan[1], Holger Luthman[1], Kristina E Akesson[1]. [1]Lund University, Sweden

Disclosures: Jai Prakash, None

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

*Carolina Medina-Gomez[1], Katerina Trajanoska[1], M. Carola Zillikens[1], Andre G. Uitterlinden[1], Fernando Rivadeneira[1], Chun Chieh Fan[2], Anders M. Dale[2], Tyler M. Seibert[2], Ole A. Andreassen[3]. [1]Department of Internal Medicine, Erasmus University Medical Centre, Netherlands, [2]Center for Multimodal Imaging and Genetics, University of California San Diego, United States, [3]NORMENT, 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 Mo[1], Zhiying Wang[1], Marco Brotto[1], Kuan-Jui Su[2], Hongwen Deng[2], Lynda Bonewald[3]. [1]Bone-Muscle Research Center, College of Nursing and Health Innovation, the University of Texas-Arlington, United States, [2]Tulane Center of Bioinformatics and Genomics, Department of Global Biostatistics and Data Science, Tulane University, United States, [3]Musculoskeletal 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 Pippin[1], Alessandra Chesi[1], Chun Su[1], Kenyaita Hodge[1], Mathew Johnson[1], Andrew Wells[1], Struan Grant[1], Yadav Wagley[2], Kurt Hankenson[2]. [1]Children's Hospital of Philadelphia, United States, [2]University 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 Hsu[1], David Karasik[1], Douglas P. Kiel[1], Alexander Teumer[2], Katerina Trajanoska[3], Fernando Rivadeneira[3], On Behalf of GEFOS and CHARGE Consortia[4]. [1]Hinda and Arthur Marcus Institute for Aging Research, Hebrew SeniorLife, United States, [2]Institute of Community Medicine, University of Greifswald, Germany, [3]Department of Internal Medicine, Erasmus MC University, Netherlands, [4]Consortia, Netherlands

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 Aikebaier[1], Yoshinori Asou[1], Hiroki Ochi[1], Piao Jinying[1], Shingo Sato[1], Kunikazu Tsuji[1], Atsushi Okawa[1]. [1]Tokyo Medical and Dental University, Japan

Disclosures: Aobulikasimu Aikebaier, None

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

*Guillaume Courbon[1], Vikas Chonira[1], Maralee Capella[1], Samantha Neuburg[1], Xueyan Wang[1], Aline Martin[1], Valentin David[1]. [1]Division 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**

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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 Ponte[1], Warren Aaron[1], Ha-neui Kim[1], Srividhya Iyer[1], Li Han [1], Maria Almeida[1], Manolagas Stavros[1]. [1]UAMS, United States

Disclosures: Filipa Ponte, None

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

*K. Berit Sellars[1], Brittany A. Ryan[1], Beth J. Kirby[1], Christopher S. Kovacs[1]. [1]Memorial University of Newfoundland, Canada

Disclosures: K. Berit Sellars, None

MECHANOBIOLOGY

FRI-285 **Mechanoresponsive MiR-138-5p Targets MACF1 to Inhibit Bone Formation**

*Zhihao Chen[1], Fan Zhao[1], Lifang Hu[1], Chong Yin[1], Yan Zhang[1], Dijie Li[1], Airong Qian[1], Chao Liang[2], Ge Zhang[2]. [1]Lab for Bone Metabolism, Key Lab for Space Biosciences and Biotechnology, School of Life Sciences, Northwestern Polytechnical University, Xi'an, Shaanxi 710072, China., China, [2]Law Sau Fai Institute for Advancing Translational Medicine in Bone & Joint Diseases, Hong Kong, China, Hong Kong

Disclosures: Zhihao Chen, None

ASBMR 2019 Fund for Research and Education Young Investigator Award

FRI-286 **Sptbn1 disruption increases osteocyte membrane fragility, leading to impaired cell viability and a blunted mechanotransduction response following mechanical loading**

*Mackenzie Hagan[1], Kanglun Yu[1], Eric Stokes[1], Sarah Bass[1], Mohamed Awad[1], Mohammed Elsalanty[1], Paul McNeil[1], Rachel Roberts[2], Daniel Perrien[3], James Ervasti[4], Mark Hamrick[5], Meghan McGee-Lawrence[5]. [1]Augusta University, United States, [2]Augusta, United States, [3]Vanderbilt University, United States, [4]University of Minnesota, United States, [5]Medical 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 He[1], Zhifeng Yu[1]. [1]Shanghai 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 Laughrey[1], LeAnn Tiede-Lewis[2], Sarah Dallas[2], Mark Johnson[2], Nuria Lara-Castillo[2], Thiagarajan Ganesh[3]. [1]University of Missouri - Kansas City, United States, [2]University of Missouri - Kansas City, School of Dentistry, Department of Oral and Craniofacial Sciences, United States, [3]University 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 Tol[1], Victoria Schemenz[1], Wolfgang Wagermaier[1], Hajar Razi[1], Peter Fratzl[1], Richard Weinkamer[1], Andreas Roschger[2], Paul Roschger[3], Isabela Vitienes[4], Bettina Willie[4]. [1]Max Planck Institute of Colloids and Interfaces, Department of Biomaterials, Germany, [2]University of Salzburg, Chemistry and Physics of Materials, Austria, [3]Ludwig Boltzmann Institute of Osteology at Hanusch Hospital of WGKK and AUVA Trauma Centre Meidling, 1st Medical Department, Hanusch Hospital, Austria, [4]Shriners 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 Grinman[1], Pamela Dann[2], John Wysolmerski[3]. [1]Yale University. Department of Internal Medicine. Section of Endocrinology & Metabolism, United States, [2]Yale University. Department of Interal Medicine. Section of Endocrinology & Metabolism., United States, [3]Yale University. Department of Interal Medicine. Section of Endocrinology & Metabolism, United States

Disclosures: Diego Grinman, None

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

*Shota Ito[1], Kotaro Tanimoto[1], Tomoko Minamizaki[2], Yuji Yoshiko[2], Yoshiaki Kitaura[3], Shinsuke Ohba[4], Ung-il Chung[4]. [1]Department of Orthodontics and Craniofacial Developmental Biology, Hiroshima University Graduate School of Biomedical and Health Sciences, Japan, [2]Department of Calcified Tissue Biology, Hiroshima University Graduate School of Biomedical and Health Sciences, Japan, [3]Department of Bioengineering, The University of Tokyo, Japan, [4]Center 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 Sahbani[1], Christopher Cardozo[2], William Bauman[2], Hesham Tawfeek[2]. [1]James J. Peters VA Medical Center, United States, [2]James 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 Dann[1], John Wysolmerski[1], Raphael Levy[2], Kirk Johnson[3], Padma Bezwada[3]. [1]Yale University, United States, [2]XOMA , United States, [3]XOMA Corporation, United States

Disclosures: Pamela Dann, None

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

*Pamela Dann[1], Julie Hens[1], Miralireza Takyar[1], Diego Grinman[1], Clemens Bergwitz[1], John Wysolmerski[1]. [1]Yale 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 Biguetti[1], Ramez Mahamoud[1], Gustavo Simionato[1], André Oliva[1], Mariza Matsumoto[1], Isabela Custódio[2], Jesus Andreo[3], Marco Brotto[4], Walid Fakhouri[5], Chenglin Mo[6]. [1]School of Dentistry of Araçatuba, São Paulo State University, FOA/UNESP, Brazil, [2]School of Dentistry, Universidade Sagrado Coração, USC, Brazil, [3]School of Dentistry of Bauru, University of São Paulo, FOB/USP, Brazil, [4]Bone-Muscle Research Center, Nursing Program, University of Texas at Arlington, UTA, United States, [5]Center for Craniofacial Research, School of Dentistry, The University of Texas Health Science Center at Houston, United States, [6]University of Texas at Arlington, United States

Disclosures: Claudia Biguetti, None

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

*Peggy Cawthon[1], Sheena Patel[1], Steven Cummings[1], Eric Orwoll[2], Andrew Burghardt[3], Kate Duchowny[3], Lisa Langsetmo[4], Kristine Ensrud[4], Elsa Strotmeyer[5], Joe Zmuda[5], Jane Cauley[5], Miljkovic Iva[5], Nancy Lane[6], William Evans[7]. [1]California Pacific Medical Center, Research Institute, United States, [2]Oregon Health and Sciences University, United States, [3]University of California, San Francisco, United States, [4]University of Minnesota, United States, [5]University of Pittsburgh, United States, [6]University of California, Davis, United States, [7]University 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**

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FRI-341 **Age-associated Increase in Kynurenine Iinhibits Autophagy and Promotes Senescence and Apoptosis in Bone Marrow Mesenchymal Stem Cells**

*Dmitry Kondrikov[1], Ahmed Elmansi[1], William Hill[1], Robert Tailor Bragg[2], Tanner Mobely[2], Thomas Barrett[2], Patricia Schoeinlein[2], Xing-Ming Shi[2], Sadanand Fulzele[2], Meghan McGee Lawrence[2], Mark Hamrick[2], Carlos Isales[2], Alexandra Aguilar-Perez[3]. [1]Medical University of South Carolina, United States, [2]Augusta University, United States, [3]Indiana University School of Medicine, United States

Disclosures: Dmitry Kondrikov, None

MUSCULOSKELETAL DEVELOPMENT

FRI-351 **IRS1 and IRS2 are integral for longitudinal bone growth**

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FRI-352 **Usp53, a PTH target regulating cell lineage fate and bone turnover**

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Disclosures: Hadla Hariri, None

FRI-353 **Loss of preBCR components affects the homeostasis of cranial bone**

*Mohamed Khass[1], Louis Bridges[1], Harunur Rashid[2], Peter Burrows[3], Amjad Javed[4], Harry Schroeder[5]. [1]Department of Medicine, University of Alabama at Birmingham, United States, [2]Department of Oral and Maxillofacial Surgery, University of Alabama at Birmingham, United States, [3]Deaprtment of Microbiology, University of Alabama at Birmingham, United States, [4]Department of Oral and Maxilofacial Surgery, University of Alabama at Birmingham, United States, [5]Deaprtment 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 LaCombe[1], Randall Roper[1], Joseph Wallace[1]. [1]IUPUI, United States

Disclosures: Jonathan LaCombe, None

FRI-356 **Bromodomain-containing Protein Brd4 is Required for Proper Skeletal Formation**

*Christopher Paradise[1], M. Lizeth Galvan[1], Catalina Galeano-Garces[1], Roman Thaler[1], Andre J. van Wijnen[1], Amel Dudakovic[1]. [1]Mayo Clinic, United States

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FRI-357 **Prevention of ectopic calcification by MGP: The role of its conserved residues**

*Abhinav Parashar[1], Juliana Marulanda[1], Omar Al Rifai[2], Mathieu Ferron[3], Monzur Murshed[4]. [1]Faculty of Dentistry, McGill University, Canada, Canada, [2]University of Montreal, Canada, Canada, [3]Department of Biochemistry and Nuclear Medicine, University of Montreal, Canada, [4]Faculty of Medicine, McGill University, Canada, Canada

Disclosures: Abhinav Parashar, None

FRI-358 **Aberrant muscle tissue repair by mutant ACVR1 FOP progenitor cells**

*Alexandra Stanley[1], Elisia Tichy[1], Foteini Mourkioti[1], Eileen Shore[1]. [1]University of Pennsylvania, United States

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FRI-361 **Loss of ZIP10 in osteoblasts and chondrocytes impairs skeletal development and growth.**

*Rika Yasuhara[1], Akihiro Kawashima[1], Akane Yukimori[1], Junichi Tanaka[1], Satoko Kujiraoka[1], Kenji Mishima[1], Toshiyuki Fukada[2], Motomi Enomoto-Iwamoto[3]. [1]Showa University, Japan, [2]Tokushima Bunri University, Japan, [3]University of Maryland, United States

Disclosures: Rika Yasuhara, None

MUSCULOSKELETAL PROGENITOR CELLS AND LINEAGE DETERMINATION

FRI-386 **Eif2ak4/GCN2 maintains bone homeostasis through regulation of skeletal stem cell proliferation**

*Guoli Hu[1], Yilin Yu[1], Courtney Karner[1], Fanxin Long[2]. [1]Department of Orthopaedic Surgery, Duke University School of Medicine, United States, [2]Department of Orthopaedic Surgery, University of Pennsylvania, United States

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FRI-387 **Wnt responsive progenitor cells contribute to osseointegration of implants in lone bone.**

*Zhijun Li[1], Xue Yuan[1], Jill Helms[1]. [1]Stanford 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 Root[1], Natalie Wee[1], Sanja Novak[1], Ivo Kalajzic[1], Brya Matthews[2]. [1]Department of Reconstructive Sciences, University of Connecticut Health Center, United States, [2]Department 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 Sharma[1], Rachel Roberts[1], Jessica Pierce[1], Mohamed Awad[1], Mohammed Elsalanty[1], William Hill[2], Mark Hamrick[3], Carlos Isales[3], Meghan McGee-Lawrence[3]. [1]Augusta University, United States, [2]Medical University of South Carolina, United States, [3]Medical 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 Tzeng[1], Shih-yu Chen[1]. [1]Institute 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 Ying[1], Taotao Xu[1], Cuicui Wang[1], Regis O'Keefe[1], Yousef Abu-Amer[1], Jie Shen[1]. [1]Department 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 Zhai[1], Xinping Zhang[1]. [1]University 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 Huang[1], Lan Zhao[1], Yunshan Fan[1], Jun Li[1], Di Chen[1]. [1]Rush 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 Shiraishi[1], Ko Chiba[1], Narihiro Okazaki[1], Kazuaki Yokota[1], Makoto Osaki[1]. [1]Department 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 Su[1], Xiannan Liu[1], Qi Sun[1], Xu Cao[1], Mei Wan[1]. [1]Department 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 Zhao[1], Jian Huang[1], Yunshan Fan[1], Lifan Liao[1], Di Chen[1]. [1]Department of Orthopedic Surgery, Rush University Medical Center, United States

Disclosures: Lan Zhao, None

OSTEOBLASTS

ASBMR 2019 Annual Meeting Young Investigator Award

FRI-440 **Truncating Mutations in Recql4 Cause a Low Bone Mass Phenotype, but Not Osteosarcoma**

*Wilson Castillo-Tandazo[1], Monique Smeets[1], Natalie Sims[1], Carl Walkley[2]. [1]St. Vincent's Institute; Department of Medicine, St. Vincent's Hospital, University of Melbourne, Australia, [2]St. Vincent's Institute; Department of Medicine, St. Vincent's Hospital, University of Melbourne; Mary MacKillop Institute for Health Research, Australian Catholic University , Australia

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FRI-441 **Autophagy Suppression by Atg5 Deletion Led to Osteopenia in Mice through mTORC1 Downregulation**

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Disclosures: Han Kyoung Choi, None

ASBMR 2019 Annual Meeting Young Investigator Award

FRI-442 **Macrophage-Lineage TRAP+ Cells Recruit Periosteum-Derived Cells for Periosteal Osteogenesis and Regeneration**

*Ruoxian Deng[1], Bo Gao[2], Yu Chai[3], Hao Chen[3], Bo Hu[3], Xiao Wang[3], Shouan Zhu[3], Shuangfei Ni[3], Yong Cao[3], Mei Wan[3], Liu Yang[4], Zhuojing Luo[4], Xu Cao[5]. [1]Department of Orthopaedic Surgery, Department of Biomedical Engineering, The Johns Hopkins University School of Medicine, United States, [2]Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine; Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, United States, [3]Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine, United States, [4]Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, China, [5]Department of Orthopaedic Surgery, Institute of Cell Engineering, The Johns Hopkins University School of Medicine, United States

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FRI-443 **Zbtb40 Loss-of-Function Inhibits Osteoblast Mineralization, Affecting Lumbar Spine Bone Mass in Mice**

*Madison Doolittle[1], Robert Maynard[1], Dana Godfrey[1], Cheryl Ackert-Bicknell[1], Gina Calabrese[2], Larry Mesner[2], Charles Farber[2]. [1]University of Rochester, United States, [2]University 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 Nakajima[1], Hisashi Hasegawa[1], Yuji Yamazaki[1], Kenji Nagao[1], Yoshiaki Kitaura[2], Ung-il Chung[3], Shinsuke Ohba[3]. [1]Kyowa Kirin Co., Ltd, Japan, [2]Department of Bioengineering, The University of Tokyo Graduate School of Engineering, Japan, [3]Department 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 Nguyen[1], Yun Lu[1], Wei Chen[1], Yi-Ping Li[1]. [1]Department of Pathology, University of Alabama at Birmingham, United States

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FRI-450 **Interleukin-6 signaling in osteoblasts promotes osteoclast differentiation**

*Biagio Palmisano[1], Subrata Chowdhury[1], Gerard Karsenty[1], Juan Hidalgo[2]. [1]Department of Genetics and Development, Columbia University Irving Medical Center, United States, [2]Department of Cellular Biology, Physiology and Immunology, Faculty of Biosciences, Universitat Autònoma de Barcelona, Spain

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ASBMR 2019 Annual Meeting Young Investigator Award

FRI-451 **APP promotes osteoblast survival and bone formation by regulating mitochondrial function and preventing oxidative stress**

*Jinxiu Pan[1], Fulei Tang[2], Kai Zhao[2], Lei Xiong[3], Peng Zeng[3], Bo Wang[3], Haohan Guo[3], Lin Mei[3], Wen-Cheng Xiong[3]. [1] Case Western Reserve University, United States, [2]Augusta University, United States, [3]Case Western Reserve University, United States

Disclosures: Jinxiu Pan, None

FRI-453 **Targeted deletion of Bmal1 in osteoblast causes differential effects on trabecular and cortical bone via BMP2 signaling pathway**

*Zhuang Qian[1], Ying Zhang[1], Xiaomin Kang[1], Yan Zahng[1], Xinxin Jin[1], Mao Xu[1], Zhengmin Ma[1], Liting Zhang[1], Shufang Wu[1], Hui xia Li[2], Xin Gao[2], Zhuanmin Zhang[2], Hongzhi Sun[2]. [1]Center for Translational Medicine, the First Affiliated Hospital of Xi'an Jiaotong University , China, [2]Key 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 Samsa[1], Murali Mamidi[1], Lindsay Bashur[1], Guang Zhou[1]. [1]Case Western Reserve University, United States

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FRI-458 **Osteoblast-derived Wnt1 regulates cortical bone mass in adult mice**

*Fan Wang[1], Petri Rummukainen[1], Outi Mäkitie[2], Roland Baron[3], Riku Kiviranta[4]. [1]Institute of Biomedicine, University of Turku, Turku 20520, Finland, Finland, [2]Folkhälsan Institute of Genetics, Helsinki 00290, Finland, Finland, [3]Department of Oral Medicine, Infection and Immunity, Harvard School of Dental Medicine, Harvard University, Boston, MA 02115, USA, United States, [4]Department 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 Zhang[1], Weiwei Zhao[1], Bryan MacDonald[2], Xi He[2], Alexander Robling[3]. [1]Huazhong University of Science and Technology, China, [2]Harvard Medical School, United States, [3]Indiana University School of Medicine, United States

Disclosures: Xinjun Zhang, None

OSTEOCLASTS

FRI-504 **Tethering Function of Mitofusin2 Controls Osteoclast Differentiation**
*Anna Ballard[1], Rong Zeng[1], Allahdad Zarei[1], Christine Shao[1], Linda Cox[1], Roberta Faccio[1], Deborah Veis[1]. [1]Washington University School of Medicine, United States
Disclosures: Anna Ballard, None

FRI-505 **Osteoclasts are a target of the sympathetic nervous system**
*Audrey C Bergeron[1], Audrie L Langlais[1], Katherine J Motyl[1]. [1]Maine 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 Cao[1], Matthew Greenblatt[1], Geoffrey Pitt[1], Aaron Oswald[2], Brian Fabella[2], Yinshi Ren[3], Ramona Rodriguiz[3], Matthew Hilton[3], George Trainor[4]. [1]Weill Cornell Medicine, United States, [2]The Rockefeller University, United States, [3]Duke University, United States, [4]Innovation 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 Inoue[1], Christine Miller[1], Baohong Zhao[1]. [1]HOSPITAL FOR SPECIAL SURGERY, United States
Disclosures: Kazuki Inoue, None

FRI-509 **Osteoclasts promote trabecular bone formation through the suppression of sclerostin expression**
*Masanori Koide[1], Yasuhiro Kobayashi[1], Teruhito Yamashita[1], Shunsuke Uehara[1], Naoyuki Takahashi[1], Nobuyuki Udagawa[1], Kohei Murakami[2], Hisataka Yasuda[3]. [1]Matsumoto Dental University, Japan, [2]Okayama University of Science, Japan, [3]Oriental Yeast Co., Ltd., Japan
Disclosures: Masanori Koide, None

FRI-510 **Disruption of Heparan Sulfate–RAGE Interaction Impairs Osteoclastogenesis**
*Miaomiao Li[1], Xiaoxiao Zhang[1], Ding Xu[1]. [1]State 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 Clastokine SLIT3**
*Bongjin Shin[1], Anne Delany[1], Sun-Kyeong Lee[1], Justine Kupferman[2], Ewoud Schmidt[2], Franck Polleux[2]. [1]UConn Health, United States, [2]Columbia University, United States
Disclosures: Bongjin Shin, None

FRI-515 **Ga13 restrains osteoclast function by cytoskeletal and mitochondrial regulation**
*Kazuki Inoue[1], Jumpei Shirakawa[1], Shinichi Nakano[1], Cheng Xu[1], Zhonghao Deng[1], Gregory Vitone[1], Baohong Zhao[1], Viktoriya Syrovatkina[2], Xin-Yun Huang[2], Liang Zhao[3]. [1]Arthritis and Tissue Degeneration Program and The David Z. Rosensweig Genomics Research Center, Hospital for Special Surgery, United States, [2]Department of Physiology and Biophysics, Weill Cornell Medical College, United States, [3]Department of Orthopedic Surgery, Nanfang Hospital, Southern Medical University, China
Disclosures: Kazuki Inoue, None

ASBMR 2019 Annual Meeting Young Investigator Award

FRI-518 **Hematopoietic stem cell-independent erythromyeloid progenitors in the yolk-sac give rise to osteoclasts contributing to the postnatal bone remodeling**
*Yasuhito Yahara[1], Benjamin Alman[2]. [1]Duke University, University of Toyama, United States, [2]Duke University, United States
Disclosures: Yasuhito Yahara, None

FRI-519 **HES1 is a Novel Determinant of Osteoclast Differentiation**
*Jungeun Yu[1], Lauren Schilling[1], Ernesto Canalis[1]. [1]UConn 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**
*Makoto Arai[1], Hiroki Ochi[1], Satoko Sunamura[1], Shingo Sato[1], Shu Takeda[2]. [1]Department of Physiology and Cell Biology, Tokyo Medical and Dental University, Japan, [2]Division of Endocrinology, Toranomon Hospital Endocrine Center, Japan
Disclosures: Makoto Arai, None

FRI-558 **PPARγ Regulation of Osteocyte Fuel Dependency and Capacity Contributes to the Balance of Systemic Energy Metabolism**
*Sudipta Baroi[1], Amit Chougule[2], Beata Lecka-Czernik[2], Patrick Griffin[3]. [1]University of Toledo College of Medicine & Life Sciences, United States, [2]University of Toledo College of Medicine and Life Sciences, United States, [3]The Scripps Research Institute, United States
Disclosures: Sudipta Baroi, None

FRI-559 **Osteocyte Oxidative Stress Following Estrogen Loss, Microdamage and Disuse**
*Dorra Frikha-Benayed[1], Mitchell Schaffler[1], Jelena Basta-Plajkic[1], Robert J Majeska[1]. [1]The 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**
*Yukiko Kitase[1], Alberto Smargiassi[1], Lynda Bonewald[1], Nuria Lara[2], Mark Johnson[3]. [1]Indiana University, United States, [2]University of Missouri at Kansas City, United States, [3]University of Missouri-Kansas City, United States
Disclosures: Yukiko Kitase, None

FRI-561 **Impaired 1,25 dihydroxyvitamin D action contributes to the abnormalities in lacuno-canalicular remodeling observed in the Hyp mouse model of XLH**
*Eva Liu[1], Ye Yuan[1], Rakshya Rana[1], Janaina Martins[2]. [1]Brigham and Womens Hospital, United States, [2]Massachusetts General Hospital, United States
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-Lewis[1], Anthony Meljanac[1], Nuria Lara[1], Mark Johnson[1], Sarah Dallas[1], Yukiko Kitase[2], Lynda Bonewald[2]. [1]University of Missouri Kansas City, United States, [2]Indiana University, United States
Disclosures: LeAnn Tiede-Lewis, None

FRI-564 **Accelerated aging and bone loss in mice lacking PTH receptor in osteocytes**
*Yuhei Uda[1], Alejandro Kochen[1], Roberto Santos[1], Paola Divieti Pajevic[1], Dongmin Kwak[2], Guoxian Wei[2], Basya Pearlmutter[2], LaDora Thompson[2], Hiroaki Saito[3], Eric Hesse[3]. [1]Boston University Henry M. Goldman School of Dental Medicine, United States, [2]Boston University College of Health & Rehabilitation Sciences: Sargent College, United States, [3]University Medical Center Hamburg-Eppendorf, Germany
Disclosures: Yuhei Uda, None

OSTEOPOROSIS - ASSESSMENT

FRI-589 **MRI-based textural analysis of trabecular bone: a novel method for opportunistic screening of bone quality**
*Jonathan Cheah[1], Matthew Koff[1], Ryan Breighner[1], Bin Lin[1], Mikas Grewal[1], Emily Stein[1], Conor Jones[2], Janice Havasy[2]. [1]Hospital for Special Surgery, United States, [2]Weill Cornell Medicine, United States
Disclosures: Jonathan Cheah, None

FRI-591 **Local bone density defects in patients with femoral neck fracture**

*Luis Del Rio[1], Lorena Brance[1], Silvana Di Gregorio[2], Silvia Martinez[3], Ludovic Humbert[4], Patricia Sanchez[5]. [1]Densitometria. CETIR. Grupo Ascires, Spain, [2]Densitometria Ósea. CETIR. Grupo Ascires, Spain, [3]Reumatología. Hospital Mutua de Terrassa, Spain, [4]Galgo Medical, Spain, [5]Centre tecnología diagnostica, Spain

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**

*Iacopo Chiodini[1], Alberto Falchetti[1], Agostino Gaudio[2], Andrea Palermo[3], Nicola Napoli[3], Fabio Vescini[4], Daniela Merlotti[5], Stefano Gonnelli[5], Ranuccio Nuti[5], Luigi Gennari[5], Cristina Eller-Vainicher[6], Vincenzo Carnevale[7], Alfredo Scillitani[7], Giuseppe Pugliese[8], Domenico Rendina[9], Antonio Salcuni[10], Francesco Bertoldo[11], Vincenzo Toscano[12], Vincenzo Triggiani[13], Simone Cenci[14]. [1]Unit for Bone Metabolism Diseases and Diabetes and Lab of Endocrine and Metabolic Research, IRCCS Istituto Auxologico Italiano, Milan, Italy, Italy, [2]Department of Clinical and Experimental Medicine, University of Catania, University Hospital "G. Rodolico" Catania, Italy, [3]Department of Endocrinology and Diabetes, University Campus Bio-Medico, Rome, Italy, Italy, [4]Endocrinology and Metabolism Unit, University-Hospital S. M. Misericordia of Udine, Italy, [5]Department of Medicine, Surgery and Neurosciences, University of Siena, Italy, [6]Endocrinology Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy, [7]Unit of Endocrinology, "Casa Sollievo della Sofferenza" Hospital, IRCCS, San Giovanni Rotondo, Italy, [8]Department of Clinical and Molecular Medicine, "La Sapienza" University, and Diabetes Unit, Sant'Andrea University Hospital, Rome, Italy, [9]Department of Clinical Medicine and Surgery, "Federico II" University of Naples, Italy, [10]Endocrinology Unit, Department of Medical Sciences and Public Health, University of Cagliari, Italy, [11]Department of Medicine, University of Verona, Italy, [12]Department of Clinical and Molecular Medicine, "La Sapienza" University, Italy, [13]. Interdisciplinary Department of Medicine, Section of Internal Medicine, Geriatrics, Endocrinology and Rare Diseases. University of Bari "Aldo Moro", School of Medicine, Italy, [14]Division of Genetics and Cell Biology, San Raffaele Scientific Institute, Milan, Italy

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 Jepsen[1], Carrie Karvonen-Gutierrez[1], Sioban Harlow[1], John Randolph[1], Gregory Clines[1], Michelle Hood[1], Michael Elliott[1], Kathy Peters[2], Stephanie Harrison[2], Peggy Cawthon[2], Jane Cauley[3], Gail Greendale[4], Arun Karlamangla[4], Eric Orwoll[5]. [1]University of Michigan, United States, [2]California Pacific Medical Center Research Institute, United States, [3]University of Pittsburgh, United States, [4]University of California, Los Angeles, United States, [5]Oregon Health and Science University, United States

Disclosures: Karl Jepsen, None

ASBMR 2019 Annual Meeting Young Investigator Award

FRI-597 **Comparison of the predictive ability of quantitative and qualitative scoring methods of osteoporotic vertebral fractures using operational skeletal fragility outcomes**

*Fjorda Koromani[1], Katerina Trajanoska[1], Ling Oei[1], Carola Zillikens[1], Gabriel Krestin[1], Andre Uitterlinden[1], Edwin Oei[1], Fernando Rivadeneira[1], Enisa Shevroja[2]. [1]Erasmus MC, Netherlands, [2]Lausanne 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. Lee[1], Namki Hong[2], Yumie Rhee[2], Sundeep Khosla[3], Tony M. Keaveny[4]. [1]O.N. Diagnostics, United States, [2]Yonsei University College of Medicine, Republic of Korea, [3]Mayo Clinic, United States, [4]University 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 Leslie[1], Lisa Lix[1], John Schousboe[2], Suzanne Morin[3], Patrick Martineau[4], Helena Johansson [5], John Kanis[5], Eugene McCloskey[6], Nicholas Harvey[7]. [1]University of Manitoba, Winnipeg, Canada, Canada, [2]Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US; University of Minnesota, Minneapolis, US, United States, [3]McGill University, Montreal, Canada, Canada, [4]University of Manitoba, Winnipeg, Canada; Harvard Medical School, Boston, US, Canada, [5]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK; Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, United Kingdom, [6]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, [7]MRC 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**

*Patrick Martineau[1], William Leslie[2], Lisa Lix[2], John Schousboe[3], Didier Hans[4]. [1]University of Manitoba/Harvard Medical School, Canada, [2]University of Manitoba, Canada, [3]Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US/University of Minnesota, United States, [4]Center of Bone Diseases, Bone and Joints Department, Lausanne University Hospital & University of Lausanne, Lausanne, Sw, Lausanne, Switzerland, Switzerland

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 Adams[1], Bonnie Li[1], Denison Ryan[1], Richard Dell[1], Erik Geiger[2], Dennis Black[2]. [1]Kaiser Permanente Southern California, United States, [2]University 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**

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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 Koromani[1], Ling Oei[1], Katerina Trajanoska[1], Josje Schoufour[1], Taulant Muka[1], Oscar Franco[1], Arfan Ikram[1], Carola Zillikens[1], Andre Uitterlinden[1], Gabriel Krestin[1], Edwin Oei[1], Fernando Rivadeneira[1], Enisa Shevroja[2], Olivier Lamy[2], Didier Hans[2], Tassos Anastassiades[3], William Leslie[3], Robert Josse[4], Jerilynn Prior[4], Stephanie Kaiser[5], David Goltzman[6], Brian Lentle[7], Robert Josse[8], Jerilynn Prior[8], Eugene McCloskey[9]. [1]Erasmus MC, Netherlands, [2]Lausanne University Hospital, Switzerland, [3]University of Manitoba, Canada, [4]University of Toronto, Netherlands, [5]Dalhousie University, Canada, [6]McGill University, Canada, [7]University of British Columbia, Canada, [8]University of Toronto, Canada, [9]11The Mellanby 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 Li[1], Ching-Lung Cheung[1], Philip Chun-Ming Au[1], Kathryn Choon-Beng Tan[1], Ian Chi-Kei Wong[1], Pak-Chung Sham[1]. [1]The 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 Rodriguez[1], Peter Ebeling[1], Martin Ernst[2], Mads Nybo[3], Pernille Hermann[3], Daniel Prieto-Alhambra[4], Bo Abrahamsen[5]. [1]Monash University, Australia, [2]University of Southern Denmark, Denmark, [3]Odense University Hospital, Denmark, [4]University of Oxford, United Kingdom, [5]University 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 Sarodnik[1], Nicklas Rasmussen[2], Sandrine Bours[3], Nicolaas Schaper[4], Frank de Vries[5], Peter Vestergaard[6], Joop van den Bergh[7], Annemariek Driessen[8]. [1]NUTRIM Research School, Maastricht University, Maastricht, The Netherlands, Netherlands, [2]Steno Diabetes Center North Jutland, Aalborg University Hospital, Aalborg, Denmark, Denmark, [3]Department of Internal Medicine, Subdivision Rheumatology, Maastricht University Medical Centre+, CAPHRI Research School, Maastricht University, Maastricht, The Netherlands, Netherlands, [4]NUTRIM Research School, Maastricht University, Department of Internal Medicine, Subdivision Endocrinology, Maastricht University Medical Centre+, Maastricht, The Netherlands, Netherlands, [5]Utrecht University, Department of Pharmaceutical Sciences, Division of Pharmacoepidemiology & Clinical Pharmacology, Utrecht, the Netherlands, Netherlands, [6]Steno Diabetes Center North Jutland, Department of Endocrinology, Aalborg University Hospital, Aalborg, Denkmark, Denmark, [7]NUTRIM 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, [8]NUTRIM 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 Schini[1], Tatiane Vilaca[1], Richard Eastell[1], Susan Harnan[2], Anthea Sutton[2], Edith Poku[2], Steve Cummings[3]. [1]Academic Unit of Bone Metabolism, The University of Sheffield, UK, United Kingdom, [2]School of Health and Related Research, The University of Sheffield, UK, United Kingdom, [3]University 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 Schousboe[1], Suzanne Morin[2], Patrick Martineau[3], Lisa Lix[4], William Leslie[4]. [1]Park Nicollet Clinic and HealthPartners Institute, United States, [2]Research Institute of the McGill University Health Centre, Canada, [3]University of Manitoba and Harvard University, Canada, [4]University of Manitoba, Canada

Disclosures: John Schousboe, None

FRI-642 **Associations of Clinically Unrecognized vs Clinically Recognized Vertebral Fracture with Subsequent Mortality**

*John Schousboe [1], Lisa Lix[2], William Leslie[2], Suzanne Morin[3]. [1]Park Nicollet Clinic and HealthPartners Institute, United States, [2]University of Manitoba, Canada, [3]Research 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**

*John Schousboe[1], Suzanne Morin[2], Patrick Martineau[3], Lisa Lix[4], William Leslie[4]. [1]Park Nicollet Clinic and HealthPartners Institute, United States, [2]Research Institute of the McGill University Health Centre, Canada, [3]University of Manitoba and Harvard University, Canada, [4]University of Manitoba, Canada

Disclosures: John Schousboe, None

FRI-644 **Real-World Outcomes and Imminent Fractures After Index Fragility Fracture: A Population Study**

*Jonathan D Adachi[1], Jacques P Brown[2], Emil H Schemitsch[3], Jean-Eric Tarride[4], Ponda Motsepe-Ditshego[5], Natasha Burke[5], Stephen M Colgan[5], Lubomira Slatkovska[5]. [1]St Joseph's Healthcare, McMaster University, Canada, Canada, [2]CHU de Québec (CHUL) Research Centre, Laval University, Canada, Canada, [3]Division of Orthopaedics, Department of Surgery, Western University, Canada, Canada, [4]Department of Health Research Methods, Evidence and Impact (HEI), McMaster University, Canada, [5]Amgen 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

OSTEOPOROSIS - HEALTH SERVICES RESEARCH

FRI-687 **Real-World Outcomes and Cost of Management of Osteoporotic Fractures in Ontario, Canada**

*Jean-Eric Tarride[1], Johnathan D Adachi[2], Jacques P Brown[3], Emil H Schemitsch[4], Ponda Motsepe-Ditshego[5], Stephen M Colgan[5], Natasha Burke[5]. [1]Department of Health Research Methods, Evidence and Impact (HEI), McMaster University, Canada, Canada, [2]St Joseph's Healthcare, McMaster University, Canada, Canada, [3]CHU de Québec (CHUL) Research Centre, Laval University, Canada, Canada, [4]Division of Orthopaedics, Department of Surgery, Western University, Canada, Canada, [5]Amgen Canada Inc, Canada

Disclosures: Jean-Eric Tarride, Amgen Canada Inc, Consultant

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 Coassy[1], Hervé Locrelle[1], Thierry Thomas[1], Axel Svedbom[2], Roland Chapurlat[3], Bernard Cortet[4], Patrice Fardellone[5], Orcel Philippe[6], Christian Roux[7], John Kanis[8]. [1]INSERM U1059 - Université de Lyon, CHU de St-Etienne, France, [2]Mapi, Sweden, [3]INSERM Research Unit 1033–Université de Lyon, Hospices Civils de Lyon, France, [4]CHU de Lille, France, [5]CHU Amiens-Picardie, France, [6]Hôpitaux Universitaires Saint-Louis-Lariboisière-Fernand-Widal, AP–HP - Inserm UMR132 BIOSCAR, Université Paris Diderot, France, [7]Hôpital Cochin, AP-HP - INSERM U1153, Université Paris Descartes, France, [8]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, United Kingdom

Disclosures: Astrid Coassy, None

FRI-689 **Social Isolation: An Important Predictor of Adverse Events and Patient Reported Outcome Measures (PROMs) in Elderly Hip Fracture Patients**

*Dina Sheira[1], Joseph M. Lane[1], Jackie Finik[1], Marianna B. Frey[1], Serena Lian[1], Michael Tiongson[1], Kirsten Grueter[1], Lisa A. Mandl[1]. [1]Hospital for Special Surgery, United States

Disclosures: Dina Sheira, None

FRI-691 **Improving Pain Control Following Fractures in the Emergency Department: the PAINFREE Initiative**

*Suzanne Morin[1], David Lussier[1], Jose Morais[1], Céline Gélinas[1], Nancy Mayo[1], Michelle Wall[2], Marija Djekic-Ivankovic[3], Claudie Berger[3], Amel Baghdadli[3], Daoust Raoul[4]. [1]McGill University, Canada, [2]Research Institute of the McGill University Health Center, Canada, [3]Research Institute of the McGill University Health Centre, Canada, [4]Universtié de Montreal, 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 Beavers[1], Lauren Fasth[1], Nancy Waltman[2], Kevin Kupzyk[2], Laura Flores[2], Laura Bilek[2], Joan Lappe[3]. [1]Wake Forest University, United States, [2]University of Nebraska Medical Center, United States, [3]Creighton 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 Flores[1], Sarah Nelson[1], Kevin Kupzyk[1], Nancy Waltman[1], Sophia Pankratz[1], Laura Bilek[1], Joan Lappe[2]. [1]University of Nebraska Medical Center, United States, [2]Creighton 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 Harding[1], Benjamin K Weeks[1], Lisa J Weis[2], Conor Lambert[3], Steven L Watson[3], Belinda R Beck[3]. [1]School of Allied Health Sciences, Griffith University, Australia, [2]The Bone Clinic, Australia, [3]School 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 Hartley[1], Jonathan P Folland[1], Katherine Brooke-Wavell[1], Robert Kerslake[2]. [1]NCSEM, SSEHS, Loughborough University, United Kingdom, [2]Nottingham 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 Lambert[1], Amy Harding[1], Steven Watson[1], Benjamin Weeks[1], Belinda Beck[2]. [1]1 School of Allied Health Sciences, Griffith University, Gold Coast, Australia 2 Menzies Health Institute Queensland, Griffith University, Gold Coast, Australia , Australia, [2]1 School of Allied Health Sciences, Griffith University, Gold Coast, Australia 2 Menzies Health Institute Queensland, Griffith University, Gold Coast, Australia 3 The Bone Clinic, Brisbane, Queensland, Australia, Australia

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OSTEOPOROSIS - PATHOPHYSIOLOGY

FRI-728 **TRAF3 in mesenchymal progenitor cells limits low-level chronic inflammation associated with osteoporosis by inhibiting GSK-3β induced NF-KB activation**

*Akram Ayoub[1], Rong Duan[2], Jinbo Li[2], Lianping Xing[2], Zhenqiang Yao[2], Brendan Boyce[2]. [1]University of Rochester Medical Center , United States, [2]University 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 Li[1], Yilu Zhou[1], Chantal de Bakker[1], Hongbo Zhao[1], Luqiang Wang[1], Leilei Zhong[1], Lutian Yao[1], Ling Qin[1], Xiaowei Sherry Liu[1]. [1]University 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 Reagan[1], Samantha Costa[1], Heather Fairfield[1]. [1]Maine 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 Alencar[1], iana de Araujo[1], Luciana Parreiras e Silva[1], Adriana Carvalho[1], Marcello Nogueira Barbosa[1], Wilson Salgado Jr[1], Francisco Jose de Paula[1], Carlos Salmon[2]. [1]Ribeirao Preto Medical School, USP, Brazil, [2]FFCLRP, USP, Brazil

Disclosures: Maria Augusta Alencar, None

FRI-738 **Utility of Trabecular Bone Score (TBS) for Fracture Risk Assessment in Glucocorticoid-Induced Osteoporosis**

*Helena Florez[1], Silvia Ruiz-Gaspà[1], Ana Monegal[1], Núria Guañabens[1], Pilar Peris[1], José Hernández-Rodríguez [2], Sergio Prieto-González [2], Maria C. Cid[2], Africa Muxi[3], Josep Lluis Carrasco[4]. [1]Metabolic Bone Diseases Unit. Department of Rheumatology. Hospital Clinic, University of Barcelona, Spain, [2]Vasculitis Research Unit, Department of Autoimmune Diseases, Hospital Clínic, University of Barcelona, Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona, Spain., Spain, [3]Department of Nuclear Medicine. Hospital Clinic, University of Barcelona, Spain, [4]Biostatistics, 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 Hong[1], Jung Ho Kim[1], Heejae Jung[1], Woon Ji Lee[1], Hyeon Chang Kim[1], Yumie Rhee[1], Graham Treece[2], J. Keenan Brown[3]. [1]Yonsei University College of Medicine, Republic of Korea, [2]Department of Engineering, University of Cambridge, United Kingdom, [3]Mindways, 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**

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Disclosures: Xiaoyu Li, None

FRI-744 **Subclinical hyperthyroidism is associated with increased fracture risk: The MrOS Sweden Study**

*Johan Svensson[1], Claes Ohlsson[1], Dan Mellström[1], Magnus Karlsson[2], Mattias Lorentzon[3], Catharina Lewerin[4]. [1]Center for Bone and Arthritis Research at the Sahlgrenska Academy (CBAR), Institute of Medicine, University of Gothenburg, Sweden, [2]Clinical and Molecular Osteoporosis Research Unit, Department of Clinical Sciences and Orthopedics, Lund University, Sweden, [3]Geriatric 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, [4]Department of Hematology and Coagulation, Sahlgrenska University Hospital, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden

Disclosures: Johan Svensson, None

OSTEOPOROSIS - TREATMENT

FRI-765 **A sensitive method to monitor the migration of human bone marrow mesenchymal stem cells in mice models.**

*Alvaro del Real[1], Carolina Sañudo[1], Carmen Valero[1], Jose A. Riancho[1], Laura Lopez-Delgado[2], Maria I. Perez_nuñez[3], Esther Laguna[3], Guillermo Menendez[3], Ana Alfonso[4], Belen Garcia-Montesinos[5], Diego Ferreño[6], Jose A. Sainz-Aja[6], Ana Santurtun[7]. [1]Department of Internal Medicine, Hospital Universitario Marqués de Valdecilla-IDIVAL, University of Cantabria, Santander, Spain, Spain, [2]Department of Internal Medicine, Hospital Universitario Marqués de Valdecilla-IDIVAL, University of Cantabria, Santander, Spai, Spain, [3]Department of Traumatology/Hospital U M Valdecilla, University of Cantabria, Santander, Spain, Spain, [4]Department of Traumatology/Hospital U M Valdecilla, University of Cantabria, Santander, Spai, Spain, [5]Department of Maxillofacial Surgery/Hospital U M Valdecilla, University of Cantabria, Santander, Spain, Spain, [6]LADICIM (Laboratory of Materials Science and Engineering), University of Cantabria, E.T.S. de Ingenieros de Caminos, Canales y Puertos, Av/Los Castros 44, 39005 Santander, Spain, Spain, [7]Unit of Legal Medicine, Department of Physiology and Pharmacology, University of Cantabria, Santander, Spain, Spain

Disclosures: Alvaro del Real, None

FRI-766 **Modeling-based Bone Formation Persists in the Femoral Neck Despite Remodeling Inhibition in Subjects Treated with Denosumab**

*David W Dempster[1], Jeri W Nieves[1], Felicia Cosman[1], Peter W Butler[2], Li Chen[2], Rachel B Wagman[2], Mathias P Bostrom[3], Hua Zhou[4], Nicola Pannacciulli[5]. [1]Columbia University, United States, [2]Amgen Inc., United States, [3]Hospital for Special Surgery, United States, [4]Helen Hayes Hospital, United States, [5] Amgen Inc., United States

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)**

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

FRI-770 **A POST HOC ANALYSIS OF ROMOSOZUMAB EFFICACY AND BASELINE FRACTURE RISK – GREATER REDUCTION IN FRACTURE OUTCOMES IN PATIENTS AT HIGHER RISK**

*Eugene McCloskey[1], Mattias Lorentzon[2], Helena Johansson[3], John Kanis[3], Nicholas Harvey[4]. [1]Centre for Integrated research in Musculoskeletal Ageing, University of Sheffield, United Kingdom, [2]Sahlgrenska Academy, University of Gothenburg, Sweden, [3]Mary McKillop Health Institute, Australian Catholic University, Australia, [4]MRC 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 Betts[1], Charles Ledoux[1], Daniele Boaretti[1], Ralph Müller[1], Mauricio Aguilera[2], Najma Saleem[2], Mauricio Aguilera[3], Najma Saleem[3]. [1]Institute for Biomechanics, ETH Zurich, Switzerland, [2]Amgen Inc., Mexico, [3]Amgen Inc., United States

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FRI-774 **Is severely suppressed bone turnover in patients on long term bisphosphonate treatment causally related atypical femoral fracture?**
*Shijing Qiu[1], George Divine[1], Elizabeth Warner[1], Sudhaker Rao[1]. [1]Henry 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. Ramchand[1], Joy N. Tsai[1], Natalie L. David[1], Benjamin Z. Leder[1], Hang Lee[2], Richard Eastell[3]. [1]Department of Medicine, Endocrine Unit, Massachusetts General Hospital and Harvard Medical School, United States, [2]Biostatistics Center, Massachusetts General Hospital and Harvard Medical School, United States, [3]Academic Unit of Bone Metabolism, University of Sheffield, United Kingdom
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FRI-776 **Risk predictors for seniors at imminent risk of fracture**
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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 Shyu[1], Yi-Jun Lin[1], Tzu-Hui Chu[1], Cheng-Yuan Hsiao[1], Pei-Jiun Tsai[2], Tien-Hua Chen[2]. [1]Department of Biology and Anatomy, National Defense Medical Center, Taiwan, Province of China, [2]Institute 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 Sugimoto[1], Masataka Shiraki[2], Hiroshi Hagino[3], Takeshi Yoshimura[4], Toshitaka Nakamura[5]. [1]Eikokai Ono Hospital, Japan, [2]Research Institute and Practice for Involutional Diseases, Japan, [3]School of Health Science, Tottori University, Japan, [4]Medical Affairs Department, Asahi Kasei Pharma Corporation, Japan, [5]Toto Sangenjaya Rehabilitation Hospital, Japan
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FRI-781 **Bisphophonates Prevent Bone Loss Associated with Denosumab Treatment Discontinuation**
*María Belén Zanchetta[1], Carolina Pelegrin[1], Fernando Silveira[2], Cesar Bogado[2], Jose Zanchetta[2], Helena Salerni[3], Pablo Costanzo[3]. [1]IDIM, Universidad del Salvador, Argentina, [2]IDIM, Argentina, [3]Consultorios 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 Macleod[1], Keisha Cawley[1], Qiang Fu[1], Melda Onal[1], Charles O'Brien[1]. [1]University 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 Tyagi[1], Emory Hsu[1], Mingcan Yu[1], Jau-Yi Li[1], Jonathan Adams[1], Rheinallt M. Jones [1], Roberto Pacifici[1]. [1]Emory University, United States
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PRECLINICAL MODELS OF MUSCULOSKELETAL DISORDERS

FRI-833 **Insights from Lexicon Pharmaceuticals' Genome5000™ Mouse Gene Knockout Campaign**

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Disclosures: Robert Brommage, Lexicon Pharmaceuticals, Grant/Research Support

FRI-834 **Novel model of restricted mobility induced skeletal detriment in zebrafish (Danio rerio)**

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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 Kim[1], Yinshi Ren[1], Olumide Aruwajove[1], Zhuo Deng[1], Thomas Mitchell[2], Michael Kutschke[2]. [1]Texas Scottish Rite Hospital, United States, [2]UT 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 Kittaka[1], Tetsuya Yoshimoto[1], Yasuyoshi Ueki[1], Collin Schlosser[2], Mikihito Kajiya[3], Hidemi Kurihara[3], Ernst Reichenberger[4]. [1]Department of Biomedical Sciences and Comprehensive Care, Indiana University School of Dentistry, Indianapolis, United States, [2]Department of Orthodontics and Dentofacial Orthopedics, University of Missouri-Kansas City, School of Dentistry, United States, [3]Department of Periodontal Medicine, Applied Life Sciences, Institute of Biomedical & Health Sciences, Graduate School of Biomedical & Health Sciences, Hiroshima University, Japan, [4]Department 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 Maye[1], Tulika Sharma[1], Ernst Reichenberger[1], Archana Sanjay[1], Justin Cotney[1]. [1]UCONN Health Center, United States

Disclosures: Peter Maye, None

FRI-840 **CaMKK2-AMPK-p38 MAPK Axis in Osteoarthritis**

*Uma Sankar[1], Elsa Mevel[1], Justin Williams[1]. [1]Indiana 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 Zieba[1], Elda Munivez[1], Alexis Castellon[1], Brendan Lee[1]. [1]Baylor 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 Mullarkey[1], Heike Arlt[1], Dorothy Hu[2], Roland Baron[2], Tadatoshi Sato[3], Marc Wein[4], Bruce Mitlak[5], Beate Lanske[6], Tatiana Besschetnova[6]. [1]Radius Health, Inc., United States, [2]Harvard Dental and Harvard Medical School, United States, [3]Endocrine Unit, Massachusetts General Hospital, Harvard Medical School, Boston, United States, [4]Endocrine Unit, Massachusetts General Hospital, Harvard Medical School, United States, [5]Radius Health, Inc, United States, [6]Radius 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 Gerbaix[1], Serge Ferrari[1], Bernard Roche[2], Marie-Hélène Lafage Proust[2]. [1]Division of Bone Diseases, Geneva University Hospitals and Faculty of Medicine, Geneva, Switzerland, Switzerland, [2]INSERM 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 Sato[1], Meloney Cregor[1], Kevin McAndrews[1], Sam Bosco[1], David B Burr[1], Cindy H Nakatsu[2], Gretel G Pellegrini[3], Linda D McCabe[4], George P McCabe[4], Mario G Ferruzzi[5], Mary A Lila[5], Munro Peacock[6], Connie M Weaver[7], Teresita M Bellido[8]. [1]Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, [2]Department of Agronomy, Purdue University, United States, [3]Department 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, [4]Department of Statistics, Purdue University, United States, [5]Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, United States, [6]Department of Medicine, Division of Endocrinology, Indiana University School of Medicine, United States, [7]Department of Nutrition, Purdue University, United States, [8]Department 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 Wang[1], Wei-Ju Tseng[1], Hongbo Zhao[1], Nathaniel Dyment[1], Xiaowei Sherry Liu[1]. [1]University 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-Rotman[1], Natasha Appelman-Dijkstra[1], Alison Boyce[2], Bas Majoor[3], Deborah Gensburger[4], Michiel van de Sande[5], Sander Dijkstra[5], Roland Chapurlat[6]. [1]Center for Bone Quality, dept. of Internal Medicine, division of Endocrinology, Leiden University Medical Center (LUMC), Netherlands, [2]Skeletal Disorders and Mineral Homeostasis Section, National Institute of Dental and Craniofacial Research, National Institutes of Health, United States, [3]Dept. of Orthopaedic surgery, Leiden University Medical Center (LUMC), Netherlands, [4]INSERM UMR 1033, University of Lyon, Hôpital Edouard Herriot, France, [5]Dept. of Orthopaedic surgery, Leiden University Medical Center (LUMC), , Netherlands, [6]INSERM 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 Cohen[1], Stephanie Shiau[1], Sanchita Agarwal[1], Mafo Kamanda-Kosseh[1], Mariana Bucovsky[1], John Williams[1], Elizabeth Shane[1], Robert R. Recker[2], Joan M. Lappe[2], Julie Stubby[2], David W. Dempster[3], Hua Zhou[3]. [1]Columbia University Irving Medical Center, United States, [2]Creighton University School of Medicine, United States, [3]Helen 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 Ing[1], Michael Mannstadt[2], Lars Rejnmark[3], István Takács[4], Ivy Song[5], Helen Shapiro[5], Ping He[5], Richard D Finkelman[5]. [1]Division of Endocrinology, Diabetes and Metabolism, Ohio State University Wexner Medical Center, United States, [2]Endocrine Unit, Massachusetts General Hospital and Harvard Medical School, United States, [3]Department of Clinical Medicine, Aarhus University Hospital, Denmark, [4]Department of Medicine, Faculty of Medicine, Semmelweis University, Hungary, [5]Shire 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 Seefried[1], Dominik Rak[1], Franca Genest[1], Ulrike von Hehn[2], Anna Petryk[3]. [1]Orthopaedic Clinic King-Ludwig-Haus, University of Würzburg, Germany, [2]Medistat GmbH, Germany, [3]Alexion 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 Kotwal[1], Alejandro Ferrer[1], Rajiv Kumar[1], Ravinder Singh[1], Vishakantha Murthy[1], Laura Schultz-Rogers[1], Brandan Lanpher[1], Eric Klee[1], Robert Wermers[1], Michael Zimmermann[2], Demetrios Braddock[3]. [1]Mayo Clinic, United States, [2]Medical College of Wisconsin, United States, [3]Yale 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. Whyte[1], Deborah J. Veis[1], S. Deepak Amalnath[2], Suhas Alur[2], William H. McAlister[3], Marc D. McKee[4], Margaret Huskey[5], Shenghui Duan[5], Vinieth N. Bijanki[6], Steven Mumm[7]. [1]Center 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, [2]Department of Medicine, Jawaharlal Institute of Postgraduate Medical Education and Research, India, [3]Mallinckrodt Institute of Radiology, Washington University School of Medicine at St. Louis Children's Hospital, United States, [4]Faculty of Dentistry, and Department of Anatomy and Cell Biology, McGill University, Canada, [5]Division of Bone and Mineral Diseases, Department of Internal Medicine, Washington University, United States, [6]Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children-St. Louis, United States, [7]Center 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 Allen[1], Eileen Shore[1], Mary Mullins[1]. [1]University 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 Bok[1], Dong Yeon Shin[1], Mark Eiseman[1], Ren Xu[1], Alisha Yallowitz[1], Na Li[1], Matthew B. Greenblatt[1], Jae-Hyuck Shim[2]. [1]Department of Pathology and Laboratory Medicine, Weill Cornell Medicine, United States, [2]Department 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 Canalis[1], Jungeun Yu[1], Tamar Grossman[2], Michele Carrer[3]. [1]UConn Health, United States, [2]Ionis Pharmaceuticals, Inc, United States, [3]Ionis 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 Ram[1], Joan C Marini[1], Ghazal Hedjazi[2], Stéphane Blouin[2], Paul Roschger[2], Klaus Klaushofer[2], Nadja Fratzl-Zelman[2], Chris Stephan[3], Kenneth M Kozloff[3]. [1]Section 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, [2]Ludwig Boltzmann Institute of Osteology, 1st Medical Department, Hanusch-Hospital, Austria, [3]Departments 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 Makareeva[1], Shakib Omari[1], Anna M. Roberts-Pilgrim[1], Laura Gorrell[1], Ed Mertz[1], Sergey Leikin[1], Basma Khoury[2], Chris Stephan[2], Kenneth Kozloff [2]. [1]National Institutes of Health, United States, [2]University of Michigan, United States

Disclosures: Elena Makareeva, None

FRI-925 **SIRT1 Promoter SNP rs932658 Associated with Bisphosphonates-related Osteonecrosis of the Jaw**

*Guang Yang[1], Sonal Singh[1], Taimour Langaee[1], Jatinder Lamba[2], Yan Gong[2]. [1]Department of Pharmacotherapy and Translational Research and Center for Pharmacogenomics and Precision Medicine, College of Pharmacy, University of Florida., United States, [2]Department 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 Yoshimoto[1], Yasuyoshi Ueki[1], Mizuho Kittaka[1], Collin Schlosser[2]. [1]Department of Biomedical Sciences and Comprehensive Care, Indiana University School of Dentistry, United States, [2]Department 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 Alajlouni[1], Tuan Nguyen[1], John Eisman[1], Jacqueline Center[1], Dana Bliuc[2], Thach Tran[2]. [1]Garvan 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, [2]Garvan 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 Binkley[1], Christopher Sempos[2], Ramon Durazo-Arvizu[3], Joan Lappe[4]. [1]University of Wisconsin Madison, United States, [2]Vitamin D Standardization Program, United States, [3]Loyola University Chicago, United States, [4]Creighton 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 Falkdal[1], Anna Nilsson[1], Lisa Johansson[1], Daniel Sundh[1], Mattias Lorentzon[1]. [1]Geriatric Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden

Disclosures: Maria Falkdal, None

FRI-956 **TRAF6 mediates impaired muscle regeneration induced by TNFα**

*Xiangjiao Yi[1], Jinbo Li[1], Lianping Xing[1], Zhenqiang Yao[2], Brendan Boyce[2]. [1]Pathology , United States, [2]Pathology, 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 Cusano[1], Mishaela Rubin[2], John Williams[2], Sanchita Agarwal[2], Rukshana Majeed[2], Beatriz Omeragic[2], John Bilezikian[2], Gaia Tabacco[3], Yu-Kwang Donovan Tay[4]. [1]Lenox Hill Hospital, United States, [2]Columbia University Medical Center, United States, [3]University Campus Bio-Medico, Italy, [4]Singapore 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 Leahy[1], Barbara Garita[1], Po-Hung Wu[1], Gabrielle Joseph[1], Misung Han[1], Roland Krug[1], Thomas Link[1], Galateia Kazakia[1]. [1]UCSF, 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 Alalawi[1], Hajar Abu Alrob [1], Haniah Shaikh[2], Manoela Braga[2], Zubin Punthakee[2], Rafik El Werfalli [2], J.E.M. Young[2], Aliya Khan[2], Adam Millar [3], Muhammad Shrayyef[3], Susan Teschke [3], Heather Zariffeh [4], Iman M'Hiri[4], Tayyab Khan [5], Adam Waldbilling[6]. [1]McMaster University, Canada, [2]McMaster University, Canada, [3]University of Toronto, Canada, [4]Bone Research and Education Centre, Canada, [5]LCM, Canada, [6]CHEO, Canada

Disclosures: Yousef Alalawi, None

SAT-4 **Risk Factors for Vertebral Fracture in Primary Hyperparathyroidism**

*Minghao Liu[1], John Williams[1], Shonni Silverberg[1], Marcella Walker[1]. [1]Columbia 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 Naciu[1], Gaia Tabacco[1], Daria Maggi[1], Luca D'Onofrio[1], Silvia Briganti[1], Nicola Napoli[1], Paolo Pozzilli[1], Silvia Manfrini[1], Andrea Palermo[1], Stefania Falcone[2], Andrea Fabbri[2], Assunta Santonati[3], Domenico Castellitto[4], Alessandro Casini[4], Roberto Cesareo[4], Diana Lelli[5], Claudio Pedone[5]. [1]Unit of Endocrinology, University Campus Bio-Medico, Italy, [2]Unit of Endocrinology and Metabolic Diseases, CTO A. Alesini Hospital, University Tor Vergata, Italy, [3]Department of Endocrinology, San Giovanni Addolorata Hospital, Italy, [4]Thyroid and Metabolic Bone Diseases Center, Santa Maria Goretti Hospital, Italy, [5]Unit 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 Sakurai[1], Yuko Sakamoto[1], Sung-Gon Kim[1], Hideaki Nakajima[2], Daiki Ogishima[3], Shozo Matsuoka[3], Yuka Honda[4], Mitsuyoshi Suzuki[5], Toshiaki Shimizu[5], Akifumi Tokita[6], Kazuo Kaneko[7]. [1]Department of Orthopaedics, Juntendo University Nerima Hospital, Japan, [2]Center for Global Environmental Research, National Institute for Environmental Studies, Japan, [3]Department of Obstetrics-gynecology, Juntendo University Nerima Hospital, Japan, [4]Graduate School of Media and Governance, Keio University, Japan, [5]Department of Pediatrics, Juntendo University Graduate School of Medicine, Japan, [6]Clinic Bambini, Japan, [7]Department 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 Saponaro[1], Filomena Cetani[2], Laura Mazoni[2], Matteo Apicella[2], Marina Di Giulio[2], Francesco Carlucci[2], Elena Pardi[2], Simona Borsari[2], Claudio Marcocci[2], Marco Scalese[3]. [1]Department of Pathology, University of Pisa, Pisa, Italy, [2]Department of Clinical and Experimental Medicine, Univeristy of Pisa, Italy, [3]National 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 Zhao[1], Zhe Wei[1], Zhen-lin Zhang[1]. [1]Metabolic 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 Agarwal[1], Adi Cohen[1], Mafo Kamanda-Kosseh[1], Mariana Bucovsky[1], Elizabeth Shane[1]. [1]1. Division 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 Bailey[1], Tessabella Magliochetti[1], Deepak Vashishth[1], Ewan McNay[2]. [1]Rensselaer Polytechnic Institute, United States, [2]University 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 Macdonald[1], Claudie Berger[2], Neora Pick[3], Evelyn Maan[3], Helene Cote[4], Melanie Murray[5], Jerilynn Prior[6]. [1]Department of Family Practice, University of British Columbia, Canada, [2]CaMos Methods Centre, McGill University, Canada, [3]Oak Tree Clinic, BC Women's Hospital & Health Centre, Canada, [4]Department of Pathology and Laboratory Medicine, University of British Columbia, Canada, [5]Division of Infectious Diseases, Faculty of Medicine, University of British Columbia, Canada, [6]Department 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 Elizondo[1], Scott Lenfest[1], Sandhya Sihra[1], Jennifer Kosniewski[1], Jeremy Black[1], Zachary Kohn[1], Jessica Brezicha[2], Susan Bloomfield[3], Harry Hogan[4]. [1]Texas A&M University, Dept. of Mechanical Engineering, United States, [2]Texas A&M University, Dept. of Biomedical Engineering, United States, [3]Texas A&M University, Dept. of Health & Kinesiology, United States, [4]Texas 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 Ishikawa[1], Soji Tani[1], Koki Tsuchiya[1], Akira Matsuoka[1], Hiroshi Maruyama[1], Haruka Emori[1], Ryo Yamamura[1], Yusuke Dodo[1], Ryoji Usui[1], Tomoyuki Ozawa[1], Yusuke Oshita[1], Yoshifumi Kudo[1], Toshiyuki Shirahata[1], Takashi Nagai[1], Tomoaki Toyone[1], Katsunori Inagaki[1], Syunsuke Segawa[2]. [1]Department of Orthopaedic Surgery, Showa University School of Medicine, Japan, [2]Department 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 Lima[1], Madhumathi Rao[1], Amita Maibam[1], Harmut H Malluche[1]. [1]University of Kentucky, United States

Disclosures: Florence Lima, None

ASBMR 2019 Annual Meeting Young Investigator Award

SAT-29 **Mineral deposition is required to repair diffuse damage in bone in vivo**

*Leila Mehraban Alvandi[1], Donna Chen[1], Robert J Majeska[1], Rinaldo Florencio-Silva[2], Zeynep Seref-Ferlengez[3], Mitchell B. Schaffler[4]. [1]1Department of Biomedical Engineering, City College of New York, New, United States, [2]Federal University of São Paulo – Medical school, Brazil, [3]Albert Einstein College of Medicine, Orthopedic Surgery, New York NY, United States, [4]Department 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**

*Jeffry Nyman[1], Sasidhar Uppuganti[1], Nora Ward[2], Mark Does[2]. [1]Vanderbilt University Medical Center, United States, [2]Vanderbilt University, United States

Disclosures: Jeffry 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. Pagnotti[1], Reid Wilson[1], Trupti Trivedi[1], Sutha K. John[1], Yun She[1], Sreemala Murthy[1], Laura E. Wright[1], Sukanya Suresh[1], William R. Thompson[1], Khalid S. Mohammad[1], Theresa A. Guise[1], Clinton T. Rubin[2]. [1]Indiana University, United States, [2]Stony Brook University, United States

Disclosures: Gabriel M. Pagnotti, None

SAT-32 **Zoledronate and Raloxifene Combination Therapy Enhances Material Properties of Mouse Bone**

*Katherine Powell[1], Cayla Skaggs[1], Alexis Pulliam[1], Joseph Wallace[1], Alycia Berman[2], Matthew Allen[3]. [1]Indiana University Purdue University Indianapolis, Department of Biomedical Engineering, United States, [2]Purdue University, Weldon School of Biomedical Engineering, United States, [3]Indiana 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 Quillen[1], Donald Moravits[2], Robert Fajardo[3], Karl Jepsen[4], Todd Bredbenner[5]. [1]Wake Forest School of Medicine, United States, [2]Southwest Research Institute, United States, [3]University of the Incarnate Word School of Osteopathic Medicine, United States, [4]University of Michigan Medical School, United States, [5]University of Colorado Colorado Springs, United States

Disclosures: Ellen Quillen, None

SAT-34 **Comparison of trabecular bone from human cervical, thoracic and limbar spine using Micro - CT**

*Guido Schröder[1], Benjamin Jabke[1], Marko Schulze[2], Olga Sahmel[3], Heiner Martin[3], Reimer Andresen[4], Hans-Christof Schober[5]. [1]University of Rostock Medical faculty, Germany, [2]University of Rostock Medical faculty Anatomical Institut, Germany, [3]University of Rostock Medical faculty Institut for biomedical engineering, Germany, [4]Westcoast Hospital Heide, Institut for Interventional Radiology, Germany, [5]South Hospital Rostock, Dept. Internal Med., Germany

Disclosures: Guido Schröder, None

SAT-35 **Quantitation of Citrate in Mineral and Organic Compartments of Bone**

*Grazyna E. Sroga[1], Deepak Vashishth[1], Zehai Wang[2]. [1]Rensselaer Polytechnic institute, United States, [2]Rensselaer 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 Surowiec[1], Kenneth Kozloff[1], Sundaresh Ram[2], Craig Galban[2], Djaudat Idiyatullin[3], Robert Goulet[4]. [1]Departments of Orthopaedic Surgery and Biomedical Eng., University of Michigan, United States, [2]Department of Radiology, University of Michigan, United States, [3]Department of Radiology, University of Minnesota, United States, [4]Department 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 Tice[1], Stacyann Bailey[1], Deepak Vashishth[1], Emily Gallagher[2]. [1]Rensselaer Polytechnic Institute, United States, [2]Mount 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 Wölfel[1], Anna Kornelia Siebels[1], Liang-Yu Ma[1], Annika vom Scheidt[1], Felix Nikolai Schmidt[1], Michael Amling[1], Katharina Jähn[1], Björn Busse[1], Elizabeth Zimmermann[2], Birgit Wulf[3], Herbert Mushumba[3], Klaus Püschel[3], Eric Schaible[4]. [1]University Medical Center Eppendorf, Dept. of Osteology and Biomechanics, Germany, [2]University Medical Center Hamburg-Eppendorf,Department of Osteology and Biomechanics; Shriners Hospitals for Children Canada, Montreal, Canada, Germany, [3]University Medical Center Eppendorf, Dept. of Forensic Medicine, Germany, [4]Advanced 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 Zamarioli[1], Mariana Butezloff[1], Kelly Astolpho[1], Joao Ximenez[1], Jose Volpon[1]. [1]Ribeirão 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 Curtis[1], Rebecca Moon[1], Stefania D'Angelo[1], Sarah Crozier[1], Hazel Inskip[1], Keith Godfrey[1], Cyrus Cooper[1], Nicholas Harvey[1], Nicholas Bishop[2], Sujatha Gopal[2], Stephen Kennedy[3], Aris Papageorghiou[3], Robert Fraser[4], Saurabh Gandhi[4], Inez Schoenmakers[5], Ann Prentice[6], Kassim Javaid[7], Richard Eastell[8]. [1]MRC Lifecourse Epidemiology Unit, University of Southampton, United Kingdom, [2]Academic Unit of Child Health, Sheffield Children's Hospital, United Kingdom, [3]Nuffield Department of Women's and Reproductive Health, John Radcliffe Hospital, University of Oxford, United Kingdom, [4]Department of Obstetrics and Gynaecology, Sheffield Hospitals NHS Trust, University of Sheffield, United Kingdom, [5]Department of Medicine, Faculty of Medicine and Health Sciences, University of East Anglia, United Kingdom, [6]Nutrition and Bone Health, University of Cambridge, United Kingdom, [7]NIHR Oxford Biomedical Research Centre, University of Oxford, United Kingdom, [8]Academic 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**

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SAT-75 **Molecular Mechanisms for Pamidronate Rescue of Post-burn Muscle Loss in Children**

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SAT-76 **Vitamin D level of toddlers with "physiologic" genu varum is lower than that of control toddlers: 1:2 case-control study**

*Yuko Sakamoto[1], Muneaki Ishijima[2], Kazuo Kaneko[2], Satoshi Nakano[3], Mitsuyoshi Suzuki[3], Lizu Liu[4], Akifumi Tokita[5], Sung-Gon Kim[6], Masahiko Nozawa[6], Toshiaki Shimizu[7]. [1]Dept. of Orthopedics, Juntendo Nerima Univ. Hosp., Japan, [2]Department of Medicine for Orthopaedics and Motor Organ, Juntendo University Graduate School of Medicine, Japan, [3]Department of Pediatrics, Juntendo University Graduate School of Medicine, Tokyo, Japan, Japan, [4]Sportology Center, Juntendo University Graduate School of Medicine, Tokyo, Japan, Japan, [5]Clinic Bambini, Japan, [6]Department of Orthopaedics, Juntendo University Nerima Hospital, Japan, [7]Department of Pediatrics, Juntendo University Graduate School of Medicine, Japan

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BONE INTERACTIONS WITH MUSCLE AND OTHER TISSUES

SAT-84 **Silicon Oxynitride Coatings Enhance Bone Healing by Inducing Antioxidant Biomarkers in Mandibular Implants**

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SAT-85 **Mast Cell Deficiency Partially Mitigates Acute Bone Resorption Following Muscle Paralysis**

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Posters

SAT-86 **WNT3a levels decline during aging and further decline in osteoporotic women-Implications for Bone-Muscle Crosstalk**

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SAT-87 **Low Protein Diet Induces Bone Loss and Renal Complications in Male Mice**

*Debra L. Irsik[1], Ke-hong Ding[1], Jianrui Xu[1], Baolin Kang[1], Qing Zhong[1], Meghan E. McGee-Lawrence[1], Wendy B Bollag[1], Carlos M Isales[1]. [1]Augusta University, United States

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SAT-88 **RIPK1 Inhibition Improves Experimental Autoimmune Arthritis Via Suppression Of Osteoclastogenesis**

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SAT-89 **Regulation of megakaryocytes on bone metabolism in a paracrine manner**

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SAT-90 **Biglycan Regulates Inflammation and Bone Formation During Fracture Healing**

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SAT-91 **Osteocalcin ameliorates the cognitive dysfunctions in APP/PS1 mice**

*Chang Shan[1], Yan-fang Hou[1], Shu-min Wang[1], Jian-min Liu[1], Yan-ling Gong[2], Qian-qian Zhuang[2], Sheng-tian Li[2]. [1]Shanghai Jiao-tong University School of Medicine, China, [2]Shanghai Jiao-tong University, China

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ASBMR 2019 Annual Meeting Young Investigator Award

SAT-92 **The Muscle Metabolite, β-aminoisobutyric acid, L-BAIBA, Enhances the Effects of Suboptimal Mechanical Loading on New Bone Formation.**

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SAT-93 **Distinctive role of muscle-specific ubiquitin ligases in bone microarchitecture**

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SAT-95 **Fibroblast growth factor 23 induces ventricular arrhythmias and prolongs QTc interval in mice**

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SAT-96 **Impaired PTH-stimulated periosteal proliferation, Wnt activity and fracture healing in Fgf2 knockout mice**
*Liping Xiao[1], Marja Hurley[1]. [1]UConn Health, United States
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SAT-97 **Tissue clearing of both hard and soft tissue organs with the PEGASOS method**
*Dian Jing[1], Hu Zhao[1]. [1]Texas A&M University, United States
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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 Costa[1], Heather Fairfield[1], Mariah Farrell[1], Connor Murphy[1], Ashley Soucy[1], Michaela Reagan[1], Gill Holdsworth[2]. [1]Maine Medical Center Research Institute, United States, [2]UCB Pharma, United Kingdom
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SAT-125 **Anemia in elderly men predicts hip fracture and nonvertebral osteoporotic fractures; The MrOS Sweden Study**
*Hallgerdur Kristjansdottir[1], Dan Mellström[2], Liesbeth Vandenput[2], Claes Ohlsson[2], Peter Johansson[3], Catharina Lewerin[3], Magnus Karlsson[4], Hans Herlitz[5], Mattias Lorentzon[6]. [1]Department of Hematology and Coagulation, Sahlgrenska University Hospital, Department of Internal Medicin and Clinical Nutrition, Institue of Medicine, Sahlgrenska Academy, University of Gothenburg Sweden, Sweden, [2]Center for Bone and Arthritis Research at the Sahlgrenska Academy (CBAR), Institute of Medicine, University of Gothenburg, Gothenburg, Sweden, Sweden, [3]Department of Hematology and Coagulation, Sahlgrenska University Hospital, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, Sweden, [4]Clinical and Molecular Osteoporosis Research Unit, Department of Clinical Sciences and Orthopedics, Lund University, Malmö, Sweden, Sweden, [5]Department of Molecular and Clinical Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, Sweden, [6]Dept of Geriatric Medicine, Internal Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, Sweden
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SAT-126 **Metabolic crosstalk in the bone marrow niche drives leukemia chemoresistance**
*Nick van Gastel[1], Amir Schajnovitz[1], Azeem Sharda[1], Konstantinos Kokkaliaris[1], Ninib Baryawno[1], Catherine Rhee[1], Toshihiko Oki[1], Eliane Grace[1], David Scadden[1], Jessica Spinelli[2], Marcia Haigis[2], Charles Vidoudez[3], Sunia Trauger[3]. [1]Department of Stem Cell and Regenerative Biology, Harvard Stem Cell Institute, Harvard University; Center for Regenerative Medicine, Massachusetts General Hospital, United States, [2]Department of Cell Biology, Harvard Medical School, United States, [3]FAS Small Molecule Mass Spectrometry Facility, Harvard University, United States
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SAT-127 **Curved microstructures enhance osteogenesis of mesenchymal stem cells**
*Qi Zhang[1], Yunfeng Lin[1]. [1]Sichuan University, China
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BONE TUMORS AND METASTASIS

SAT-135 **PREX1 drives spontaneous bone metastasis of ER+ breast cancer cells**
*Miranda E. Clements[1], Rachelle W. Johnson[2]. [1]Vanderbilt University, United States, [2]Vanderbilt University Medical Center, United States
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SAT-136 **TBK1/IKKε inhibitor Amlexanox blocks Multiple Myeloma cell growth in vitro and in vivo**

*Quanhong Sun[1], Juraj Adamik[1], Peng Zhang[1], Konstantinos Lontos[1], Deborah L. Galson[1], Valentina Marchica[2], Nicola Giuliani[2], Rebecca Silbermann[3], G.David Roodman[4], Lea Nyiranshuti[5], Joseph Latoche[5], Carolyn J. Anderson[5], Konstantinos Verdelis[6]. [1]Department of Medicine, Hem-Onc Division, UPMC Hillman Cancer Center, University of Pittsburgh, United States, [2]Myeloma Unit, Department of Clinical and Experimental Medicine, University of Parma, Italy, Italy, [3]Department of Medicine, Hematology-Oncology Division, Indiana University, Indianapolis, IN, USA, United States, [4]Department of Medicine, Hem-Onc Division, Indiana University, Indianapolis, IN; 5Veterans Administration Medical Center, Indianapolis, IN, USA, United States, [5]Department of Medicine, Cardiology Division, University of Pittsburgh, United States, [6]Department of Oral Biology, The Center for Craniofacial Regeneration, McGowan Institute for Regenerative Medicine, University of Pittsburgh, United States

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SAT-137 **HER2 positive breast cancer bone metastasis model for studying efficacy of novel therapies**

*Tiina E Kähkönen[1], Mari I Suominen[1], Jenni HE Mäki-Jouppila[1], Jussi M Halleen[1], Jenni Bernoulli[1], Derek Grant[2]. [1]Pharmatest Services, Finland, [2]Bayer AS, Norway

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ASBMR 2019 Annual Meeting Young Investigator Award

SAT-138 **Circulating osteocalcin-positive cells predict the progression of breast cancer bone metastasis**

*Kyoung Jin Lee[1], Serk In Park[1], Hyun Jin Sun[2], Kyung-Hun Lee[2], Tae Young Kim[2], Seock-Ah Im[2], Sun Wook Cho[2]. [1]Department of Biochemistry and Molecular Biology, Korea University College of Medicine, Republic of Korea, [2]Department 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 Li[1], Xiaoqiu Wu[1], Xuekun Fu[1], Aiping Lu[1], Ge Zhang[1], Natalie Joan Lim[2]. [1]Institute for Advancing Translational Medicine in Bone & Joint Diseases, Hong Kong Baptist University, Hong Kong, [2]Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Hong Kong

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SAT-140 **Efferocytosis of Apoptotic Prostate Cancer Cells Induces the Immune Checkpoint Receptor TIM-3 in Bone Metastatic Macrophages**

*Veronica Mendoza-Reinoso[1], Rylee Kim[1], John Rubin[1], Laurie McCauley[1], Hernan Roca[1]. [1]School of Dentistry, University of Michigan, United States

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SAT-141 **The Role of Integrin α2β1 in Breast Cancer Metastasis to Bone**

*Milene Moritz[1], Heloisa de Araujo[1], Alyssa Merkel[2], Julie Rhoades (Sterling)[2], Ean Feldman[3]. [1]Federal University of Sao Carlos, Brazil, [2]Vanderbilt University Medical Center, United States, [3]Vanderbilt University, United States

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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 Park[1], Kyoung Jin Lee[1], Eun Jung Lee[1], Bo-Yeon Seo[1], Seung Pil Jung[2], Sun Wook Cho[3]. [1]Department of Biochemistry and Molecular Biology, Korea University College of Medicine, Republic of Korea, [2]Department of Surgery, Korea University College of Medicine, Republic of Korea, [3]Department of Internal Medicine, Seoul National University Hospital, Republic of Korea

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SAT-143 **The role of the SCF/c-kit pathway in cancer-induced bone pain**
*Sun Park[1], Mattew Eber[1], Shunsuke Tsuzuki[1], Rebecca Cain[1], Brooke Widner[1], Yusuke Shiozawa[1], Yuko Kamata[2], Takahiro Kimura[2], Fang-Chi Hsu[3], Christopher Peters[4]. [1]Wake Forest University Health Sciences, United States, [2]The Jikei University School of Medicine, Japan, [3]Wake Forest University Health Scineces, United States, [4]Wake Forest Univerisy Health Sciences, United States
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SAT-144 **Breast Cancer Paracrine Signaling interferes with Osteocyte Mechanosensitivity in 3D**
*Blayne Sarazin[1], Maureen Lynch[1], Boyuan Liu[2]. [1]University of Colorado Boulder, United States, [2]University of Massachusetts Amherst, United States
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SAT-145 **Parathyroid Hormone Receptor Signaling Mediates Breast Cancer Metastasis to Bone in Mice**
*Srilatha Swami[1], Hui Zhu[1], Joy Y. Wu[1]. [1]Stanford University, United States
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SAT-146 **A progressive auto-amplification loop in TAK1 expression and activation in myeloma cells**
*Jumpei Teramachi[1], So Shimizu[1], Hirofumi Tenshin[1], Ariunzaya Bat-Erdene[1], Masahiro Hiasa[1], Asuka Oda[1], Takeshi Harada[1], Mohannad Ashtar[1], Kotaro Tanimoto[1], Itsuro Endo[1], Toshio Matsumoto[1], Eiji Tanaka[1], Masahiro Abe[1]. [1]Tokushima University, Japan
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SAT-147 **HIF Signaling Drives Spontaneous Dissemination of Breast Cancer Cells to Bone**
*Vera Todd[1], Lawrence Vecchi[2], Rachelle Johnson[2]. [1]Vanderbilt University, United States, [2]Vanderbilt University Medical Center, United States
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CHONDROCYTES

SAT-174 **DDRGK1 is required for the proper chondrogenesis and the regulation of osteochondroprogenitors**
* Yangjin Bae[1], Monika Weisz-Hubshman[1], Adetutu Egunsola[1], Ming-Ming Jiang [1], Brendan Lee[1]. [1]Baylor College of Medicine, United States
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ASBMR 2019 Fund for Research and Education Emerging Country Young Investigator Award

SAT-175 **Pinch regulates chondrogenesis by control of TGF-β1 signaling and expression of Sox9 and Runx2 in chondrocytes**
*Yiming Lei[1], Huiling Cao[1], Pengyu Li[1], Xin Liu[1], Qinnan Yan[1], Simin Lin[1], Liting Ma[1], Yuxi Guo[1], Yumei Lai[2], Yiran Zhao[3], Wei Yang[3], Yishu Wang[3], Ruxuan Li[3], Guozhi Xiao[3]. [1]Guangdong 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, [2]Department of Orthopedic Surgery, Rush University Medical Center, United States, [3]Guangdong 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
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SAT-176 **Disruption of aldehyde dehydrogenase 2 gene accelerates articular cartilage degeneration in osteoarthritis induced by mechanical loading in mice**
*Yasuaki Okada[1], Kenji Kosugi[1], Yoshiaki Yamanaka[2], Kayoko Ookuma[2], Takafumi Tajima[2], Manabu Tukamoto[2], Kunitaka Menuki[2], Akinori Sakai[2]. [1]Department of Orthopaedic Surgery, University of Occupational and Environmental Health Japan., Japan, [2]Department of Orthopaedic Surgery, University of Occupational and Environmental Health Japan, Japan
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SAT-177 **Healing promotion effects of basic fibroblast growth factor (bFGF) in cartilage repair by synovial mesenchymal stem cell (MSC)**
*Gensuke Okamura[1]. [1]Osaka University Graduate School of Medicine, Japan
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SAT-178 **Growth plate borderline chondrocytes behave as transient mesenchymal precursor cells**
*Koji Mizuhashi[1], Noriaki Ono[1]. [1]University of Michigan School of Dentistry, United States
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SAT-179 **Changes in 3D Genome Architecture During Chondrocyte Differentiation in the Pathogenesis of Human Chondrodysplasias**
*I-Wen Song[1], Ivan Bochkov[1], Yangjin Bae[1], Erez Aiden[1], Brendan Lee[1]. [1]Molecular and Human Genetics, Baylor College of Medicine, United States
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SAT-180 **TGF-β/Alk5 signaling regulates the senescence of articular cartilage superficial cells and preventing osteoarthritis initiation**
*qiaoyan tan[1], Quan Wang[1], Yangli Xie[1], lin chen[1]. [1]Department 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
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SAT-181 **Runx1 Mediates Articular Cartilage Repair in Osteoarthritis through Upregulating Yap and Downregulating Wnt/β-catenin Signaling Pathway**
*Yan Zhang[1], Yun Lu[1], Tao Zuo[1], Guochun Zhu[1], Jinjin Wu[1], Wei Chen[1], Yi-Ping Li[1]. [1]Department of Pathology, University of Alabama at Birmingham, SHEL 810, 1825 University Blvd, Birmingham AL 35294-2182, USA, United States
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SAT-182 **Expression profiling and functional analysis of candidate Col10a1 regulators identified by the transcription factor affinity prediction (TRAP) program**
*Qiping Zheng[1], Longwei Qiao[1], Ting Zhu[1], Huiqin Bian[1], Yuting Liang[1], Jinnan Chen[1], Qian Wang[1], Fangzhou Chen[1], Junxia Gu[1], Yaojuan Lu[2], Lichun Sun[2]. [1]Jiangsu University, China, [2]Shenzhen Academy of Peptide Targeting Technology at Pingshan, China
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CLINICAL CASE REPORTS

SAT-199 **Hypophosphatasia treatment with recombinant human TNSALP in an 18 year old patient**
*Zhanna Belaya[1], Natalia Kalinchenko[1], Tatiana Grebennikova[1], Anatoliy Tiulpakov[1], Galina Melnichenko[1], Olga Golounina[2]. [1]The National Research Centre for Endocrinology, Russian Federation, [2]I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University), Russian Federation
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SAT-200 **Recovery of adefovir-induced osteomalacia in chronic hepatitis B patient**
*Kyung Seok Oh[1], Hyun Uk Moon[2], Yong Jun Choi[2], Yoon-Sok Chung[2]. [1]Ajou University Hospital, Republic of Korea, [2]Ajou University School of Medicine, Republic of Korea
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SAT-201 **Bilateral Atypical Femoral Fractures Due To A Long-Term Bisphosphonate Based Therapy**
*Salomón Jasqui-Romano[1], Salomón Jasqui-Remba[1], Ariel Jasqui-Bucay[2], Alan Jasqui-Bucay[3]. [1]Hospital Ángeles Lomas, Mexico, [2]Universidad Anáhuac, Mexico, [3]Universidad Anáhuac, Mexico
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SAT-202 **A case of adult hypophosphatasia with prominent periarticular calcification**
*Hajime Kato[1], Minae Koga[1], Nobuaki Ito[1]. [1]Division of Nephrology and Endocrinology, The University of Tokyo, Japan
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SAT-203 **Legg-Calve-Perthes Disease in an 8-year old girl with Acrodysostosis 1 Treated with Growth Hormone.**
*Whei Ying Lim[1], Nancy Dunbar[1], Emily Germain-Lee[1]. [1]Connecticut Children's Medical Center, United States
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SAT-204 **First Report of Burosumab (Anti-FGF23 Monoclonal Antibody) for Rickets Complicating HRAS-Associated Cutaneous Skeletal Hypophosphatemia Syndrome**
*Pamela Smith[1], Susan Bayliss[2], Marwan Shinawi[2], William McAlister[2], Ana Maria Arbelaez[2], Gary Gottesman[3], Valerie Wollberg[3], Michael Whyte[3], Jeffrey Sugarman[4]. [1]University of Arizona College of Medicine - Phoenix, United States, [2]Washington University School of Medicine in St. Louis, United States, [3]Shriners Hospitals for Children - St. Louis, United States, [4]University of California - San Francisco, United States
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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 Stanciu[1], Paul Miller [2]. [1]Colorado Center for Bone Research at Panorama Orthopedics and Spine Center, United States, [2]Colorado Center for Bone Research at Panorama Orthopedics and Spine Surgery Center, United States
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SAT-206 **Dried Plum Consumption Improves Bone Mineral Density in Osteopenic Postmenopausal Woman**
*Nicole C.A. Strock[1], Kristen J. Koltun[1], Mary Jane De Souza[1]. [1]Penn State University, United States
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SAT-208 **A Unique Cause of Hypercalcemia**
*Jian Zhang[1], Deborah Sellmeyer [1]. [1]Stanford University School of Medicine, United States
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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 Langlais[1], Katherine J. Motyl[1], Roni F. Kunst [2], Karen Houseknecht[3]. [1]Maine Medical Center Research Institute, United States, [2]Maine Medical Center Research Institute, United States, [3]University of New England, United States
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SAT-220 **Connexin43 Favors Body Adiposity and Glucose Tolerance in Mice**
*Seung-Yon Lee[1], Manuela Fortunato[1], Marcus Watkins[1], Francesca Fontana[1], Roberto Civitelli[1]. [1]Divisions of Bone and Mineral Diseases, Department of Medicine; Musculoskeletal Research Center, Washington University School of Medicine, United States
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SAT-221 **Bone Turnover Is Not Acutely Affected by Circulating Insulin Levels In Adults with Type 1 Diabetes: Findings from Hyperinsulinemic Euglycemic Clamps**
*Viral Shah[1], Janet Snell-Bergeon[1], Timothy Vigers[2], Laura Pyle[2], Vanessa Sherk[3], Michael Rickels[4], kellee Miller[5], Kristen Nadeau[6]. [1]Barbara Davis Center for Diabetes, University of Colorado, United States, [2]Department of Biostatistics, University of Colorado, United States, [3]University of Colorado, United States, [4]University of Pennsylvania Perelman School of Medicine, United States, [5]Jaeb Center for Health Research, United States, [6]Professor of Pediatric Endocrinology, University of Colorado, United States
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SAT-222 **Inhibition of the Mitochondrial Permeability Transition via Cyclophilin D Knock-Out Stimulates Osteoprogenitors and Accelerates Bone Fracture Repair**
*Brianna Shares[1], Roman Eliseev[1]. [1]University of Rochester, United States
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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 Sowman[1], Sam Z. Olechnowicz[1], Stefan Kluzek[1], Nigel K. Arden [1], James R. Edwards[1]. [1]University of Oxford, United Kingdom
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SAT-224 **Divergent effects of peripheral and global depletion of Neuropeptide Y to the skeleton**
*Natalie Wee[1], Benjamin Sinder[1], Ivo Kalajzic[1]. [1]Department of Reconstructive Sciences, UConn Health, United States
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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 Manousaki[1], Vince Forgetta[1], Brent Richards[1], Ruth Mitchell[2], Simon Haworth[2], Tom Dudding[3], Nicolas Timpson[4]. [1]Lady Davis Institute for Medical Research, McGill University, Canada, [2]MRC Integrative Epidemiology Unit, University of Bristol, United Kingdom, [3]MRC Integrative Epidemiology Unit, United Kingdom, [4]MRC Integrative Epidemiology Unit, University of Bristol, United Kingdom
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SAT-236 **Identification of Genetic Variants for Peak Bone Mineral Content in Young Adult Women**
*Jai Prakash[1], Fiona E McGuigan[1], Holger Luthman[1], Kristina E Akesson[1]. [1]Lund University, Sweden
Disclosures: Jai Prakash, None

SAT-237 **Leveraging Unconfounded Genetic Risk Scores to Stratify Fracture Risk by Age at Onset**
*Carolina Medina-Gomez[1], Katerina Trajanoska[1], M. Carola Zillikens[1], Andre G. Uitterlinden[1], Fernando Rivadeneira[1], Chun Chieh Fan[2], Anders M. Dale[2], Tyler M. Seibert[2], Ole A. Andreassen[3]. [1]Department of Internal Medicine, Erasmus University Medical Centre, Netherlands, [2]Center for Multimodal Imaging and Genetics, University of California San Diego, United States, [3]NORMENT, KG Jebsen Centre, Institute of Clinical Medicine, University of Oslo, Norway
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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 Mo[1], Zhiying Wang[1], Marco Brotto[1], Kuan-Jui Su[2], Hongwen Deng[2], Lynda Bonewald[3]. [1]Bone-Muscle Research Center, College of Nursing and Health Innovation, the University of Texas-Arlington, United States, [2]Tulane Center of Bioinformatics and Genomics, Department of Global Biostatistics and Data Science, Tulane University, United States, [3]Musculoskeletal Research Center, Indiana Medical School, Indiana University, United States
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SAT-239 **CRISPR-Cas9 mediated genome editing confirms EPDR1 as an effector gene at the BMD GWAS-implicated 'STARD3NL' locus**
*James Pippin[1], Alessandra Chesi[1], Chun Su[1], Kenyaita Hodge[1], Mathew Johnson[1], Andrew Wells[1], Struan Grant[1], Yadav Wagley[2], Kurt Hankenson[2]. [1]Children's Hospital of Philadelphia, United States, [2]University 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 Hsu[1], David Karasik[1], Douglas P. Kiel[1], Alexander Teumer[2], Katerina Trajanoska[3], Fernando Rivadeneira[3], On Behalf of GEFOS and CHARGE Consortia[4]. [1]Hinda and Arthur Marcus Institute for Aging Research, Hebrew SeniorLife, United States, [2]Institute of Community Medicine, University of Greifswald, Germany, [3]Department of Internal Medicine, Erasmus MC University, Netherlands, [4]Consortia, Netherlands

Disclosures: Yi-Hsiang Hsu, None

SAT-241 **Adaptations of bone to exercise training in Nrf2KO rats are sex-specific**

*John Wahl[1], Hyerim Park[2], Mina-Michael Barsoum[2], Alexis Restrepo[2], Isabella Dewell[2], Jake Wahl[2], Joshua Maraj[2], William Peterson[2], Emily Reid-Foley[2], Kelsey Ballehr[2], Kristin Bedwell[2], Steven Medarev[2], Kaley Schartz[2], Dylan Sadowsky[2], Michael Delp[2], Judy Muller-Delp[2], Aron Geurts[3]. [1]Florida State University, United States, [2]Florida State University, United States, [3]Medical 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**

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Disclosures: Xiao Zhang, None

HORMONAL REGULATORS

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

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SAT-258 **C-FGF23 peptide protects against severe hypoferremia during acute inflammation**

*Guillaume Courbon[1], Vikas Chonira[1], Maralee Capella[1], Samantha Neuburg[1], Xueyan Wang[1], Aline Martin[1], Valentin David[1]. [1]Division of Nephrology and Hypertension and Center for Translational Metabolism and Health, Northwestern University, United States

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

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SAT-260 **Effects of a low dose 17β-HSD2 inhibitor treatment on osteoporosis based on an animal rat model**

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SAT-262 **Vitamin D threshold ≥40ng/mL prevents arthralgia in aromatase inhibitors users: B-ABLE cohort study**

*Marta Pineda-Moncusí[1], Natalia Garcia-Giralt[1], Jaime Rodriguez-Morera[2], Isabel Campodarve[2], Albora Rial[2], Maria Lourdes Cos[2], Adolfo Diez-Perez[3], Xavier Nogués[3], Ignasi Tusquets[4], Sonia Servitja[4]. [1]IMIM (Hospital del Mar Research Institute), Centro de Investigación Biomédica en Red de Fragilidad y Envejecimiento Saludable (CIBERFES), Spain, [2]Internal Medicine Department, Hospital del Mar, Universitat Autònoma de Barcelona, Spain, [3]IMIM (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, [4]Cancer 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 Ponte[1], Warren Aaron[1], Ha-neui Kim[1], Srividhya Iyer[1], Li Han [1], Maria Almeida[1], Manolagas Stavros[1]. [1]UAMS, United States

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

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Disclosures: K. Berit Sellars, None

SAT-265 **THE CONTRIBUTION OF OSTEOCYTE METABOLISM TO ACROMEGALIC OSTEOPATHY**

*Zhongbo Liu[1], Gozde Yildirim[1], Shoshana Yakar[1], Mitchell B Schaffler[2], Silvana Duran Ortiz[3], John J Kopchick[3]. [1]David B. Kriser Dental Center, Department of Basic Science and Craniofacial Biology New York University College of Dentistry New York, NY 10010-4086, United States, [2]Department of Biomedical Engineering, City College of New York, New York 10031, United States, [3]Edison 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**

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Disclosures: yanjiao zhang, None

MECHANOBIOLOGY

SAT-285 **Mechanoresponsive MiR-138-5p Targets MACF1 to Inhibit Bone Formation**

*Zhihao Chen[1], Fan Zhao[1], Lifang Hu[1], Chong Yin[1], Yan Zhang[1], Dijie Li[1], Airong Qian[1], Chao Liang[2], Ge Zhang[2]. [1]Lab for Bone Metabolism, Key Lab for Space Biosciences and Biotechnology, School of Life Sciences, Northwestern Polytechnical University, Xi'an, Shaanxi 710072, China., China, [2]Law Sau Fai Institute for Advancing Translational Medicine in Bone & Joint Diseases, Hong Kong, China, Hong Kong

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ASBMR 2019 Fund for Research and Education Young Investigator Award

SAT-286 **Sptbn1 disruption increases osteocyte membrane fragility, leading to impaired cell viability and a blunted mechanotransduction response following mechanical loading**

*Mackenzie Hagan[1], Kanglun Yu[1], Eric Stokes[1], Sarah Bass[1], Mohamed Awad[1], Mohammed Elsalanty[1], Paul McNeil[1], Rachel Roberts[2], Daniel Perrien[3], James Ervasti[4], Mark Hamrick[5], Meghan McGee-Lawrence[5]. [1]Augusta University, United States, [2]Augusta, United States, [3]Vanderbilt University, United States, [4]University of Minnesota, United States, [5]Medical College of Georgia, Augusta University, United States

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SAT-287 **Irisin Attenuates Osteoarthritis by Inhibiting Apoptosis of Osteocyte through Activating Erk Signaling Pathway**

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SAT-288 **Interleukin-17 accelerates the development of osteoarthritis in murine model**

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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 Laughrey[1], LeAnn Tiede-Lewis[2], Sarah Dallas[2], Mark Johnson[2], Nuria Lara-Castillo[2], Thiagarajan Ganesh[3]. [1]University of Missouri - Kansas City, United States, [2]University of Missouri - Kansas City, School of Dentistry, Department of Oral and Craniofacial Sciences, United States, [3]University of Missouri - Kansas City, Department of Civil and Mechanical Engineering, United States

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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 Notomi[1], Akiko Hiyama[1], Tadashige Nozaki[1]. [1]Osaka Dental University, Japan

Disclosures: Takuya Notomi, None

SAT-291 **Loading-induced expression of periosteal Osteocrin promotes bone growth**

*Haruko Watanabe-Takano[1], Naoki Mochizuki[1]. [1]Department 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 Tol[1], Victoria Schemenz[1], Wolfgang Wagermaier[1], Hajar Razi[1], Peter Fratzl[1], Richard Weinkamer[1], Andreas Roschger[2], Paul Roschger[3], Isabela Vitienes[4], Bettina Willie[4]. [1]Max Planck Institute of Colloids and Interfaces, Department of Biomaterials, Germany, [2]University of Salzburg, Chemistry and Physics of Materials, Austria, [3]Ludwig Boltzmann Institute of Osteology at Hanusch Hospital of WGKK and AUVA Trauma Centre Meidling, 1st Medical Department, Hanusch Hospital, Austria, [4]Shriners Hospitals for Children-Canada, Department of Pediatric Surgery, McGill University, Canada

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MINERAL METABOLISM

ASBMR 2019 Annual Meeting Young Investigator Award

SAT-309 **PTHrP Overexpression in Transgenic Mammary Tumors Causes Anorexia and White Adipose Tissue Lipolysis**

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Posters

SAT-310 **Histochemical Assessment Of Abnormal Mineralization In Bone And Aorta Induced By Disrupted FGF23/αklotho**

*Tomoka Hasegawa[1], Yukina Miyamoto[1], Zixuan Qiu[1], Hiromi Hongo[1], Norio Amizuka[1], Tomomaya Yamamoto[2]. [1]Developmental Biology of Hard Tissue, Graduate School of Dental Medicine and Faculty of Dental Medicine, Hokkaido University, Japan, [2]Department of Dentistry, Japan Ground Self-Defense Force Camp Asaka, Japan

Disclosures: Tomoka Hasegawa, None

ASBMR 2019 Annual Meeting Young Investigator Award

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

*Shota Ito[1], Kotaro Tanimoto[1], Tomoko Minamizaki[2], Yuji Yoshiko[2], Yoshiaki Kitaura[3], Shinsuke Ohba[4], Ung-il Chung[4]. [1]Department of Orthodontics and Craniofacial Developmental Biology, Hiroshima University Graduate School of Biomedical and Health Sciences, Japan, [2]Department of Calcified Tissue Biology, Hiroshima University Graduate School of Biomedical and Health Sciences, Japan, [3]Department of Bioengineering, The University of Tokyo, Japan, [4]Center for Disease Biology and integrative Medicine, The University of Tokyo, Japan

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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 Masuda[1], Yuichiro Adachi[1], Kohta Ohnishi[1], Hirokazu Ohminami[1], Hisami Yamanaka-Okumura[1], Eiji Takeda[1], Yutaka Taketani[1], Hironori Yamamoto[2], Makoto Miyazaki[3]. [1]Tokushima University Graduate School, Japan, [2]Jin-ai University, Japan, [3]Universtiy 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 Orces[1]. [1]Laredo Medical Center, United States

Disclosures: Carlos Orces, None

SAT-314 **Stem Cell Osteogenic Differentiation as a Mechanism for Bioprosthetic Valve Calcification**

*Nalini Rajamannan[1]. [1]Mayo 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 Sahbani[1], Christopher Cardozo[2], William Bauman[2], Hesham Tawfeek[2]. [1]James J. Peters VA Medical Center, United States, [2]James 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 Dann[1], John Wysolmerski[1], Raphael Levy[2], Kirk Johnson[3], Padma Bezwada[3]. [1]Yale University, United States, [2]XOMA, United States, [3]XOMA Corporation, United States

Disclosures: Pamela Dann, None

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

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Disclosures: Pamela Dann, None

SAT-318 **P27 Deletion Peotects against Estrogen Deficiency-Induced Osteoporosis by Inhibiting Oxidative Stress and Cell Senescence**

*Xiaozheng Yang[1], Qian Zhang[2], Cheng Ma[3], Yongxin Ren [4], Dengshun Miao[5]. [1]Department of Orthopedics, Shangrao People's Hospital, Shangrao, 334000,China, China, [2]The Research Center for Bone and Stem Cells,Nanjing Medical University,Nanjing,211166,China, China, [3]Department of Orthopedics,the First Affiliated Hospital of Nanjing Medical University,210029,China, China, [4]Department of Orthopedics, the First Affiliated Hospital of NanJing Medical university, Nanjing, China, China, [5]The Research Center for Bone and Stem Cells, Nanjing Medical University, Nanjing 211166, China, China

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MUSCULOSKELETAL AGING

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

*Claudia Biguetti[1], Ramez Mahamoud[1], Gustavo Simionato[1], André Oliva[1], Mariza Matsumoto[1], Isabela Custódio[2], Jesus Andreo[3], Marco Brotto[4], Walid Fakhouri[5], Chenglin Mo[6]. [1]School of Dentistry of Araçatuba, São Paulo State University, FOA/UNESP, Brazil, [2]School of Dentistry, Universidade Sagrado Coração, USC, Brazil, [3]School of Dentistry of Bauru, University of São Paulo, FOB/USP, Brazil, [4]Bone-Muscle Research Center, Nursing Program, University of Texas at Arlington, UTA, United States, [5]Center for Craniofacial Research, School of Dentistry, The University of Texas Health Science Center at Houston, United States, [6]University of Texas at Arlington, United States

Disclosures: Claudia Biguetti, None

SAT-338 **D3Cr muscle mass, DXA appendicular lean mass (ALM), and their relationships with "bone quality" and "muscle quality" in older men**

*Peggy Cawthon[1], Sheena Patel[1], Steven Cummings[1], Eric Orwoll[2], Andrew Burghardt[3], Kate Duchowny[3], Lisa Langsetmo[4], Kristine Ensrud[4], Elsa Strotmeyer[5], Joe Zmuda[5], Jane Cauley[5], Miljkovic Iva[5], Nancy Lane[6], William Evans[7]. [1]California Pacific Medical Center, Research Institute, United States, [2]Oregon Health and Sciences University, United States, [3]University of California, San Francisco, United States, [4]University of Minnesota, United States, [5]University of Pittsburgh, United States, [6]University of California, Davis, United States, [7]University 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 Chandra[1], David Monroe[1], Joshua Farr[1], Sean Park[1], Christine Hachfeld[1], Sundeep Khosla[1], Robert Pignolo[1]. [1]Mayo 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 Kim[1], Young Dan Cho[1], Hyun Mo Ryoo[1]. [1]Seoul National University, Republic of Korea

Disclosures: Woo Jin Kim, None

SAT-341 **Age-associated Increase in Kynurenine Iinhibits Autophagy and Promotes Senescence and Apoptosis in Bone Marrow Mesenchymal Stem Cells**

*Dmitry Kondrikov[1], Ahmed Elmansi[1], William Hill[1], Robert Tailor Bragg[2], Tanner Mobely[2], Thomas Barrett[2], Patricia Schoeinlein[2], Xing-Ming Shi[2], Sadanand Fulzele[2], Meghan McGee Lawrence[2], Mark Hamrick[2], Carlos Isales[2], Alexandra Aguilar-Perez[3]. [1]Medical University of South Carolina, United States, [2]Augusta University, United States, [3]Indiana University School of Medicine, United States

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SAT-207 **Lowering circulating Apolipoprotein E levels improves aged bone fracture healing**

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Posters

MUSCULOSKELETAL DEVELOPMENT

SAT-351 **IRS1 and IRS2 are integral for longitudinal bone growth**
*Victoria DeMambro[1], Jennifer Daruszka[1], Carolina Figueroa[1], Clifford Rosen[1], Anyonya Guntur[1], Lauren Ball[2]. [1]Maine Medical Center Research Institute, United States, [2]Medical University of South Carolina, United States
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SAT-352 **Usp53, a PTH target regulating cell lineage fate and bone turnover**
*Hadla Hariri[1], Martin Pellicelli[2], René St-Arnaud[3]. [1]McGill University/Shriners Hospitals for Children - Canada, Canada, [2]Shriners Hospitals for Children - Canada, Canada, [3]Shriners Hospitals for Children - Canada/McGill University, Canada
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SAT-353 **Loss of preBCR components affects the homeostasis of cranial bone**
*Mohamed Khass[1], Louis Bridges[1], Harunur Rashid[2], Peter Burrows[3], Amjad Javed[4], Harry Schroeder[5]. [1]Department of Medicine, University of Alabama at Birmingham, United States, [2]Department of Oral and Maxillofacial Surgery, University of Alabama at Birmingham, United States, [3]Deaprtment of Microbiology, University of Alabama at Birmingham, United States, [4]Department of Oral and Maxilofacial Surgery, University of Alabama at Birmingham, United States, [5]Deaprtment of Medicine, University of Alabama at Birmingham, United States
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SAT-354 **Emergence of an early osteoporotic phenotype in male Down syndrome mice resulting from aberrant trisomic Dyrk1a expression**
*Jonathan LaCombe[1], Randall Roper[1], Joseph Wallace[1]. [1]IUPUI, United States
Disclosures: Jonathan LaCombe, None

SAT-355 **Osteoclast-Osteoblast "Trans-pairing" across Cortical Bone Shapes Developing Long Bones**
*Koichi Matsuo[1], Masaki Yoda[1], Yukiko Kuroda[1], Katsuhiro Kawaai[1], Yanlin Wu[2], Hidekazu Takano[2], Atsushi Momose[2]. [1]Keio University School of Medicine, Japan, [2]Tohoku University, Japan
Disclosures: Koichi Matsuo, None

SAT-356 **Bromodomain-containing Protein Brd4 is Required for Proper Skeletal Formation**
*Christopher Paradise[1], M. Lizeth Galvan[1], Catalina Galeano-Garces[1], Roman Thaler[1], Andre J. van Wijnen[1], Amel Dudakovic[1]. [1]Mayo Clinic, United States
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SAT-357 **Prevention of ectopic calcification by MGP: The role of its conserved residues**
*Abhinav Parashar[1], Juliana Marulanda[1], Omar Al Rifai[2], Mathieu Ferron[3], Monzur Murshed[4]. [1]Faculty of Dentistry, McGill University, Canada, Canada, [2]University of Montreal, Canada, Canada, [3]Department of Biochemistry and Nuclear Medicine, University of Montreal, Canada, [4]Faculty of Medicine, McGill University, Canada, Canada
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SAT-358 **Aberrant muscle tissue repair by mutant ACVR1 FOP progenitor cells**
*Alexandra Stanley[1], Elisia Tichy[1], Foteini Mourkioti[1], Eileen Shore[1]. [1]University of Pennsylvania, United States
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SAT-359 **Girk3 deletion facilitates long bone growth through chondrocyte hypertrophy and limits the effect of opioids on the skeleton**
*Earnest Taylor[1], Elizabeth Bradley[2], Xiaodong Li[2], Jennifer Westendorf[2], Kevin Wickman[3]. [1]MAYO CLINIC, United States, [2]Mayo Clinic, United States, [3]University of Minnesota, United States
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SAT-360 **Wnt7b expressed by hypertrophic chondrocytes is a critical inducer of bone formation during endochondral ossification**

*Sho Tsukamoto[1], Mai Kuratani[1], Misato Okubo[1], Noriko Sekine[2], Shinya Tanaka[3], Eijiro Jimi[4], Takenobu Katagiri[5]. [1]Division of Pathophysiology, Research Center for Genomic Medicine, Saitama Medical University, Japan, [2] Division of Pathophysiology, Research Center for Genomic Medicine, Saitama Medical University, Japan, [3]Department of Orthopedic Surgery, Saitama Medical University, Japan, [4]Faculty of Dental Science, Oral health•Brain health•Total health Research Center, Kyushu University, Japan, [5]Division of Pathophisiology, Reserch Center for Genomic Medicine, Saitama Medical University, Japan

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SAT-361 **Loss of ZIP10 in osteoblasts and chondrocytes impairs skeletal development and growth.**

*Rika Yasuhara[1], Akihiro Kawashima[1], Akane Yukimori[1], Junichi Tanaka[1], Satoko Kujiraoka[1], Kenji Mishima[1], Toshiyuki Fukada[2], Motomi Enomoto-Iwamoto[3]. [1]Showa University, Japan, [2]Tokushima Bunri University, Japan, [3]University of Maryland, United States

Disclosures: Rika Yasuhara, None

SAT-362 **Sarcopenia feature selection and risk prediction using machine learning**

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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**

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SAT-387 **Wnt responsive progenitor cells contribute to osseointegration of implants in lone bone.**

*Zhijun Li[1], Xue Yuan[1], Jill Helms[1]. [1]Stanford 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 Root[1], Natalie Wee[1], Sanja Novak[1], Ivo Kalajzic[1], Brya Matthews[2]. [1]Department of Reconstructive Sciences, University of Connecticut Health Center, United States, [2]Department 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 Sakuma[1], Chantida Pawaputanon Na Mahasarakham[2], Yutaka Kobayashi[3], Hiroyuki Inose[3], Atsushi Okawa[3], Shuhei Kajikawa[4], Masaki Noda[5], Yoichi Ezura[6]. [1]Tokyo Medical and Dental University, Dept. Maxillofacial Surgery, Japan, [2]Department of Restorative Dentistry, Khon Kaen University, Thailand, [3]Tokyo Medical and Dental University, Dept. Orthopedics, Japan, [4]Okayama University of Science, Japan, [5]Tokyo Medical and Dental University, Japan, [6]Tokyo 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 Sharma[1], Rachel Roberts[1], Jessica Pierce[1], Mohamed Awad[1], Mohammed Elsalanty[1], William Hill[2], Mark Hamrick[3], Carlos Isales[3], Meghan McGee-Lawrence[3]. [1]Augusta University, United States, [2]Medical University of South Carolina, United States, [3]Medical 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 Tao[1], Shang-Chun Guo[1]. [1]Shanghai Jiao Tong University Affiliated Sixth People's Hospital, China

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SAT-392 **The chemokine Cxcl12 regulates the bone mesenchymal/stromal cell homeostasis and marrow vascular morphogenesis**

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Disclosures: Yi-shiuan Tzeng, None

SAT-393 **Gli1 labels a subpopulation of FAP cells that respond to muscle injury**

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SAT-394 **Epigenetic Regulation of Bone Regeneration in Inflammation Disease**

*Jun Ying[1], Taotao Xu[1], Cuicui Wang[1], Regis O'Keefe[1], Yousef Abu-Amer[1], Jie Shen[1]. [1]Department of Orthopaedic Surgery, School of Medicine, Washington University in St. Louis, United States

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SAT-395 **Differential Response of Superior and Dura Periosteum to Intermittent Treatment of Teriparatide in Cranial Bone Defect Repair**

*Yuankun Zhai[1], Xinping Zhang[1]. [1]University of Rochester Medical Center, United States

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SAT-396 **Calycosin ameliorates glucocorticoid-induced osteonecrosis of the femoral head by suppressing TLR4/ NF-κB pathway**

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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 Chen[1], Delong Chen[2]. [1]1st Affiliated Hospital, Guangzhou University of Chinese Medicine, China, [2]Guangzhou University of Chinese Medicine, China

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SAT-418 **CRISPR/Cas9-mediated ablation of osteoarthritis-associated genes attenuates osteoarthritis progression**

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SAT-419 **CRIF1 ameliorates autoimmune arthritis by suppressing Th17 cells**
*Jin-Sil Park[1], Si-Young Choi[1], Sun-Hee Hwang[1], Sung-Min Kim[1], JeongWon Choi[1], Kyung-Ah Jung[1], Ji Ye Kwon[1], Mi-La Cho[1], Sung-Hwan Park[1], Young-Yun K ong[2]. [1]The Catholic University of Korea, Republic of Korea, [2]Seoul 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 Shiraishi[1], Ko Chiba[1], Narihiro Okazaki[1], Kazuaki Yokota[1], Makoto Osaki[1]. [1]Department 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 Su[1], Xiannan Liu[1], Qi Sun[1], Xu Cao[1], Mei Wan[1]. [1]Department of Orthopaedic Surgery, United States
Disclosures: Weiping Su, None

SAT-422 **Cell Determination during the Development of Post-Traumatic Osteoarthritis**
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SAT-423 **RGS12 is a critical proinflammatory factor in the pathogenesis of inflammatory arthritis via acting in Cox2-RGS12-NFκB pathway activation loop**
*Gongsheng Yuan[1], Shuting Yang[1], Shuying Yang[1], Andrew Ng[2], Merry Jo Oursler[3]. [1]University of Pennsylvania, United States, [2]State University of New York, United States, [3]Mayo Clinic, United States
Disclosures: Gongsheng Yuan, None

SAT-424 **Deficiency of mesenchymal miR-204/miR-211 induces multifaceted pathologic changes of osteoarthritis**
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OSTEOBLASTS

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SAT-440 **Truncating Mutations in Recql4 Cause a Low Bone Mass Phenotype, but Not Osteosarcoma**
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SAT-441 **Autophagy Suppression by Atg5 Deletion Led to Osteopenia in Mice through mTORC1 Downregulation**
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Disclosures: Han Kyoung Choi, None

ASBMR 2019 Annual Meeting Young Investigator Award

SAT-442 **Macrophage-Lineage TRAP+ Cells Recruit Periosteum-Derived Cells for Periosteal Osteogenesis and Regeneration**

*Ruoxian Deng[1], Bo Gao[2], Yu Chai[3], Hao Chen[3], Bo Hu[3], Xiao Wang[3], Shouan Zhu[3], Shuangfei Ni[3], Yong Cao[3], Mei Wan[3], Liu Yang[4], Zhuojing Luo[4], Xu Cao[5]. [1]Department of Orthopaedic Surgery, Department of Biomedical Engineering, The Johns Hopkins University School of Medicine, United States, [2]Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine; Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, United States, [3]Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine, United States, [4]Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, China, [5]Department of Orthopaedic Surgery, Institute of Cell Engineering, The Johns Hopkins University School of Medicine, United States

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SAT-443 **Zbtb40 Loss-of-Function Inhibits Osteoblast Mineralization, Affecting Lumbar Spine Bone Mass in Mice**

*Madison Doolittle[1], Robert Maynard[1], Dana Godfrey[1], Cheryl Ackert-Bicknell[1], Gina Calabrese[2], Larry Mesner[2], Charles Farber[2]. [1]University of Rochester, United States, [2]University of Virginia, United States

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SAT-444 **Crosstalk between glycolysis and mitochondrial metabolism in osteoblasts**

*Wen-Chih Lee[1], Fanxin Long[1]. [1]Children'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 Luther[1], Timur Alexander Yorgan[1], Mona Neven[1], Olga Winter[1], Michael Amling[1], Thorsten Schinke[1], Jean-Pierre David[1]. [1]Institute 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 Nakajima[1], Hisashi Hasegawa[1], Yuji Yamazaki[1], Kenji Nagao[1], Yoshiaki Kitaura[2], Ung-il Chung[3], Shinsuke Ohba[3]. [1]Kyowa Kirin Co., Ltd, Japan, [2]Department of Bioengineering, The University of Tokyo Graduate School of Engineering, Japan, [3]Department of Clinical Biotechnology, The University of Tokyo Graduate School of Medicine, Japan

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SAT-447 **Effect of SerpinB2 in mineralization, cytoprotection and proliferation of osteogenic cells**

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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 Nguyen[1], Yun Lu[1], Wei Chen[1], Yi-Ping Li[1]. [1]Department 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 Owen[1], Kaylah Birmingham[1], Samuel Sanchez[1], Natalie Chung[1], Alexa Cahill[1], Catherine Kauber[1], Shanqiao Wei[2], James O'Malley[3], María Inés Morano[4], Stephen Barrett[4]. [1]Ramapo College of New Jersey, United States, [2]Cayman Chemical, United States, [3]Myometrics, LLC, United States, [4]Cayman Chemical, United States

Disclosures: Thomas Owen, Cayman Chemical, Consultant

SAT-450 **Interleukin-6 signaling in osteoblasts promotes osteoclast differentiation**

*Biagio Palmisano[1], Subrata Chowdhury[1], Gerard Karsenty[1], Juan Hidalgo[2]. [1]Department of Genetics and Development, Columbia University Irving Medical Center, United States, [2]Department of Cellular Biology, Physiology and Immunology, Faculty of Biosciences, Universitat Autònoma de Barcelona, Spain

Disclosures: Biagio Palmisano, None

ASBMR 2019 Annual Meeting Young Investigator Award

SAT-451 **APP promotes osteoblast survival and bone formation by regulating mitochondrial function and preventing oxidative stress**

*Jinxiu Pan[1], Fulei Tang[2], Kai Zhao[2], Lei Xiong[3], Peng Zeng[3], Bo Wang[3], Haohan Guo[3], Lin Mei[3], Wen-Cheng Xiong[3]. [1] Case Western Reserve University, United States, [2]Augusta University, United States, [3]Case Western Reserve University, United States

Disclosures: Jinxiu Pan, None

SAT-452 **Macf1 Facilitates Nuclear Translocation of SMAD7 to Promote Bone Formation**

*Fan Zhao[1], Xiaoli Ma[1], Wuxia Qiu[1], Pai Wang[1], Zhihao Chen[1], Ru Zhang[1], Peihong su[1], Jianhua Ma[1], Dijie Li[1], Chong Yin[1], Yan Zhang[1], Lei Chen[1], Chaofei Yang[1], Siyu Li[1], Ye Tian[1], Xiao Lin[1], Lifang Hu[1], Airong Qian[1], Ge Zhang[2]. [1]Lab for Bone Metabolism, Key Lab for Space Biosciences and Biotechnology, School of Life Sciences, Northwestern Polytechnical University, Xi'an, Shaanxi 710072, China, China, [2]Northwestern 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 Qian[1], Ying Zhang[1], Xiaomin Kang[1], Yan Zahng[1], Xinxin Jin[1], Mao Xu[1], Zhengmin Ma[1], Liting Zhang[1], Shufang Wu[1], Hui xia Li[2], Xin Gao[2], Zhuanmin Zhang[2], Hongzhi Sun[2]. [1]Center for Translational Medicine, the First Affiliated Hospital of Xi'an Jiaotong University, China, [2]Key Laboratory of Environment and Genes Related to Diseases, Ministry of Education, Medical School of Xi'an Jiaotong University, Xi'an, China

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SAT-454 **The Constitutive Photomorphogenesis 9 (COP9) Signalosome (CSN) Complex is Required for Proper Postnatal Skeletal Growth**

*William Samsa[1], Murali Mamidi[1], Lindsay Bashur[1], Guang Zhou[1]. [1]Case Western Reserve University, United States

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SAT-455 **Expression of TRAF3 by mature osteoblasts protects mice from age- and menopausal-related osteoporosis**

*Gengyang Shen[1], Rong Duan[1], Jinbo Li[1], Lianping Xing[1], Brendan Boyce[1], Zhenqiang Yao[1]. [1]University of Rochester Medical Center, United States

Disclosures: Gengyang Shen, None

SAT-456 **PGC-1α Deletion in Osteoblasts Causes Bone Loss through Inducing Mitochondrial Oxidative Stress**

*Lige Song[1], Yuhua Wen[2], Huijuan Li[2], Xiaoya Zhang[2], Peipei Liu[2], Jing Ma[2]. [1]Tongji Hospital, Tongji University School of Medicien, China, [2]Tongji Hospital, Tongji University School of Medicine, China

Disclosures: Lige Song, None

SAT-457 **The epigentic basis for bone development and homeostais: the role of Vitamin C**

*Roman Thaler[1], Farzaneh Khani[1], Xianhu Zhou[1], Oksana Pichurin[1], Chris Paradise[1], Amel Dudakovic[1], Andre van Wijnen[1], Jian Zhong[2], Jeong-Heon Lee[2], Tamas Ordog[2], Eleftherios Paschalis[3], Klaus Klaushofer[3], David Deyle[4]. [1]Departments of Orthopedics, Mayo Clinic, United States, [2]Epigenomics Program, Center for Individualized Medicine, Mayo Clinic, United States, [3]Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUVA Trauma Centre Meidling, 1st Medical Department, Hanusch Hospital, Vienna, Austria, Austria, [4]Department of Medical Genetics, Mayo Clinic, United States

Disclosures: Roman Thaler, None

SAT-458 **Osteoblast-derived Wnt1 regulates cortical bone mass in adult mice**

*Fan Wang[1], Petri Rummukainen[1], Outi Mäkitie[2], Roland Baron[3], Riku Kiviranta[4]. [1]Institute of Biomedicine, University of Turku, Turku 20520, Finland, Finland, [2]Folkhälsan Institute of Genetics, Helsinki 00290, Finland, Finland, [3]Department of Oral Medicine, Infection and Immunity, Harvard School of Dental Medicine, Harvard University, Boston, MA 02115, USA, United States, [4]Department 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 Xie[1], Yaru Shi[2], Lijie Tian[2], Yi Wang[2], Baoli Wang[3]. [1]first author, China, [2]co-author, China, [3]corresponding author, China

Disclosures: Yan Xie, None

SAT-460 **Plasticity of Osteoblasts and Their Adipogenic Potential Dissected by Single-cell RNA-sequencing**

*Hirotaka Yoshioka[1], Masashi Nakano[2], Tomoko Minamizaki[2], Katsuyuki Kozai[2], Yuji Yoshiko[2]. [1]School of Medicine, International University of Health and Welfare, Japan, [2]Hiroshima 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 Zhang[1], Weiwei Zhao[1], Bryan MacDonald[2], Xi He[2], Alexander Robling[3]. [1]Huazhong University of Science and Technology, China, [2]Harvard Medical School, United States, [3]Indiana University School of Medicine, United States

Disclosures: Xinjun Zhang, None

OSTEOCLASTS

SAT-504 **Tethering Function of Mitofusin2 Controls Osteoclast Differentiation**

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Disclosures: Anna Ballard, None

SAT-505 **Osteoclasts are a target of the sympathetic nervous system**

*Audrey C Bergeron[1], Audrie L Langlais[1], Katherine J Motyl[1]. [1]Maine 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**

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SAT-507 **L-Plastin Deficiency Produces Increased Trabecular Bone Due to reduced osteoclast function**

*Meenakshi Chellaiah[1], Hanan Alijohani[1], Megan Moorer[2], Sunipa Majumdar[3], Sharon Morley[4], Vanessa Yingling[5], Joseph Stains[6]. [1]Department of Oncology and Diagnostic Sciences, School of Dentistry, University of Maryland, United States, [2]Department of Orthopedics, University of Maryland School of Medicine, United States, [3]Department of Oncology and Diagnostic Sciences, School of Dentistry, University of Maryland, United States, [4]3Department of Pediatrics, Division of Infectious Diseases, and Department of Pathology and Immunology, Washington University School of Medicine, United States, [5]Department of Kinesiology, California State University, United States, [6]Department of Orthopaedics, University of Maryland School of Medicine, United States

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SAT-508 **Identification of RBP-J/NFATc1-miR182 as a novel network regulating inflammatory osteoclastogenesis and bone resorption**

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Disclosures: Kazuki Inoue, None

SAT-509 **Osteoclasts promote trabecular bone formation through the suppression of sclerostin expression**

*Masanori Koide[1], Yasuhiro Kobayashi[1], Teruhito Yamashita[1], Shunsuke Uehara[1], Naoyuki Takahashi[1], Nobuyuki Udagawa[1], Kohei Murakami[2], Hisataka Yasuda[3]. [1]Matsumoto Dental University, Japan, [2]Okayama University of Science, Japan, [3]Oriental Yeast Co., Ltd., Japan

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SAT-510 **Disruption of Heparan Sulfate–RAGE Interaction Impairs Osteoclastogenesis**

*Miaomiao Li[1], Xiaoxiao Zhang[1], Ding Xu[1]. [1]State University of New York at Buffalo, United States

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SAT-511 **Comprehensive Analysis of Osteoclastogenic Proteome Reshaping Reveals a Novel Regulator of Osteoclast Differentiation and Function**

*Maria Materozzi[1], Luigi Gennari[1], Cecilia Facchi[2], Massimo Resnati[2], Enrico Milan[2], Simone Cenci[2]. [1]Department of Medicine, Surgery and Neurosciences, University of Siena, Italy, [2]Unit of Age Related Diseases, Division of Genetics and Cell Biology, San Raffaele Scientific institute, Italy

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SAT-512 **CTLA4-Ig directly inhibited osteoclastogenesis by interfering with intracellular calcium oscillations in bone marrow macrophages**

*Hiroyuki Okada[1], Hiroshi Kajiya[2], Shunichi Sudo[2], Masashi Shin[2], Fujio Okamoto[2], Koji Okabe[2], Yasunori Omata[3], Takumi Matsumoto[3], Jun Hirose[3], Sakae Tanaka[3], Taku Saito[4], Takeshi Miyamoto[5]. [1]Department of Orthopaedic Surgery, the University of Tokyo, Japan, [2]Department of Physiological Science and Molecular Biology, Fukuoka Dental College, Japan, [3]Department of Orthopedic Surgery, The University of Tokyo, Japan, [4]Department 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

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SAT-513 **Nrf2-Mediated Negative Regulation of MYC in Osteoclastogenesis**

*Peter S. Park[1], Kaichi Kaneko[1], Seyeon Bae[1], Kyung-Hyun Park-Min[1]. [1]Hospital for Special Surgery, United States

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SAT-514 **Slit-ROBO Rho GTPase Activating Protein 2 (SRGAP2) in Osteoclasts Limits Inflammatory Osteoclastogenesis and Inhibits Expression of the Coupling Clastokine SLIT3**

*Bongjin Shin[1], Anne Delany[1], Sun-Kyeong Lee[1], Justine Kupferman[2], Ewoud Schmidt[2], Franck Polleux[2]. [1]UConn Health, United States, [2]Columbia University, United States

Disclosures: Bongjin Shin, None

Posters

SAT-515 **Ga13 restrains osteoclast function by cytoskeletal and mitochondrial regulation**

*Kazuki Inoue[1], Jumpei Shirakawa[1], Shinichi Nakano[1], Cheng Xu[1], Zhonghao Deng[1], Gregory Vitone[1], Baohong Zhao[1], Viktoriya Syrovatkina[2], Xin-Yun Huang[2], Liang Zhao[3]. [1]Arthritis and Tissue Degeneration Program and The David Z. Rosensweig Genomics Research Center, Hospital for Special Surgery, United States, [2]Department of Physiology and Biophysics, Weill Cornell Medical College, United States, [3]Department of Orthopedic Surgery, Nanfang Hospital, Southern Medical University, China

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 Tenshin[1], Masahiro Hiasa[1], Mohannad Ashtar[1], Kotaro Tanimoto[1], Eiji Tanaka[1], Jumpei Teramachi[2], *Hirofumi Tenshin[3], Masahiro Hiasa[3], Mohannad Ashtar[3], Kotaro Tanimoto[3], Eiji Tanaka[3], Asuka Oda[4], Masami Iwasa[4], Ariunzaya Bat-Erdene[4], Takeshi Harada[4], Masahiro Abe[4], Asuka Oda[5], Masami Iwasa[5], Ariunzaya Bat-Erdene[5], Takeshi Harada[5], Masahiro Abe[5], Itsuro Endo[6], Toshio Matsumoto[7]. [1]Department of Orthodontics and Dentofacial Orthopedics, Institute of Biomedical Sciences, Tokushima University Graduate School, Japan, [2]Department of Tissue Regeneration, Institute of Biomedical Sciences, Tokushima University Graduate School, Japan, Japan, [3]Department of Orthodontics and Dentofacial Orthopedics, Institute of Biomedical Sciences, Tokushima University Graduate School, Syrian Arab Republic, [4]Department of Hematology, Endocrinology and Metabolism, Institute of Biomedical Sciences, Tokushima University Graduate School, Japan, [5]Department of Hematology, Endocrinology and Metabolism, Institute of Biomedical Sciences, Tokushima University Graduate School, Mongolia, [6]Department of Chronomedicine, Institute of Biomedical Sciences, Tokushima University Graduate School, Japan, [7]Fujii Memorial Institute of Medical Sciences, Tokushima University, Japan

Disclosures: Hirofumi Tenshin, None

SAT-517 **Novel Insights into the SHP2's Regulation of Osteoclastogenesis and Skeletal Remodeling**

*Jiayu Wei[1], Lijun Wang[2], Jiahui Huang[2], Ryan Sperratore[2], Douglas Moore[2], Wentian Yang[2]. [1]Department of Nutrition and Food Safety, School of Public Health, School of Medicine, Zhejiang University, Hangzhou 310058, China. Department of Orthopaedics, Rhode Island Hospital and Brown University Alpert Medical School, Providence, RI 02903, United States, [2]Department of Orthopaedics, Rhode Island Hospital and Brown University Alpert Medical School, Providence, RI 02903, United States

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SAT-518 **Hematopoietic stem cell-independent erythromyeloid progenitors in the yolk-sac give rise to osteoclasts contributing to the postnatal bone remodeling**

*Yasuhito Yahara[1], Benjamin Alman[2]. [1]Duke University, University of Toyama, United States, [2]Duke University, United States

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SAT-519 **HES1 is a Novel Determinant of Osteoclast Differentiation**

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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], MaIi-Szu Wu[1,2,3], Jia-Fuh Shyu[5], Yuh-Feng Lin[1,2,3], Cai-Mei Zheng[1,2,3]. [1]Graduate Institute of Clinical Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan, [2]Division of Nephrology, Department of Internal Medicine, School of Medicine, Taipei Medical University, Taipei, Taiwan, [3]Division of Nephrology, Department of Internal Medicine, Shuang Ho Hospital, Taipei Medical University, Taipei, Taiwan, [4]Division of Nephrology, Department of Medicine, Fu Jen Catholic University Hospital, School of Medicine, Fu Jen Catholic University, New Taipei City, Taiwan, [5]Division 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 Arai[1], Hiroki Ochi[1], Satoko Sunamura[1], Shingo Sato[1], Shu Takeda[2]. [1]Department of Physiology and Cell Biology, Tokyo Medical and Dental University, Japan, [2]Division of Endocrinology, Toranomon Hospital Endocrine Center, Japan

Disclosures: Makoto Arai, None

SAT-558 **PPARγ Regulation of Osteocyte Fuel Dependency and Capacity Contributes to the Balance of Systemic Energy Metabolism**

*Sudipta Baroi[1], Amit Chougule[2], Beata Lecka-Czernik[2], Patrick Griffin[3]. [1]University of Toledo College of Medicine & Life Sciences, United States, [2]University of Toledo College of Medicine and Life Sciences, United States, [3]The Scripps Research Institute, United States

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SAT-559 **Osteocyte Oxidative Stress Following Estrogen Loss, Microdamage and Disuse**

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SAT-560 **Mechanical Loading Reduces the Adverse Effects of Fatty Acid Overload on Osteocytes**

*Yukiko Kitase[1], Alberto Smargiassi[1], Lynda Bonewald[1], Nuria Lara[2], Mark Johnson[3]. [1]Indiana University, United States, [2]University of Missouri at Kansas City, United States, [3]University 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 Liu[1], Ye Yuan[1], Rakshya Rana[1], Janaina Martins[2]. [1]Brigham and Womens Hospital, United States, [2]Massachusetts General Hospital, United States

Disclosures: Eva Liu, None

SAT-562 **Mechanical Loading-induced Changes in the Sclerostin Distribution around Osteocytes**

*Ryuta Osumi[1], Yoshihito Ishihara[1], Naoya Odagaki[1], Ziyi Wang[2], Hiroshi Kamioka[2], Tadahiro Iimura[3]. [1]Department of Orthodontics, Okayama University Hospital, Japan, [2]Department of Orthodontics, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Japan, [3]Department 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-Lewis[1], Anthony Meljanac[1], Nuria Lara[1], Mark Johnson[1], Sarah Dallas[1], Yukiko Kitase[2], Lynda Bonewald[2]. [1]University of Missouri Kansas City, United States, [2]Indiana University, United States

Disclosures: LeAnn Tiede-Lewis, None

SAT-564 **Accelerated aging and bone loss in mice lacking PTH receptor in osteocytes**

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SAT-565 **Hyperglycemia Alters Gene Expression of Sclerostin but not RANKL in Ocy454 Osteocytes**

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SAT-566 **Progranulin Has Pro-Inflammatory Effects In Bone**

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SAT-567 **Osteocyte estrogen receptor-beta affects bone turnover and skeletal mechanotransduction differently in young and adult male mice.**

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OSTEOPOROSIS - ASSESSMENT

SAT-589 **MRI-based textural analysis of trabecular bone: a novel method for opportunistic screening of bone quality**

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SAT-590 **Force to Fracture: Simplified Biomechanical Model of Osteoporotic Fractures for the Medical Provider**

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SAT-591 **Local bone density defects in patients with femoral neck fracture**

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SAT-592 **Stratification of fracture risk in type 2 Diabetes: development and validation of clinical algorithms from a task force of relevant medical societies**

*Iacopo Chiodini[1], Alberto Falchetti[1], Agostino Gaudio[2], Andrea Palermo[3], Nicola Napoli[3], Fabio Vescini[4], Daniela Merlotti[5], Stefano Gonnelli[5], Ranuccio Nuti[5], Luigi Gennari[5], Cristina Eller-Vainicher[6], Vincenzo Carnevale[7], Alfredo Scillitani[7], Giuseppe Pugliese[8], Domenico Rendina[9], Antonio Salcuni[10], Francesco Bertoldo[11], Vincenzo Toscano[12], Vincenzo Triggiani[13], Simone Cenci[14]. [1]Unit for Bone Metabolism Diseases and Diabetes and Lab of Endocrine and Metabolic Research, IRCCS Istituto Auxologico Italiano, Milan, Italy, Italy, [2]Department of Clinical and Experimental Medicine, University of Catania, University Hospital "G. Rodolico" Catania, Italy, [3]Department of Endocrinology and Diabetes, University Campus Bio-Medico, Rome, Italy, Italy, [4]Endocrinology and Metabolism Unit, University-Hospital S. M. Misericordia of Udine, Italy, [5]Department of Medicine, Surgery and Neurosciences, University of Siena, Italy, [6]Endocrinology Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy, [7]Unit of Endocrinology, "Casa Sollievo della Sofferenza" Hospital, IRCCS, San Giovanni Rotondo, Italy, [8]Department of Clinical and Molecular Medicine, "La Sapienza" University, and Diabetes Unit, Sant'Andrea University Hospital, Rome, Italy, [9]Department of Clinical Medicine and Surgery, "Federico II" University of Naples, Italy, [10]Endocrinology Unit, Department of Medical Sciences and Public Health, University of Cagliari, Italy, [11]Department of Medicine, University of Verona, Italy, [12]Department of Clinical and Molecular Medicine, "La Sapienza" University, Italy, [13]. Interdisciplinary Department of Medicine, Section of Internal Medicine, Geriatrics, Endocrinology and Rare Diseases. University of Bari "Aldo Moro", School of Medicine, Italy, [14]Division of Genetics and Cell Biology, San Raffaele Scientific Institute, Milan, Italy

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SAT-593 **DXA appendicular lean mass, FRAX, BMD and incident fractures: Findings from the Women's Health Initiative (WHI)**

*Nicholas Harvey[1], Cyrus Cooper[1], John A Kanis[2], Enwu Liu[3], Mattias Lorentzon[4], Jennifer W Bea[5], Laura Carbone[6], Elizabeth M Cespedes Feliciano[7], Deepika R Laddu[8], Peter F Schnatz[9], Aladdin H Shadyab[10], Marcia L Stefanick[11], Jean Wactawski-Wende[12], Carolyn J Crandall[13], Helena Johansson[14], Eugene McCloskey[14]. [1]MRC Lifecourse Epidemiology Unit, University of Southampton, United Kingdom, [2]Centre for Metabolic Bone Diseases, University of Sheffield, United Kingdom, [3]Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, Australia, [4]Institute of Medicine, Sahlgrenska Academy, Sahlgrenska University Hospital, Sweden, [5]University of Arizona, United States, [6]Augusta University, United States, [7]Kaiser Permanente Northern California Division of Research, United States, [8]University of Illinois at Chicago, United States, [9]Sidney Kimmel Medical College at Thomas Jefferson University Philadelphia, USA, United States, [10]University of California, San Diego, United States, [11]Department of Medicine (Stanford Prevention Research Center) Stanford School of Medicine Stanford University, United States, [12]University at Buffalo, the State University of New York, US, United States, [13]School of Medicine, University of California, Los Angeles, US, United States, [14]Centre for Metabolic Bone Diseases, University of Sheffield, Sheffield, United Kingdom

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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**

*Karl Jepsen[1], Carrie Karvonen-Gutierrez[1], Sioban Harlow[1], John Randolph[1], Gregory Clines[1], Michelle Hood[1], Michael Elliott[1], Kathy Peters[2], Stephanie Harrison[2], Peggy Cawthon[2], Jane Cauley[3], Gail Greendale[4], Arun Karlamangla[4], Eric Orwoll[5]. [1]University of Michigan, United States, [2]California Pacific Medical Center Research Institute, United States, [3]University of Pittsburgh, United States, [4]University of California, Los Angeles, United States, [5]Oregon Health and Science University, United States

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Posters

SAT-595 **Potential Impact of Recent Clinical Vertebral Fracture on FRAX 10-year Probability**

*Helena Johansson[1], Enwu Liu[1], John A Kanis[1], Kristin Siggeirsdottir[2], Vilmundur Gudnason[2], Gunnar Sigurdson[2], Nicholas C Harvey[3], Eugene McCloskey[4], Mattias Lorentzon[5]. [1]McKillop Health Institute, Australian Catholic University, Australia, [2]Icelandic Heart Association, Iceland, [3]MRC Lifecourse Epidemiology Unit, University of Southampton, United Kingdom, [4]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, United Kingdom, [5]Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, University of Gothenburg, Sweden

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SAT-596 **Anatomical factors associated with female femoral neck fractures in Beijing women**

*Benjamin Khoo[1], Ling Wang[2], Xiao Guang Cheng[2], Joshua Lewis[3], Keenan Brown[4], Richard Prince[5]. [1]Sir Charles Gairdner Hospital, Australia, [2]Beijing Jishuitan Hospital, China, [3]Edith Cowan University, Australia, [4]Mindways Software, United States, [5]University of Western Australia, Australia

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ASBMR 2019 Annual Meeting Young Investigator Award

SAT-597 **Comparison of the predictive ability of quantitative and qualitative scoring methods of osteoporotic vertebral fractures using operational skeletal fragility outcomes**

*Fjorda Koromani[1], Katerina Trajanoska[1], Ling Oei[1], Carola Zillikens[1], Gabriel Krestin[1], Andre Uitterlinden[1], Edwin Oei[1], Fernando Rivadeneira[1], Enisa Shevroja[2]. [1]Erasmus MC, Netherlands, [2]Lausanne University Hospital, Switzerland

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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. Lee[1], Namki Hong[2], Yumie Rhee[2], Sundeep Khosla[3], Tony M. Keaveny[4]. [1]O.N. Diagnostics, United States, [2]Yonsei University College of Medicine, Republic of Korea, [3]Mayo Clinic, United States, [4]University of California, Berkeley, United States

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

*William Leslie[1], Lisa Lix[1], John Schousboe[2], Suzanne Morin[3], Patrick Martineau[4], Helena Johansson [5], John Kanis[5], Eugene McCloskey[6], Nicholas Harvey[7]. [1]University of Manitoba, Winnipeg, Canada, Canada, [2]Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US; University of Minnesota, Minneapolis, US, United States, [3]McGill University, Montreal, Canada, Canada, [4]University of Manitoba, Winnipeg, Canada; Harvard Medical School, Boston, US, Canada, [5]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK; Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, United Kingdom, [6]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, [7]MRC 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

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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 Martineau[1], William Leslie[2], Lisa Lix[2], John Schousboe[3], Didier Hans[4]. [1]University of Manitoba/Harvard Medical School, Canada, [2]University of Manitoba, Canada, [3]Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US/University of Minnesota, United States, [4]Center of Bone Diseases, Bone and Joints Department, Lausanne University Hospital & University of Lausanne, Lausanne, Sw, Lausanne, Switzerland, Switzerland

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SAT-601 **Bone remodeling measurement by quantifying new bone formation and resorbed bone mass in calcified bones using quantitative computed tomography**

*Nobuhito Nango[1], Shogo Kubota[1], Kazutaka Nomura[1], Yusuke Horiguchi[1], Ko Chiba[2], Masafumi Machida[3]. [1]Ratoc System Engineering Co., LTD., Japan, [2]Department of Orthopedic Surgery, Nagasaki University Graduate School of Biomedical Sciences, Japan, [3]Department 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 Dash[1], Alexandra Krez[1], Han Jo Kim[1], Matthew Cunningham[1], Frank Schwab[1], Jonathan Cheah[1], Richard Bockman[1], Emily Stein[1], Brandon Carlson[2], Yi Liu[3]. [1]Hospital for Special Surgery, United States, [2]University of Kansas, United States, [3]Lahey Clinic, United States

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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 Adams[1], Bonnie Li[1], Denison Ryan[1], Richard Dell[1], Erik Geiger[2], Dennis Black[2]. [1]Kaiser Permanente Southern California, United States, [2]University 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**

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Disclosures: Huei-Kai Huang, None

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 Koromani[1], Ling Oei[1], Katerina Trajanoska[1], Josje Schoufour[1], Taulant Muka[1], Oscar Franco[1], Arfan Ikram[1], Carola Zillikens[1], Andre Uitterlinden[1], Gabriel Krestin[1], Edwin Oei[1], Fernando Rivadeneira[1], Enisa Shevroja[2], Olivier Lamy[2], Didier Hans[2], Tassos Anastassiades[3], William Leslie[3], Robert Josse[4], Jerilynn Prior[4], Stephanie Kaiser[5], David Goltzman[6], Brian Lentle[7], Robert Josse[8], Jerilynn Prior[8], Eugene McCloskey[9]. [1]Erasmus MC, Netherlands, [2]Lausanne University Hospital, Switzerland, [3]University of Manitoba, Canada, [4]University of Toronto, Netherlands, [5]Dalhousie University, Canada, [6]McGill University, Canada, [7]University of British Columbia, Canada, [8]University of Toronto, Canada, [9]11The Mellanby 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**

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Disclosures: Hoi-Yee Gloria Li, None

SAT-635 **Longitudinal changes in bone mineral density during perimenopausal transition: the Vietnam Osteoporosis Study**

*Lan Ho-Pham[1], Long Van[1], Linh Mai[2], Tuan Nguyen[3]. [1]Ton Duc Thang University, Viet Nam, [2]Pham Ngoc Thach University of Medicine, Viet Nam, [3]Garvan 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 Nishimura[1], Kazuhiko Arima[1], Yoshihito Tomita[1], Satoshi Mizukami[1], Yasuyo Abe[1], Kiyoshi Aoyagi[1]. [1]Nagasaki 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 Rodriguez[1], Peter Ebeling[1], Martin Ernst[2], Mads Nybo[3], Pernille Hermann[3], Daniel Prieto-Alhambra[4], Bo Abrahamsen[5]. [1]Monash University, Australia, [2]University of Southern Denmark, Denmark, [3]Odense University Hospital, Denmark, [4]University of Oxford, United Kingdom, [5]University 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**

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SAT-639 **The Pattern of Incident Fractures in Patients with Type 2 Diabetes Mellitus**

*Cindy Sarodnik[1], Nicklas Rasmussen[2], Sandrine Bours[3], Nicolaas Schaper[4], Frank de Vries[5], Peter Vestergaard[6], Joop van den Bergh[7], Annemariek Driessen[8]. [1]NUTRIM Research School, Maastricht University, Maastricht, The Netherlands, Netherlands, [2]Steno Diabetes Center North Jutland, Aalborg University Hospital, Aalborg, Denmark, Denmark, [3]Department of Internal Medicine, Subdivision Rheumatology, Maastricht University Medical Centre+, CAPHRI Research School, Maastricht University, Maastricht, The Netherlands, Netherlands, [4]NUTRIM Research School, Maastricht University, Department of Internal Medicine, Subdivision Endocrinology, Maastricht University Medical Centre+, Maastricht, The Netherlands, Netherlands, [5]Utrecht University, Department of Pharmaceutical Sciences, Division of Pharmacoepidemiology & Clinical Pharmacology, Utrecht, the Netherlands, Netherlands, [6]Steno Diabetes Center North Jutland, Department of Endocrinology, Aalborg University Hospital, Aalborg, Denkmark, Denmark, [7]NUTRIM 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, [8]NUTRIM 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**

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Disclosures: Marian Schini, None

SAT-641 **Differential Risk of Fracture Attributable to Type 2 Diabetes Mellitus According to Skeletal Site**

*John Schousboe[1], Suzanne Morin[2], Patrick Martineau[3], Lisa Lix[4], William Leslie[4]. [1]Park Nicollet Clinic and HealthPartners Institute, United States, [2]Research Institute of the McGill University Health Centre, Canada, [3]University of Manitoba and Harvard University, Canada, [4]University of Manitoba, Canada

Disclosures: John Schousboe, None

SAT-642 **Associations of Clinically Unrecognized vs Clinically Recognized Vertebral Fracture with Subsequent Mortality**

*John Schousboe [1], Lisa Lix[2], William Leslie[2], Suzanne Morin[3]. [1]Park Nicollet Clinic and HealthPartners Institute, United States, [2]University of Manitoba, Canada, [3]Research 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 Schousboe[1], Suzanne Morin[2], Patrick Martineau[3], Lisa Lix[4], William Leslie[4]. [1]Park Nicollet Clinic and HealthPartners Institute, United States, [2]Research Institute of the McGill University Health Centre, Canada, [3]University of Manitoba and Harvard University, Canada, [4]University of Manitoba, Canada

Disclosures: John Schousboe, None

SAT-644 **Real-World Outcomes and Imminent Fractures After Index Fragility Fracture: A Population Study**

*Jonathan D Adachi[1], Jacques P Brown[2], Emil H Schemitsch[3], Jean-Eric Tarride[4], Ponda Motsepe-Ditshego[5], Natasha Burke[5], Stephen M Colgan[5], Lubomira Slatkovska[5]. [1]St Joseph's Healthcare, McMaster University, Canada, Canada, [2]CHU de Québec (CHUL) Research Centre, Laval University, Canada, Canada, [3]Division of Orthopaedics, Department of Surgery, Western University, Canada, Canada, [4]Department of Health Research Methods, Evidence and Impact (HEI), McMaster University, Canada, [5]Amgen 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 Strotmeyer[1], Robert Boudreau[1], Mary Winger[1], Jane Cauley[1], Sheena Patel[2], Peggy Cawthon[2], Paolo Caserotti[3], Andrew Burghardt[4]. [1]Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, United States, [2]California Pacific Medical Center Research Institute, United States, [3]Department of Sports Science and Clinical Biomechanics and the Center for Active and Healthy Ageing, University of Southern Denmark, Denmark, [4]Department of Radiology & Biomedical Imaging, University of California, United States

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SAT-646 **The Association between Osteocalcin, Adiposity and Bone health: results from a population-based cohort**

*Katerina Trajanoska[1], Carolina Medina Gomez[1], M Carola Zillikens[1], Andre G. Uitterlinden[1], Fernando Rivadeneira[1]. [1]Department 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 Ward[1], Camille Parsons[1], Cyrus Cooper[1], Rachel Cooper[2], Diana Kuh[3]. [1]MRC Lifecourse Epidemiology, University of Southampton, United Kingdom, [2]Musculoskeletal Science and Sports Medicine Research Centre, Department of Sport and Exercise Sciences, Faculty of Science and Engineering, Manchester Metropolitan University, United Kingdom, [3]MRC 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 Xu[1], Qing Wu[1]. [1]UNIVERSITY 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 Zhang[1], Hong-Wen Deng[1]. [1]Tulane 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 Tarride[1], Johnathan D Adachi[2], Jacques P Brown[3], Emil H Schemitsch[4], Ponda Motsepe-Ditshego[5], Stephen M Colgan[5], Natasha Burke[5]. [1]Department of Health Research Methods, Evidence and Impact (HEI), McMaster University, Canada, Canada, [2]St Joseph's Healthcare, McMaster University, Canada, Canada, [3]CHU de Québec (CHUL) Research Centre, Laval University, Canada, Canada, [4]Division of Orthopaedics, Department of Surgery, Western University, Canada, Canada, [5]Amgen Canada Inc, Canada

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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 Coassy[1], Hervé Locrelle[1], Thierry Thomas[1], Axel Svedbom[2], Roland Chapurlat[3], Bernard Cortet[4], Patrice Fardellone[5], Orcel Philippe[6], Christian Roux[7], John Kanis[8]. [1]INSERM U1059 - Université de Lyon, CHU de St-Etienne, France, [2]Mapi, Sweden, [3]INSERM Research Unit 1033–Université de Lyon, Hospices Civils de Lyon, France, [4]CHU de Lille, France, [5]CHU Amiens-Picardie, France, [6]Hôpitaux Universitaires Saint-Louis-Lariboisière-Fernand-Widal, AP–HP - Inserm UMR132 BIOSCAR, Université Paris Diderot, France, [7]Hôpital Cochin, AP-HP - INSERM U1153, Université Paris Descartes, France, [8]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, United Kingdom

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SAT-689 **Social Isolation: An Important Predictor of Adverse Events and Patient Reported Outcome Measures (PROMs) in Elderly Hip Fracture Patients**

*Dina Sheira[1], Joseph M. Lane[1], Jackie Finik[1], Marianna B. Frey[1], Serena Lian[1], Michael Tiongson[1], Kirsten Grueter[1], Lisa A. Mandl[1]. [1]Hospital for Special Surgery, United States

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SAT-690 **Improved Osteoporosis Treatment Rates Utilizing a Multidisciplinary Team Approach**

*Violet Lagari[1]. [1]Miami VA Healthcare System, United States

Disclosures: Violet Lagari, None

SAT-691 **Improving Pain Control Following Fractures in the Emergency Department: the PAINFREE Initiative**

*Suzanne Morin[1], David Lussier[1], Jose Morais[1], Céline Gélinas[1], Nancy Mayo[1], Michelle Wall[2], Marija Djekic-Ivankovic[3], Claudie Berger[3], Amel Baghdadli[3], Daoust Raoul[4]. [1]McGill University, Canada, [2]Research Institute of the McGill University Health Center, Canada, [3]Research Institute of the McGill University Health Centre, Canada, [4]Universtié de Montreal, Canada

Disclosures: Suzanne Morin, None

SAT-692 **A pioneering attempt to approach non-responders to FLS invitation by home visits and questionnaires.**

*Peter van den Berg[1], Paul van Haard[2], Piet Geusens[3], Joop van den Bergh[4], Dave Schweitzer[5]. [1]Dept. of Orthopedics en Traumatology, Fracture Liaison Service Reinier de Graaf Gasthuis Delft, Netherlands, [2]Dept. of Medical Laborotories Association of Clinical Chemistry Reinier de Graaf Gasthuis Delft, Netherlands, [3]Dept. of Internal Medicine, Subdivision Rheumatology, Maastricht Medical Center; Hasselt University Belgium; Biomedical Research Center Hasselt University Diepenbeek Belgium., Netherlands, [4]Dept. 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, [5]Dept. 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**

*Kristen Beavers[1], Lauren Fasth[1], Nancy Waltman[2], Kevin Kupzyk[2], Laura Flores[2], Laura Bilek[2], Joan Lappe[3]. [1]Wake Forest University, United States, [2]University of Nebraska Medical Center, United States, [3]Creighton University, United States

Disclosures: Kristen Beavers, None

SAT-707 **Evaluating the Relationship Between Physical Activity Level and Bone Structure: a pQCT Analysis**

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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 Harding[1], Benjamin K Weeks[1], Lisa J Weis[2], Conor Lambert[3], Steven L Watson[3], Belinda R Beck[3]. [1]School of Allied Health Sciences, Griffith University, Australia, [2]The Bone Clinic, Australia, [3]School of Allied Health Sciences, Australia

Disclosures: Amy T Harding, None

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**

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Disclosures: Chris Hartley, None

SAT-710 **A comparison of DXA-derived bone responses to impact versus resistance training in young adult women: The OPTIMA-Ex trial.**

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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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Disclosures: Kiyoko Nawata, None

SAT-713 **Time of Day Does Not Appear to Influence Changes in Bone Biomarkers in Response to Exercise**

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Disclosures: Sarah Wherry, None

OSTEOPOROSIS - PATHOPHYSIOLOGY

SAT-728 **TRAF3 in mesenchymal progenitor cells limits low-level chronic inflammation associated with osteoporosis by inhibiting GSK-3β induced NF-KB activation**

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Disclosures: Akram Ayoub, None

SAT-729 **Interactive Effects of Lactation History and Estrogen Status on Cellular Activities of Rat Maternal Bone**

*Yihan Li[1], Yilu Zhou[1], Chantal de Bakker[1], Hongbo Zhao[1], Luqiang Wang[1], Leilei Zhong[1], Lutian Yao[1], Ling Qin[1], Xiaowei Sherry Liu[1]. [1]University of Pennsylvania, United States

Disclosures: Yihan Li, None

SAT-730 **Inverse correlation between trabecular bone volume and bone marrow adipose tissue in rats treated with osteoanabolic agents**

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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 Alencar[1], iana de Araujo[1], Luciana Parreiras e Silva[1], Adriana Carvalho[1], Marcello Nogueira Barbosa[1], Wilson Salgado Jr[1], Francisco Jose de Paula[1], Carlos Salmon[2]. [1]Ribeirao Preto Medical School, USP, Brazil, [2]FFCLRP, USP, Brazil

Disclosures: Maria Augusta Alencar, None

SAT-738 **Utility of Trabecular Bone Score (TBS) for Fracture Risk Assessment in Glucocorticoid-Induced Osteoporosis**

*Helena Florez[1], Silvia Ruiz-Gaspà[1], Ana Monegal[1], Núria Guañabens[1], Pilar Peris[1], José Hernández-Rodríguez [2], Sergio Prieto-González [2], Maria C. Cid[2], Africa Muxi[3], Josep Lluis Carrasco[4]. [1]Metabolic Bone Diseases Unit. Department of Rheumatology. Hospital Clinic, University of Barcelona, Spain, [2]Vasculitis Research Unit, Department of Autoimmune Diseases, Hospital Clínic, University of Barcelona, Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona, Spain., Spain, [3]Department of Nuclear Medicine. Hospital Clinic, University of Barcelona, Spain, [4]Biostatistics, 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**

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SAT-740 **Effects of SGLT2 Inhibitors on Fractures and Bone Mineral Density in Type 2 Diabetes Mellitus: An Updated Meta-analysis**

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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 Moseley[1], Ann Schwartz[2], Elsa Strotmeyer[3], Jane Cauley[3], Steven Cummings[4], Tamara Harris[5], Kenneth Feingold[6], Frances Tylavsky[7], Deborah Sellmeyer[8]. [1]Johns Hopkins University, United States, [2]University of California San Francisco, United States, [3]University of Pittsburg, United States, [4]University of California San Francisco, United States, [5]Laboratory of Epidemiology and Population Sciences (NIA-IRP-LEPS), United States, [6]University of California, San Francisco, United States, [7]University of Tennessee HSC, United States, [8]Stanfprd University, United States

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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**

*Ko Chiba[1], Narihiro Okazaki[1], Kazuteru Shiraishi[1], Makoto Osaki[1]. [1]Nagasaki University Graduate School of Biomedical Sciences, Japan

Disclosures: Ko Chiba, None

SAT-765 **A sensitive method to monitor the migration of human bone marrow mesenchymal stem cells in mice models.**

*Alvaro del Real[1], Carolina Sañudo[1], Carmen Valero[1], Jose A. Riancho[1], Laura Lopez-Delgado[2], Maria I. Perez_nuñez[3], Esther Laguna[3], Guillermo Menendez[3], Ana Alfonso[4], Belen Garcia-Montesinos[5], Diego Ferreño[6], Jose A. Sainz-Aja[6], Ana Santurtun[7]. [1]Department of Internal Medicine, Hospital Universitario Marqués de Valdecilla-IDIVAL, University of Cantabria, Santander, Spain, Spain, [2]Department of Internal Medicine, Hospital Universitario Marqués de Valdecilla-IDIVAL, University of Cantabria, Santander, Spai, Spain, [3]Department of Traumatology/Hospital U M Valdecilla, University of Cantabria, Santander, Spain, Spain, [4]Department of Traumatology/Hospital U M Valdecilla, University of Cantabria, Santander, Spai, Spain, [5]Department of Maxillofacial Surgery/Hospital U M Valdecilla, University of Cantabria, Santander, Spain, Spain, [6]LADICIM (Laboratory of Materials Science and Engineering), University of Cantabria, E.T.S. de Ingenieros de Caminos, Canales y Puertos, Av/Los Castros 44, 39005 Santander, Spain, Spain, [7]Unit of Legal Medicine, Department of Physiology and Pharmacology, University of Cantabria, Santander, Spain, Spain

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

SAT-767 **Effect of Bisphosphonate on Prevention of Bone Loss after Gastrectomy: A Randomized Controlled Trial**

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Disclosures: Ki-Hyun Baek, None

SAT-768 **Predictors of Bone Treatment Recommendation Following Fragility Fracture Within the UK**

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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)**

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

SAT-770 **A POST HOC ANALYSIS OF ROMOSOZUMAB EFFICACY AND BASELINE FRACTURE RISK – GREATER REDUCTION IN FRACTURE OUTCOMES IN PATIENTS AT HIGHER RISK**

*Eugene McCloskey[1], Mattias Lorentzon[2], Helena Johansson[3], John Kanis[3], Nicholas Harvey[4]. [1]Centre for Integrated research in Musculoskeletal Ageing, University of Sheffield, United Kingdom, [2]Sahlgrenska Academy, University of Gothenburg, Sweden, [3]Mary McKillop Health Institute, Australian Catholic University, Australia, [4]MRC Lifecourse Epidemiology Unit, University of Southampton, United Kingdom

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**

*Duncan Tourolle né Betts[1], Charles Ledoux[1], Daniele Boaretti[1], Ralph Müller[1], Mauricio Aguilera[2], Najma Saleem[2], Mauricio Aguilera[3], Najma Saleem[3]. [1]Institute for Biomechanics, ETH Zurich, Switzerland, [2]Amgen Inc., Mexico, [3]Amgen Inc., United States

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SAT-772 **The early effect of the anti-sclerostin antibody**

*Toshinobu Omiya[1], Yoshihiro Yabe[2], Shinji Adachi[3], Toshiyuki Sakimura[4], Itaru Yoda[5], Aki Nishi[6]. [1]oomiya9ort@yahoo.co.jp, Japan, [2]yoshihiro_yabe@mhi.co.jp, Japan, [3]s-adachi@rf6.so-net.ne.jp, Japan, [4]sak1049@yahoo.co.jp, Japan, [5]tarupi_tarupi@yahoo.co.jp, Japan, [6]akinishi.ortho@gmail.com, Japan

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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 Park[1], Jun-Il Yoo[2], Dong Won Byun[3]. [1]Yeungnam University Medical center, Republic of Korea, [2]Gyeongsang National University Hospital, Republic of Korea, [3]Soonchunhyang University Seoul Hospiral, 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**

*Jia-Fwu Shyu[1], Yi-Jun Lin[1], Tzu-Hui Chu[1], Cheng-Yuan Hsiao[1], Pei-Jiun Tsai[2], Tien-Hua Chen[2]. [1]Department of Biology and Anatomy, National Defense Medical Center, Taiwan, Province of China, [2]Institute of Anatomy and Cell Biology, National Yang-Ming University, Taiwan, Province of China

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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 Sugimoto[1], Masataka Shiraki[2], Hiroshi Hagino[3], Takeshi Yoshimura[4], Toshitaka Nakamura[5]. [1]Eikokai Ono Hospital, Japan, [2]Research Institute and Practice for Involutional Diseases, Japan, [3]School of Health Science, Tottori University, Japan, [4]Medical Affairs Department, Asahi Kasei Pharma Corporation, Japan, [5]Toto 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 Tsuchiya[1], Koji Ishikawa[1], Soji Tani[1], Takuma Kuroda[1], Chikara Hayakawa[1], Yoshifumi Kudo[1], Toshiyuki Shirahata[1], Takashi Nagai[1], Tomoaki Toyone[1], Katsunori Inagaki[1], Yusuke Oshita[2]. [1]Department of Orthopaedic Surgery, Showa University School of Medicine, Japan, [2]Department of Orthopaedic Surgery, Yamanashi Red Cross Hospital, Japan

Disclosures: Koki Tsuchiya, None

SAT-780 **The effect of only daily teriparatide without calcium and vitamin D supplementation**

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Disclosures: Itaru Yoda, None

SAT-781 **Bisphophonates Prevent Bone Loss Associated with Denosumab Treatment Discontinuation**

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PARACRINE REGULATORS

SAT-821 **Gut Microbiota-Derived Outer Membrane Vesicle Promotes Skeletal Bone Mass in Aging Mice**

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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 Macleod[1], Keisha Cawley[1], Qiang Fu[1], Melda Onal[1], Charles O'Brien[1]. [1]University of Arkansas for Medical Sciences, United States

Disclosures: Ryan Macleod, None

SAT-823 **Possible roles of IL-12 cytokine family in management of post-menopausal osteoporosis**

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Disclosures: Priyanka Shukla, None

SAT-824 **The Composition Of The Gut Microbiota Is A Non-Genomic Contributor To Bone Mass Heritability**

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PRECLINICAL MODELS OF MUSCULOSKELETAL DISORDERS

SAT-833 **Insights from Lexicon Pharmaceuticals' Genome5000™ Mouse Gene Knockout Campaign**

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Disclosures: Robert Brommage, Lexicon Pharmaceuticals, Grant/Research Support

SAT-834 **Novel model of restricted mobility induced skeletal detriment in zebrafish (Danio rerio)**

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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 Kim[1], Yinshi Ren[1], Olumide Aruwajove[1], Zhuo Deng[1], Thomas Mitchell[2], Michael Kutschke[2]. [1]Texas Scottish Rite Hospital, United States, [2]UT Southwestern Medical Center, United States

Disclosures: Harry Kim, Genentech, Other Financial or Material Support

SAT-836 **The SH3BP2-SYK Axis Regulates Alveolar Bone Loss in a Mouse Model for Periodontitis**

*Mizuho Kittaka[1], Tetsuya Yoshimoto[1], Yasuyoshi Ueki[1], Collin Schlosser[2], Mikihito Kajiya[3], Hidemi Kurihara[3], Ernst Reichenberger[4]. [1]Department of Biomedical Sciences and Comprehensive Care, Indiana University School of Dentistry, Indianapolis, United States, [2]Department of Orthodontics and Dentofacial Orthopedics, University of Missouri-Kansas City, School of Dentistry, United States, [3]Department of Periodontal Medicine, Applied Life Sciences, Institute of Biomedical & Health Sciences, Graduate School of Biomedical & Health Sciences, Hiroshima University, Japan, [4]Department 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**

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Disclosures: Frank Ko, None

SAT-838 **Investigating Global Changes in Gene Expression in a Murine Model of Cherubism**

*Peter Maye[1], Tulika Sharma[1], Ernst Reichenberger[1], Archana Sanjay[1], Justin Cotney[1]. [1]UCONN Health Center, United States

Disclosures: Peter Maye, None

SAT-839 **Time Course of Cortical Porosity Development in Mice with Adenine-Induced Chronic Kidney Disease**

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Disclosures: Corinne E Metzger, None

SAT-840 **CaMKK2-AMPK-p38 MAPK Axis in Osteoarthritis**

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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 Sharma[1], Gustavo Duque[1], Kulmira Nurgali[1], Ahmed Saedi[1]. [1]AIMSS, Australia

Disclosures: Shilpa Sharma, None

SAT-842 **Treatment-induced cortical porosity infilling in an animal model of Progressive Chronic Kidney Disease**

*Elizabeth A. Swallow[1], Corinne E. Metzger[1], Demi R. Lehmkuhler[1], Neal X. Chen[1], Sharon M. Moe[1], Matthew R. Allen[1]. [1]Indiana 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 Talukder[1], Jung Lee[1], Mary O'Brien[1], Zara Karuman[1], John Elfar[1]. [1]Penn 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 Zieba[1], Elda Munivez[1], Alexis Castellon[1], Brendan Lee[1]. [1]Baylor 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 Mullarkey[1], Heike Arlt[1], Dorothy Hu[2], Roland Baron[2], Tadatoshi Sato[3], Marc Wein[4], Bruce Mitlak[5], Beate Lanske[6], Tatiana Besschetnova[6]. [1]Radius Health, Inc., United States, [2]Harvard Dental and Harvard Medical School, United States, [3]Endocrine Unit, Massachusetts General Hospital, Harvard Medical School, Boston, United States, [4]Endocrine Unit, Massachusetts General Hospital, Harvard Medical School, United States, [5]Radius Health, Inc, United States, [6]Radius 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 Gerbaix[1], Serge Ferrari[1], Bernard Roche[2], Marie-Hélène Lafage Proust[2]. [1]Division of Bone Diseases, Geneva University Hospitals and Faculty of Medicine, Geneva, Switzerland, Switzerland, [2]INSERM 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 Tseng[1], Wenzheng Wang[1], Hongbo Zhao[1], Xiaowei Sherry Liu[1]. [1]University 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 Nielsen[1], Stewart Low[1], Philip Low[1], Neal Ramseier[1], Rahul Hadap[1], Nicholas Young[1]. [1]Purdue 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.**

*Amy Y Sato[1], Meloney Cregor[1], Kevin McAndrews[1], Sam Bosco[1], David B Burr[1], Cindy H Nakatsu[2], Gretel G Pellegrini[3], Linda D McCabe[4], George P McCabe[4], Mario G Ferruzzi[5], Mary A Lila[5], Munro Peacock[6], Connie M Weaver[7], Teresita M Bellido[8]. [1]Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, [2]Department of Agronomy, Purdue University, United States, [3]Department 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, [4]Department of Statistics, Purdue University, United States, [5]Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, United States, [6]Department of Medicine, Division of Endocrinology, Indiana University School of Medicine, United States, [7]Department of Nutrition, Purdue University, United States, [8]Department 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

SAT-874 **Dynamics of Modeling- and Remodeling-Based Bone Formation in Response to Intermittent Parathyroid Hormone (PTH) in Male, Female, and Ovariectomized (OVX) Rats**

*Wenzheng Wang[1], Wei-Ju Tseng[1], Hongbo Zhao[1], Nathaniel Dyment[1], Xiaowei Sherry Liu[1]. [1]University of Pennsylvania, United States

Disclosures: Wenzheng Wang, None

SAT-875 **Effects of a novel EP4 agonist on bone metabolism in vitro**

*Shanqiao Wei[1], Stephen Barrett[1], Ines Morano [1], Thomas Owen[2]. [1]Cayman Chemical company, United States, [2]Ramapo College of New Jersey, United States

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-Rotman[1], Natasha Appelman-Dijkstra[1], Alison Boyce[2], Bas Majoor[3], Deborah Gensburger[4], Michiel van de Sande[5], Sander Dijkstra[5], Roland Chapurlat[6]. [1]Center for Bone Quality, dept. of Internal Medicine, division of Endocrinology, Leiden University Medical Center (LUMC), Netherlands, [2]Skeletal Disorders and Mineral Homeostasis Section, National Institute of Dental and Craniofacial Research, National Institutes of Health, United States, [3]Dept. of Orthopaedic surgery, Leiden University Medical Center (LUMC), Netherlands, [4]INSERM UMR 1033, University of Lyon, Hôpital Edouard Herriot, France, [5]Dept. of Orthopaedic surgery, Leiden University Medical Center (LUMC), Netherlands, [6]INSERM 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 Cohen[1], Stephanie Shiau[1], Sanchita Agarwal[1], Mafo Kamanda-Kosseh[1], Mariana Bucovsky[1], John Williams[1], Elizabeth Shane[1], Robert R. Recker[2], Joan M. Lappe[2], Julie Stubby[2], David W. Dempster[3], Hua Zhou[3]. [1]Columbia University Irving Medical Center, United States, [2]Creighton University School of Medicine, United States, [3]Helen 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 Ing[1], Michael Mannstadt[2], Lars Rejnmark[3], István Takács[4], Ivy Song[5], Helen Shapiro[5], Ping He[5], Richard D Finkelman[5]. [1]Division of Endocrinology, Diabetes and Metabolism, Ohio State University Wexner Medical Center, United States, [2]Endocrine Unit, Massachusetts General Hospital and Harvard Medical School, United States, [3]Department of Clinical Medicine, Aarhus University Hospital, Denmark, [4]Department of Medicine, Faculty of Medicine, Semmelweis University, Hungary, [5]Shire 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 Seefried[1], Dominik Rak[1], Franca Genest[1], Ulrike von Hehn[2], Anna Petryk[3]. [1]Orthopaedic Clinic King-Ludwig-Haus, University of Würzburg, Germany, [2]Medistat GmbH, Germany, [3]Alexion 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 Steele[1], Carolyn Macica[1], Richard Feinn[1], Juan Garbalosa[2], Steven Tommasini[3]. [1]Quinnipiac University, Frank H. Netter MD School of Medicine, United States, [2]Quinnipiac University, School of Health Sciences, United States, [3]Yale 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 Boudin[1], Ellen Steenackers[1], Geert Mortier[1], Wim Van Hul[1], Neveen Hamdy[2], Natasha Appelman-Dijkstra[2], Guillermo Martinez[3], Milagros Sierra Bracamonte [3]. [1]University of Antwerp, Belgium, [2]LUMC, Netherlands, [3]12 de Octubre University Hospital, Spain

Disclosures: Eveline Boudin, None

SAT-896 **Intermittent Parathyroid Hormone Treatment Reduces Marrow Adipose Tissue In Patients With Hypoparathryoidism**

*Annegreet G. Veldhuis-Vlug[1], Melissa A. Mariano-Garrett[1], Clifford J. Rosen[1], Rachel I. Gafni[2], Michael T. Collins[2], Dennis M. Black[3]. [1]Maine Medical Center Research Institute, Center for Clinical and Translational Medicine, United States, [2]bSkeletal Disorders and Mineral Homeostasis Section, National Institute of Dental and Craniofacial Research, National Institutes of Health, United States, [3]Department 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 Kotwal[1], Alejandro Ferrer[1], Rajiv Kumar[1], Ravinder Singh[1], Vishakantha Murthy[1], Laura Schultz-Rogers[1], Brandan Lanpher[1], Eric Klee[1], Robert Wermers[1], Michael Zimmermann[2], Demetrios Braddock[3]. [1]Mayo Clinic, United States, [2]Medical College of Wisconsin, United States, [3]Yale University, United States

Disclosures: Anupam Kotwal, None

SAT-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. Whyte[1], Deborah J. Veis[1], S. Deepak Amalnath[2], Suhas Alur[2], William H. McAlister[3], Marc D. McKee[4], Margaret Huskey[5], Shenghui Duan[5], Vinieth N. Bijanki[6], Steven Mumm[7]. [1]Center 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, [2]Department of Medicine, Jawaharlal Institute of Postgraduate Medical Education and Research, India, [3]Mallinckrodt Institute of Radiology, Washington University School of Medicine at St. Louis Children's Hospital, United States, [4]Faculty of Dentistry, and Department of Anatomy and Cell Biology, McGill University, Canada, [5]Division of Bone and Mineral Diseases, Department of Internal Medicine, Washington University, United States, [6]Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children-St. Louis, United States, [7]Center 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 Allen[1], Eileen Shore[1], Mary Mullins[1]. [1]University 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 Bok[1], Dong Yeon Shin[1], Mark Eiseman[1], Ren Xu[1], Alisha Yallowitz[1], Na Li[1], Matthew B. Greenblatt[1], Jae-Hyuck Shim[2]. [1]Department of Pathology and Laboratory Medicine, Weill Cornell Medicine, United States, [2]Department 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 Canalis[1], Jungeun Yu[1], Tamar Grossman[2], Michele Carrer[3]. [1]UConn Health, United States, [2]Ionis Pharmaceuticals, Inc, United States, [3]Ionis 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 Ram[1], Joan C Marini[1], Ghazal Hedjazi[2], Stéphane Blouin[2], Paul Roschger[2], Klaus Klaushofer[2], Nadja Fratzl-Zelman[2], Chris Stephan[3], Kenneth M Kozloff[3]. [1]Section 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, [2]Ludwig Boltzmann Institute of Osteology, 1st Medical Department, Hanusch-Hospital, Austria, [3]Departments 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 Makareeva[1], Shakib Omari[1], Anna M. Roberts-Pilgrim[1], Laura Gorrell[1], Ed Mertz[1], Sergey Leikin[1], Basma Khoury[2], Chris Stephan[2], Kenneth Kozloff [2]. [1]National Institutes of Health, United States, [2]University 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 Mumm[1], Margaret Huskey[1], Shenghui Duan[1], Valerie Wollberg[2], Vinieth Bijanki[2], Gary S. Gottesman[2], Michael P. Whyte[2], Pamela Smith[3]. [1]Division of Bone and Mineral Diseases, Department of Internal Medicine, Washington University School of Medicine, St. Louis, Missouri, USA, United States, [2]Center for Metabolic Bone Disease and Molecular Research, Shriners Hospital for Children, St. Louis, Missouri, USA, United States, [3]Center 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 Roszko[1], Michael Collins[1], Luis Fernandez De Castro Diaz[1], Alison Boyce[1]. [1]NIH/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 Spencer[1], Kristen Pan[1], Pablo Florenzano Valdes[1], Kelly Roszko[1], Alison Boyce[1], Michael Collins[1], Luis Fernandez de Castro Diaz[1], *Tiahna Spencer[2], Kristen Pan[2], Pablo Florenzano Valdes[2], Kelly Roszko[2], Alison Boyce[2], Michael Collins[2], Luis Fernandez de Castro Diaz[2]. [1]National Institutes of Health, United States, [2]National 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 Vääräniemi[1], Jussi M Halleen[1], Jaakko Lehtimäki[1], Jukka Morko[1]. [1]Pharmatest Services, Finland

Disclosures: Jukka Vääräniemi, None

SAT-925 **SIRT1 Promoter SNP rs932658 Associated with Bisphosphonates-related Osteonecrosis of the Jaw**

*Guang Yang[1], Sonal Singh[1], Taimour Langaee[1], Jatinder Lamba[2], Yan Gong[2]. [1]Department of Pharmacotherapy and Translational Research and Center for Pharmacogenomics and Precision Medicine, College of Pharmacy, University of Florida., United States, [2]Department 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 Yoshimoto[1], Yasuyoshi Ueki[1], Mizuho Kittaka[1], Collin Schlosser[2]. [1]Department of Biomedical Sciences and Comprehensive Care, Indiana University School of Dentistry, United States, [2]Department 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 Zhang[1], Kayee Cheuk[1], Yujia Wang[1], Ka-lo Cheng[1], Tsz-ping Lam[1], Bobby Kin Wah Ng[1], Jack Chun Yiu Cheng [1], Wayne Yuk-wai Lee[1], Yong Qiu[2]. [1]1.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, [2]1.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 Alajlouni[1], Tuan Nguyen[1], John Eisman[1], Jacqueline Center[1], Dana Bliuc[2], Thach Tran[2]. [1]Garvan 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, [2]Garvan 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 Binkley[1], Christopher Sempos[2], Ramon Durazo-Arvizu[3], Joan Lappe[4]. [1]University of Wisconsin Madison, United States, [2]Vitamin D Standardization Program, United States, [3]Loyola University Chicago, United States, [4]Creighton 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 Gibbs[1], Livia P Carvalho[2], Vincent Marcangeli[2], Guy El Hajj Boutros[2], Maude C Dulac[2], Mylène Aubertin-Leheudre[2]. [1]McGill University, Canada, [2]Université du Québec à Montréal, Canada

Disclosures: Jenna C Gibbs, None

SAT-953 **Muscle dysfunction in Female Fibroblast Growth Factor 2 Knockout Mice**

*Marja Hurley[1], Liping Xiao[1]. [1]UConn 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 Falkdal[1], Anna Nilsson[1], Lisa Johansson[1], Daniel Sundh[1], Mattias Lorentzon[1]. [1]Geriatric 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 Hars[1], René Rizzoli[1], Serge Ferrari[1], François Herrmann[2], Gabriel Gold[2], Jean-Luc Reny[3], Andrea Trombetti[4]. [1]Division of Bone Diseases, Department of Medicine, Geneva University Hospitals and Faculty of Medicine, Switzerland, [2]Division of Geriatrics, Department of Readaptation and Geriatrics, Geneva University Hospitals and Faculty of Medicine, Switzerland, [3]Division of General Internal Medicine, Department of Medicine, Geneva University Hospitals and Faculty of Medicine, Switzerland, [4]Division 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 TNFα**
*Xiangjiao Yi[1], Jinbo Li[1], Lianping Xing[1], Zhenqiang Yao[2], Brendan Boyce[2]. [1]Pathology, United States, [2]Pathology, 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 Chatterjee[1], Chamith Rajapakse[2]. [1]University of Pennsylvania School of Medicine, Department of Physiology, United States, [2]University 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 Henning[1], Ryan Reger[1], Todd L. Bredbenner[1], Daniella M. Patton[2], Robert W. Goulet[2], Karl J. Jepsen[2], Benjamin Provencher[3], Nicolas Piché[3], Mike Marsh[3], Roberto J. Fajardo[4], Ellen E. Quillen[5]. [1]University of Colorado Colorado Springs, United States, [2]University of Michigan, United States, [3]Object Research Systems, Canada, [4]University of the Incarnate Word School of Medicine, United States, [5]Wake Forest School of Medicine, United States
Disclosures: Emilie Henning, None

LB SAT-975 **BONE MATERIAL PROPERTIES IN PREMENOPAUSAL TYPE 2 DIABETES MELITUS PATIENTS**
*Stamatia Rokidi[1], Klaus Klaushofer[1], Eleftherios P. Paschalis[1], Vicente F.C. Andrade[2], Victoria Z.C. Borba[2], Carolina A. Moreira[3]. [1]Ludwig Boltzmann Institute of Osteology, Austria, [2]Divisão de Endocrinologia (SEMPR), Departamento de Medicina Interna, Universidade Federal do Paraná (UFPR), Brazil, [3]Divisão de Endocrinologia (SEMPR), Departamento de Medicina Interna, Universidade Federal do Paraná (UFPR) & Laboratorio PRO, section of bone histomorphometry, Pro Renal Foundation, Brazil
Disclosures: Stamatia Rokidi, None

LB SAT-976 **The Degradation and Osteogensis of SrHPO4-coated Mg–Nd–Zn–Zr Alloy Intra-medullary Nail in Femoral Shaft Fractured Rat Model mediated by Tlr4/ PI3K/Akt Signaling Pathway**
*Zhe Wang[1], Xinyuan Wang[1], Chang Jiang[1], Junming Huang[1], Hao Wang[1], Zuoqin Yan[1], Zhiying Pang[1], Xiuhui Wang[2]. [1]Zhongshan Hospital, Fudan University, China, [2]Shanghai 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. Duckham[1], Emma M. Laing[2], Richard D. Lewis[2]. [1]Institute for Physical Activity and Nutrition Research, Deakin University, Australia, [2]Department 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 Swanson[1], Jessica Hathaway-Schrader[1], Amy Warner[1], Matthew Carson[1], Joy Kirkpatrick[1], Alex Alekseyenko[1], Sakamuri Reddy[1], Chad Novince[1]. [1]MUSC, 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 disturibation and bone strength in mouse**

*Jiarong Li[1], Richard Kremer[2]. [1]McGill university, Canada, [2]McGill 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 Sousa[1], Evelyne Gineyts[1], Sandra Geraci[1], Lamia Bouazza[1], Martine Croset[1], Philippe Clezardin[1], Isabelle Treilleux[2], Marie Brevet[3], Gabriel Ichim[4], Inês Gomes[5], Sandra Casimiro[5], Luis Costa[5], Jude Canon[6]. [1]INSERM, Research Unit UMR1033, France, [2]Centre Leon Berard, France, [3]Hospices Civils de Lyon, France, [4]Center for Research on Cancer of Lyon, France, [5]Instituto de Medicina Molecular, Portugal, [6]Amgen, 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 Jung[1], Seungwoo Han[2]. [1]Biomedial Research Institute, Gyeongsang National University Hospital, Jinju, Rep. of Korea, Republic of Korea, [2]Department 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 Woods[1], Alyssa Morin[1], Po-Jung Chen[1], Sarah Mahonski[1], Marja Hurley[1], Sumit Yadav[1], Tannin Schmidt[1], Liping Xiao[2]. [1]University of Connecticut Health Center, United States, [2]sarah.a.mahonski@gmail.com, United States

Disclosures: Paige Woods, None

CLINICAL CASE REPORTS

LB SAT-1000 **Relapsing Tumor induced Osteomalacia**

*Natalia Elias[1], Luisa Plantalech[1], Marina Curriá[1], Maria Diehl[2]. [1]no, Argentina, [2]yes, 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 Helderman[1], Clifford Rosen[1], Elizabeth Rendina-Ruedy[1], Daniel Whitney[2], Madalina Duta-Mare[3], Dagmar Kratky[3], Michael Czech[4]. [1]Maine Medical Center Research Institute, United States, [2]Department of Physical Medicine & Rehabilitation, University of Michigan, United States, [3]Medical University of Graz, Austria, [4]University of Massachusetts Medical School, United States

Disclosures: Ron Helderman, None

MECHANOBIOLOGY

LB SAT-1007 **Intracellular Ca2+ signaling encodes mechanotransduction in periodontal ligament fibroblast**

*Ei Eihsuhlaing[1], Ziyi Wang[1], Hiroshi Kamioka[1], Yoshihito Ishihara[2], Naoya Odagaki[2]. [1]Department of Orthodontics, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Japan, [2]Department of Orthodontics, Okayama University Hospital, Japan

Disclosures: Ei Eihsuhlaing, None

LB SAT-1008 **3D Shape Modelling Analysis of the Hip using 3D-SHAPER Software – A Comparison Between Contralateral, Ipsilateral, and Baseline Hips for RTKR, TKR, and Control Participants**

*Michael Gundry[1], Karen Knapp[1], Susan Hopkins[1], Renaud Winzenrieth[2], Laureen Ferchaud[2]. [1]University of Exeter Medical School, United Kingdom, [2]Galgo 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 Cetani[1], Vincenzo Condello[2], Maria Denaro[2], Liborio Torregrossa[2], Elena Pardi[3], Simona Borsari[3], Claudio Marcocci[3], Vito Guarnieri[4], Alfredo Scillitani[4], Giovanni Tallini[5], Fulvio Basolo[6]. [1]University Hospital of Pisa, Unit of Endocrinology, Italy, [2]University Hospital of Pisa, Division of Surgical Pathology, Italy, [3]Department of Clinical and Experimental Medicine, University of Pisa, Italy, [4]Division of Medical Genetics IRCCS "Casa Sollievo della Sofferenza", Italy, [5]Anatomical Pathology, Molecular Diagnostic Unit, University of Bologna, Italy, [6]Department 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 Smith[1], Samuel Golenbock[1], Gerald Miley[1], Scott Tromanhauser[1]. [1]New 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 Chen[1], Kun Chen[1], Han Dong[2], Mahesh Raundhal[2], Roland Baron[3], Matthew Greenblatt[4], Francesca Gori[5]. [1]Department of Bone and Mineral Research, Harvard School of Dental Medicine, Boston, M, United States, [2]Department of Cancer Immunology and Virology, Dana-Farber Cancer Institute and Harvard Medical School, Boston, MA, United States, [3]Department of Bone and Mineral Research, Harvard School of Dental Medicine, & Endocrine Unit, Massachusetts General Hospital, Boston, MA, United States, [4]Department of Pathology and Laboratory Medicine, Weill Medical College of Cornell University/, New York Presbyterian, New York, NY, United States, [5]Department 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 Mejia[1], Elizabeth Olmsted-Davis[1], Alan Davis[1], Elizabeth Salisbury[2], Zbigniew Gugala[2]. [1]Center for Cell and Gene Therapy, Baylor College of Medicine, Texas Children's Hospital and Houston Methodist Hospital, United States, [2]Department 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 Yoon[1], Weonu Choe[1], Sung Eun Kim[1], Ye Ji Lee[1], Kyunghwa Baek[2], Je-Yong Choi[3], Hyun-Mo Ryoo[4]. [1]Bio R&D Center, Sewon Biotechnology, Inc., Republic of Korea, [2]Department of Pharmacology, College of Dentistry and Research Institute of Oral Science, Gangneung-Wonju National University, Republic of Korea, [3]Department of Biochemistry and Cell Biology, Kyungpook National University School of Medicine, Republic of Korea, [4]Department 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 Tian[1], clifford Rosen[2], anyonya guntur[2]. [1]MMCRI, United States, [2]mmcri, United States
Disclosures: Li Tian, None

OSTEOCLASTS

LB SAT-1027 **Distinct Role of Endogenous and Exogenous Leukotrienes on Osteoclastogenesis**
*Jose Burgos Ponce[1], Flavia Oliveira[2], Cintia Tokuhara[3], Adriana Matos[3], Camila Peres Buzalaf[3], Rodrigo Oliveira[3], Vimal Veeriah[4]. [1]University Center of Adamantina, Brazil, [2]Sanford Burnham Prebys Medical Discovery Institute, United States, [3]University 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 Rohatgi[1], Wei Zou[1], Yongjia Li[1], Steven Teitelbaum[1], Anwesha Dey[2]. [1]Washington University-School of Medicine, United States, [2]Genentech, Inc, United States
Disclosures: Nidhi Rohatgi, None

OSTEOCYTES

LB SAT-1033 **Connexin43 hemichannels mediate intracellular Ca2+-regulated mechanotransduction in osteocytes**
*Yoshihito Ishihara[1], Naoya Odagaki[1], Ziyi Wang[2], Ei Ei Hsu Hlaing[2], Yasuyo Sugawara[2], Hiroshi Kamioka[2]. [1]Okayama University Hospital, Japan, [2]Okayama 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 Jiang[1], Xinyuan Wang[1], Zhiying Pang[1], Junming Huang[1], Yiming Wang[1], Hengfeng Yuan[1], Zuoqin Yan[1], Zhe Wang[2]. [1]Zhongshan Hospital, China, [2]Johns Hopkins Hospital, United States
Disclosures: Chang Jiang, None

LB SAT-1035 **TNFα, IL6: Potential drug targets for glucocorticoid-induced bone loss**
*Tiantian Wang[1], Chengqi He[1]. [1]rehabilitation 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 Biver[1], Magaly Hars[1], René Rizzoli[1], Serge Ferrari[1], Renaud Winzenrieth[2]. [1]Division of Bone Diseases, Geneva University Hospitals and Faculty of Medicine, University of Geneva, Switzerland, [2]Musculoskeletal 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 Guio[1], El hassen Ahmed[1], Franck Michelet[1], Enisa Shevroja[2], Olivier Lamy[2], Didier Hans[2]. [1]Medimaps, France, [2]CHUV, 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 Martín[1], Rosa Arboiro Pinel[1], Marjorie Andrade Poveda[1], Manuel Díaz Curiel[1], María Jesús Moro Álvarez[2], Ignacio Mahillo Fernández[3]. [1]Bone Mineral Department, Fundación Jiménez Díaz, Quirónsalud, Spain, Spain, [2]Hospital Infanta Leonor, Spain, Spain, [3]Epidemiology and Bioestatistics 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 Choi[1], Sang Mo Hong[2]. [1]hanyang university hospital, Republic of Korea, [2]Hanlim 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 Langsetmo[1], Allyson Kats[1], Peggy Cawthon[2], Katie Stone[2], John Schousboe[3], Susan Diem[4], Brent Taylor[5], Kristine Ensrud[5], Bauer Douglas[6], Eric Orwoll[7]. [1]University of Minnesota, United States, [2]San Francisco Coordinating Center, United States, [3]Park Nicollet, Health Partners, University of Minnesota, United States, [4]University of Minnesota, Minneapolis Veterans Administration Health Care System, United States, [5]University of Minnesota, Minneapolis VA Health Care System, United States, [6]University of California, San Francisco, United States, [7]Oregon 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. Vranken[1], C.E. Wyers[1], R.Y. Van der Velde[1], I.J.A. De Bruin [1], J.P.W. Van den Bergh[1], H.M.J. Janzing [2], S. Kaarsemakers[3], J.A. Eisman[4], J.R. Center [5], T.V. Nguyen[6], D. Bliuc[7], T. Tran [7], P.P.M.M. Geusens [8]. [1]Department 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, [2]Department of Surgery, VieCuri MC, Venlo, The Netherlands, Netherlands, [3]Department of Orthopedic Surgery, VieCuri MC, Venlo, The Netherlands, Netherlands, [4]Osteoporosis and Bone Biology, Garvan Institute of Medical Research, Sydney, Australia / School of Medicine Sydney, University of Notre Dame Australia, Sydney, Australia, Australia, [5]Osteoporosis and Bone Biology, Garvan Institute of Medical Research, Sydney, Australia / Clinical School, Faculty of Medicine, St Vincent's Hospital, UNSW, Sydney, Australia, Australia, [6]Osteoporosis 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, [7]Osteoporosis and Bone Biology, Garvan Institute of Medical Research, Sydney, Australia, Australia, [8]Department of Rheumatology, MUMC+, Maastricht, The Netherlands / CAPHRI 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-1ß but not dietary flavonoids are associated with healing after periodontal therapy to prevent tooth loss**

*Stephanie Klok[1], Jenalyn Yumol[1], Taylor Sparrow[1], Philip Sullivan[1], Wendy Ward[1], Peter Fritz[2]. [1]Brock University, Canada, [2]Periodontal 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 Lee[1], Young-Jin Son[1]. [1]Sunchon 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 Chakhtoura [2], Randa Saad [2], Rawaa El Sabbagh[2], Dalal Habli[2], Ramzi Alami[1]. [1]American University of Beirut - Lebanon, Lebanon, [2]American 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 Dickens[1], Tamara Vokes[1]. [1]University 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 Popp[1], Oliver Bock[1], Christoph Senn[1], Sandra Grifone[1], Kurt Lippuner[1]. [1]Department 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 Choi[1], Alexander Robling[1]. [1]Indiana 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 Sickle Mice**

*Mykel Green[1], Mitch Schaffler[1], Gilda Barabino[1]. [1]The 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 kim[1], Charit Taneja[1], Yaoting Ji[1], Anisa Gumerova[1], Vitaly Ryu[1], Sakshi Gera[1], Tan-Chun Kuo[1], Daria Lizneva[1], Li Sun[1], Tony Yuen[1], Mone Zaidi[1]. [1]Department 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 Oliveira[1], Sonoko Narisawa[1], Massimo Bottini[1], José Luis Millán[2]. [1]Sanford Burnham Prebys Medical Discovery Institute, United States, [2]Sanford 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 Ton[1], Xiaobing Yu[1], Jiadong Chen[1], Emilie Barruet[1], Syed Ali[1], Tea Chan[1], Katie Bigay[1], Jennifer Ho[1], Ina Nikolli[1], Arnold Kriegstein[1], Edward Hsiao[1], Blanca Morales[2], Hongju Liu[3], Kin Cheung[4]. [1]University of California, San Francisco, United States, [2]University of California, San Franicso, United States, [3]Peking Union Medical College Hospital, China, [4]BioSAS 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 **DDRGK1 is required for the proper chondrogenesis and the regulation of osteochondroprogenitors**

*Yangjin Bae[1], Monika Weisz-Hubshman[1], Adetutu Egunsola[1], Ming-Ming Jiang [1], Brendan Lee[1]. [1]Baylor College of Medicine, United States

Disclosures: Yangjin Bae, None

12:50 pm
FRI-175 **Pinch regulates chondrogenesis by control of TGF-β1 signaling and expression of Sox9 and Runx2 in chondrocytes**

*Yiming Lei[1], Huiling Cao[1], Pengyu Li[1], Xin Liu[1], Qinnan Yan[1], Simin Lin[1], Liting Ma[1], Yuxi Guo[1], Yumei Lai[2], Yiran Zhao[3], Wei Yang[3], Yishu Wang[3], Ruxuan Li[3], Guozhi Xiao[3]. [1]Guangdong 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, [2]Department of Orthopedic Surgery, Rush University Medical Center, United States, [3]Guangdong 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

12:55 pm
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 Ponte[1], Warren Aaron[1], Ha-neui Kim[1], Srividhya Iyer[1], Li Han[1], Maria Almeida[1], Manolagas Stavros[1]. [1]UAMS, United States

Disclosures: Filipa Ponte, None

1:00 pm
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 Smargiassi[1], Alexander Robling[1], Lynda Bonewald[1], Marco Brotto[2]. [1]IUPUI, United States, [2]University of Texas at Arlington, United States

Disclosures: Alberto Smargiassi, None

1:05 pm
FRI-181 **Runx1 Mediates Articular Cartilage Repair in Osteoarthritis through Upregulating Yap and Downregulating Wnt/β-catenin Signaling Pathway**

*Yan Zhang[1], Yun Lu[1], Tao Zuo[1], Guochun Zhu[1], Jinjin Wu[1], Wei Chen[1], Yi-Ping Li[1]. [1]Department of Pathology, University of Alabama at Birmingham, SHEL 810, 1825 University Blvd, Birmingham AL 35294-2182, USA, United States

Disclosures: Yan Zhang, None

Posters

1:10 pm
FRI-135

PREX1 drives spontaneous bone metastasis of ER+ breast cancer cells

*Miranda E. Clements[1], Rachelle W. Johnson[2]. [1]Vanderbilt University, United States, [2]Vanderbilt University Medical Center, United States

Disclosures: Miranda E. Clements, None

1:15 pm
FRI-136

TBK1/IKKε inhibitor Amlexanox blocks Multiple Myeloma cell growth in vitro and in vivo

*Quanhong Sun[1], Juraj Adamik[1], Peng Zhang[1], Konstantinos Lontos[1], Deborah L. Galson[1], Valentina Marchica[2], Nicola Giuliani[2], Rebecca Silbermann[3], G.David Roodman[4], Lea Nyiranshuti[5], Joseph Latoche[5], Carolyn J. Anderson[5], Konstantinos Verdelis[6]. [1]Department of Medicine, Hem-Onc Division, UPMC Hillman Cancer Center, University of Pittsburgh, United States, [2]Myeloma Unit, Department of Clinical and Experimental Medicine, University of Parma, Italy, Italy, [3]Department of Medicine, Hematology-Oncology Division, Indiana University, Indianapolis, IN, USA, United States, [4]Department of Medicine, Hem-Onc Division, Indiana University, Indianapolis, IN; 5Veterans Administration Medical Center, Indianapolis, IN, USA, United States, [5]Department of Medicine, Cardiology Division, University of Pittsburgh, United States, [6]Department 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 Langlais[1], Katherine J. Motyl[1], Roni F. Kunst [2], Karen Houseknecht[3]. [1]Maine Medical Center Research Institute, United States, [2]Maine Medical Center Research Institute , United States, [3]University 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 Lee[1], Serk In Park[1], Hyun Jin Sun[2], Kyung-Hun Lee[2], Tae Young Kim[2], Seock-Ah Im[2], Sun Wook Cho[2]. [1]Department of Biochemistry and Molecular Biology, Korea University College of Medicine, Republic of Korea, [2]Department 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 Nyman[1], Sasidhar Uppuganti[1], Nora Ward[2], Mark Does[2]. [1]Vanderbilt University Medical Center, United States, [2]Vanderbilt 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 Pin[1], Lynda Bonewald[1], Andrea Bonetto[2], Gordon Klein[3]. [1]Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, [2]Department of Surgery, Indiana University School of Medicine, United States, [3]Department 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 Rio[1], Lorena Brance[1], Silvana Di Gregorio[2], Silvia Martinez[3], Ludovic Humbert[4], Patricia Sanchez[5]. [1]Densitometria. CETIR. Grupo Ascires, Spain, [2]Densitometria Ósea. CETIR. Grupo Ascires, Spain, [3]Reumatología. Hospital Mutua de Terrassa, Spain, [4]Galgo Medical, Spain, [5]Centre tecnología 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 Huang[1], Carol Chiung-Hui Peng[2], Shu-Man Lin[3], Pin-Sung Liu[4], Ching-Hui Loh[4], Jin-Yi Hsu[5]. [1]Department of Family Medicine, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, [2]Department of Internal Medicine, University of Maryland Medical Center Midtown Campus, United States, [3]Department of Physical Medicine and Rehabilitation, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, [4]Center for Aging and Health, Buddhist Tzu Chi General Hospital, Taiwan, Province of China, [5]Department 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 Leahy[1], Barbara Garita[1], Po-Hung Wu[1], Gabrielle Joseph[1], Misung Han[1], Roland Krug[1], Thomas Link[1], Galateia Kazakia[1]. [1]UCSF, 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 Alalawi[1], Hajar Abu Alrob [1], Haniah Shaikh[2], Manoela Braga[2], Zubin Punthakee[2], Rafik El Werfalli [2], J.E.M. Young[2], Aliya Khan[2], Adam Millar [3], Muhammad Shrayyef[3], Susan Teschke [3], Heather Zariffeh [4], Iman M'Hiri[4], Tayyab Khan [5], Adam Waldbilling[6]. [1]McMaster University, Canada, [2]McMaster University , Canada, [3]University of Toronto , Canada, [4]Bone Research and Education Centre, Canada, [5]LCM , Canada, [6]CHEO, 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 Naciu[1], Gaia Tabacco[1], Daria Maggi[1], Luca D'Onofrio[1], Silvia Briganti[1], Nicola Napoli[1], Paolo Pozzilli[1], Silvia Manfrini[1], Andrea Palermo[1], Stefania Falcone[2], Andrea Fabbri[2], Assunta Santonati[3], Domenico Castellitto[4], Alessandro Casini[4], Roberto Cesareo[4], Diana Lelli[5], Claudio Pedone[5]. [1]Unit of Endocrinology, University Campus Bio-Medico, Italy, [2]Unit of Endocrinology and Metabolic Diseases, CTO A. Alesini Hospital, University Tor Vergata, Italy, [3]Department of Endocrinology, San Giovanni Addolorata Hospital, Italy, [4]Thyroid and Metabolic Bone Diseases Center, Santa Maria Goretti Hospital, Italy, [5]Unit 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 Shiraishi[1], Ko Chiba[1], Narihiro Okazaki[1], Kazuaki Yokota[1], Makoto Osaki[1]. [1]Department 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 Smith[2], Susan Bayliss[2], Marwan Shinawi[2], William McAlister[2], Ana Maria Arbelaez[2], Gary Gottesman[3], Valerie Wollberg[3], Michael Whyte[3], Jeffrey Sugarman[4]. [1]University of Arizona College of Medicine - Phoenix, United States, [2]Washington University School of Medicine in St. Louis, United States, [3]Shriners Hospitals for Children - St. Louis, United States, [4]University of California - San Francisco, United States

Disclosures: Pamela Smith, None

1:25 pm
FRI-421

PDGF-BB Secreted by Pre-Osteoclasts Drives Subchondral bone Angiogenesis in OA Joints
*Weiping Su[1], Xiannan Liu[1], Qi Sun[1], Xu Cao[1], Mei Wan[1]. [1]Department of Orthopaedic Surgery, United States
Disclosures: Weiping Su, None

1:30 pm
FRI-424

Deficiency of mesenchymal miR-204/miR-211 induces multifaceted pathologic changes of osteoarthritis
*Lan Zhao[1], Jian Huang[1], Yunshan Fan[1], Lifan Liao[1], Di Chen[1]. [1]Department 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. Carpentier[1], Marjorie Salga[1], Pierre Meunier[1], Louis Deversnay[1], François Genêt[1], Julie Paquereau[1]. [1]Department 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 Li[1], Jin-Woo Kim[1], Sun-Jong Kim[1]. [1]Ewha 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 Koga[1], Hajime Kato[1], Nobuaki Ito[1], Yuka Kinoshita[2], Seiji Fukumoto[3]. [1]Division of Nephrology and Endocrinology, The University of Tokyo Hospital, Japan, [2]Division of Nephrology and Endocrinology, The University of Tokyo Hospital, Japan, [3]Fujii 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 mikhail[1], john aloia[1], shahidul islam[1]. [1]nyu winthrop hospital, United States
Disclosures: mageda mikhail, None

SUN-13

Gestational hypercalcemia: Prevalence and biochemical profile
*Inez Schoenmakers[1], Shereen Baban[1], Isabelle Piec[1], Darrell Green[1], Christopher Washbourne[1], Jonathan Tang[1], William D. Fraser[1], Linnea Bärebring [2], Hanna Augustin[2]. [1]University of East Anglia, United Kingdom, [2]University of Gothenburg, Sweden
Disclosures: Inez Schoenmakers, None

SUN-14 **Effect of obesity on bone microstructure and strength following parathyroidectomy in primary hyperparathyroidism.**

*Donovan Tay[1], Natalie Cusano[2], Mishaela Rubin[3], John Williams[3], Sanchita Agarwal[3], Rukshana Majeed[3], Beatriz Omeragic[3], John Bilezikian[3], Gaia Tabacco[4]. [1]Department of Medicine, Sengkang General Hospital, Singapore, [2]Department of Medicine, Division of Endocrinology, Lenox Hill Hospital, United States, [3]Department of Medicine, Division of Endocrinology, College of Physicians & Surgeons, Columbia University, United States, [4]University Campus Bio-Medico, Italy

Disclosures: Donovan Tay, None

SUN-15 **Fourier Transform Infrared Spectroscopy in the Examination of Renal Osteodystrophy and Kidney Transplantation**

*Xiaoyu Tong[1]. [1]Kuopio 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 Ammann[1], Isabelle Badoud[2]. [1]Division of Done Diseases, department of Medicin, Switzerland, [2]Division of bone Diseases, Department of Medicin, 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**

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Disclosures: Melissa S.A.M. Bevers, None

SUN-42 **Bone Quality In Postmenopausal Women With Severe Osteoporosis**

*Federica Biamonte[1], Jessica Pepe[1], Luciano Colangelo[1], Piergianni Biondi[1], Maurizio Angelozzi[1], Salvatore Minisola[1], Cristiana Cipriani[1], Luciano Nieddu[2]. [1]Department of Internal Medicine and Medical Disciplines, Sapienza University of Rome, Italy, [2]Faculty 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**

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Disclosures: Sarah Warnock, None

SUN-44 **Short Duration of Type 1 Diabetes Does Not Alter Material Properties in Juvenile Mice**

*Amy Creecy[1], Jennifer Hatch[1], Joseph Wallace[1], John Damrath[2]. [1]IUPUI, United States, [2]Purdue University, United States

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SUN-45 **Superior Detection of Scaphoid Fractures with High Resolution peripheral Quantitative Computed Tomography Compared to Conventional CT**

*Anne M. Daniels[1], Sander Sassen[1], Joop P. van den Bergh[1], Caroline E. Wyers[2], Bert van Rietbergen[2], Sjoerd Kaarsemaker[2], Heinrich M.J. Janzing[2], Piet P.M.M. Geusens[3], Pascal F.W. Hannemann[4], Martijn Poeze[4]. [1]VieCuri MC, Netherlands, [2]VieCuri MC, Netherlands, [3]Maastricht University Medical Centre, Netherlands, [4]Maastricht 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.**

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Disclosures: Yuki Etani, None

SUN-47 **Tibial macro- and microstructure adaptations to prolonged arduous military training in women**

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Disclosures: Julie Greeves, None

SUN-48 **Exploration of functional co-variation within the human rib**

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SUN-49 **Acoustically stimulated electric polarization in osteoporotic bone**

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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-Gil[1], Neus Roca-Ayats[2], Daniel Grinberg[2], Susanna Balcells[2], Natàlia Garcia-Giralt[3], Wim Van Hul[4], Xavier Nogués[5], Leonardo Mellibovsky[5], Adolfo Díez-Pérez[5]. [1] Department 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, [2]Department 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, [3] Musculoskeletal Research Group, IMIM (Hospital del Mar Medical Research Institute), Centro de Investigación Biomédica en Red en Fragilidad y Envejecimiento Saludable (CIBERFES), ISCIII, Spain, [4] Center of Medical Genetics, University of Antwerp & Antwerp University Hospital, Prins Boudewijnlaan 43, Edegem, 2650, Belgium, [5]Musculoskeletal Research Group, IMIM (Hospital del Mar Medical Research Institute), Centro de Investigación Biomédica en Red en Fragilidad y Envejecimiento Saludable (CIBERFES), ISCIII, Spain

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SUN-51 **Sex-Specific Difference in Local Regions of Bone Microstructure Best Predict Strength in the Proximal Femur**

*Daniella Patton[1], Erin Bigelow[1], Robert Goulet[1], Sean Carroll[1], Stephen Schlecht[1], Karl Jepsen[1], Benjamin Provencher[2], Nicolas Piche[2], Mathieu Gendron[2], Mike Marsh[2], Todd Bredbenner[3]. [1]University of Michigan, United States, [2]Object Research Systems, Canada, [3]University 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**

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SUN-53 **A Col1a2 Mutation Reveals Bone Fragility, Hyperelasticity of Skin and Degeneration of Articular Cartilage in Mice**

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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**

*Yaohui Wang[1], Ani Ural[1]. [1]Villanova University, United States

Disclosures: Yaohui Wang, None

SUN-55 **Effect of tissue heterogeneity on micromechanics of the trabecular bone as examined by in vivo microCT-based DVC and FEA**

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Disclosures: Changhao Zhang, None

SUN-56 **Precision of Bone Strength Estimation using HR-pQCT-Based Homogenized Finite Element Analysis**

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Disclosures: Denis Schenk, None

BONE ACQUISITION AND PEDIATRIC BONE DISORDERS

SUN-77 **Heterozygous Mutation in WNT1 gene in Brothers with Early- Onset Osteoporosis**

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SUN-78 **Bone Density in Children and Young Adults with Type 2 Diabetes**

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SUN-79 **Adult height of patients with achondroplasia treated with growth hormone**

*Takuo Kubota[1], Hirofumi Nakayama[1], Kei Miyata[1], Yasuki Ishihara[1], Shinji Takeyari[1], Kenichi Yamamoto[1], Yukako Nakano[1], Makoto Fujiwara[1], Yasuhisa Ohata[1], Taichi Kitaoka[1], Keiichi Ozono[1]. [1]Department of Pediatrics, Osaka University Graduate School of Medicine, Japan

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SUN-80 **Determining Bone Parameter Percentile Curves for Japanese Adolescents**
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Disclosures: Saki Yamanaka, None

BONE INTERACTIONS WITH MUSCLE AND OTHER TISSUES

SUN-98 **Correction of muscle dysfunction by osteocalcin in sarcopenia**
*Julian Meyer Berger[1], Logan Schulz[1], Gerard Karsenty[1]. [1]Columbia University Medical Center, United States
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SUN-99 **RANKL is a novel regulator of male fertility**
*Martin Blomberg Jensen[1], Anne Jørgensen[1], Christine Hjort Andreassen[1], ida Boisen[1], Peter Schwarz[1], Anders Juul[1], Roland Baron[2], beate Lanske[2]. [1]Rigshospitalet, Denmark, [2]Harvard University, United States
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SUN-100 **Osteocytic peri-lacunar remodeling and angiogenesis in lactating mice treated with osteoprotegerin (OPG)**
*Lisa Cruz-Aviles[1], Pamela Dann[1], Jackie Fretz[1], Steven Tommasini[1], John Wysolmerski[1]. [1]Yale School of Medicine, United States
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SUN-101 **Lack of osteocytic-miR21 promotes skeletal muscle mass growth in a sex-specific manner**
*Alyson Essex[1], Hannah Davis[2], Padmini Desolthate [2], Andrea Bonetto[3], Lilian Plotkin[4]. [1]Indiana University School of Medicine Department of Anatomy and Cell Biology, Indiana Center for Musculoskeletal Health, United States, [2]Indiana University School of Medicine Department of Anatomy and Cell Biology, United States, [3]Indiana University School of Medicine Department of Surgery, Indiana Center for Musculoskeletal Health, United States, [4]Indiana University School of Medicine Department of Anatomy and Cell Biology, Indiana Center for Musculoskeletal Health, Roudebush Veterans Administration Medical Center, United States
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SUN-102 **Prx1Cre is expressed early in brain development and in adult brain.**
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SUN-103 **Total bioactive VEGF-A ELISA – a high sensitivity immunoassay**
*Andreea Ana-Maria Suciu[1], Elisabeth Gadermaier[1], Jacqueline Wallwitz[1], Gottfried Himmler[1], Gabriela Berg[2], Annegret Bitzer[2]. [1]The Antibody Lab GmbH, Austria, [2]Biomedica Medizinprodukte GmbH, Austria
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SUN-104 **Zoledronic acid improves muscle function in mice treated with chemotherapy**
*Brian Hain[1], Baptiste Jude[1], Haifang Xu[1], Dallas Smuin[1], Edward Fox[1], John Elfar[1], David Waning[1]. [1]Penn State College of Medicine, United States
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SUN-105 **The role of Fam20C on the tooth dentin formation**
*Katsutoshi Hirose[1], Yu Usami[1], Kohei Naniwa[1], Kaori Oya[1], Satoru Toyosawa[1], Toshihisa Komori[2]. [1]Osaka University Graduate School of Dentistry, Japan, [2]Nagasaki 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 Jones[1], David Gelston[1], Jennifer Vazquez[1], Olivia Sorci[1], Chamith Rajapakse[1]. [1]University of Pennsylvania, United States

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SUN-107 **Opioids Paradoxically Exacerbate Fracture Pain Despite Evidence of Bone Union**

*Melissa Kacena[1], Zachary Gunderson[1], Aamir Tucker[1], Natalie Taylor-Nguyen[1], Peter Malicky[1], Rachel Blosser[1], Fletcher White[1]. [1]Indiana 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 Moraes[1], Carlos Matheus Lescura[1], Jaqueline Ribeiro[1], Luma Collino[1], Giovanna Lotto[1], Ana Lia Anbinder[1]. [1]São 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**

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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 Wicik[1], Levi H Jales Neto[1], Liliam Takayama[1], Valeria F Caparbo[1], Georgea H Fernandes[1], Rosa MR Pereira[1], Neuza Lopes[2], Luis FE Guzman[2], Alexandre C Pereira[2]. [1]Rheumatology Division, Hospital das Clinicas HCFMUSP, Universidade de Sao Paulo, Brazil, [2]Heart 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**

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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 Gamez[1], Emma V Morris[1], Christina J Turner[1], Sam WZ Olechnowicz[2], Aneka Sowman[2], Claire M Edwards[3]. [1]Nuffield Department of Surgical Sciences. University of Oxford, United Kingdom, [2]Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences. University of Oxford, United Kingdom, [3]Nuffield 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 Merling[1], Pamela Robey[1], Sergei Kuznetsov[2], Joseph Featherall[2], Natasha Cherman[2]. [1]Skeletal 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**

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Disclosures: Laura Zweifler, None

BONE TUMORS AND METASTASIS

SUN-148 **Integrin β6 upregulation by the Prostate Tumor-secreted Protein Mindin is Associated with Increased Adhesion of Cancer Cells to the Bone Microenvironment**

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Disclosures: Luis Alvarez Carrion, None

SUN-149 **Cholesterol promotes myeloma cell viability and increases bone marrow myeloma tumour burden in vivo**

*Gamez Beatriz[1], Seint T Lwin[1], Emma V Morris[2], Christina J Turner[2], Sam WZ Olechnowicz[3], Sowman Aneka[3], Matthew T Drake[4], Claire M Edwards[5]. [1]Nuffield Department of Surgical Sciences. University of Oxford, United Kingdom, [2]Nuffield Department of Surgical Sciences. University of Oxford., United Kingdom, [3]Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences. University of Oxford., United Kingdom, [4]Division of Endocrinology, Department of Medicine, Mayo Clinic College of Medicine, United States, [5]Nuffield 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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Disclosures: Yi-Ting Chen, None

SUN-151 **Artificial Intelligence (AI) Can Detect Bone Marrow Lesions (BMLs) on Plain Radiographs**

*Hans P. Dimai[1], Tiago Paixao[2], Zsolt Bertalan[2], Richard Ljuhar[2], Christoph Goetz[2], Davul Ljuhar[3], Stefan Nehrer[4], Astrid Fahrleitner-Pammer[5]. [1]Medical UNiversity of Graz, Division of Endocrinology & Diabetology, Austria, [2]Image Biopsy Lab, Austria, [3]Braincon, Austria, [4]Donau Universität Krems, Center for Regenerative Medicine, Austria, [5]Medical University of Graz, Division of Endocrinology & Diabetology, Austria

Disclosures: Hans P. Dimai, None

SUN-152 **Characterization of TIE2 Function in Cancer Cell Dormancy and Bone Metastases**

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SUN-153 **Understanding the action of RARγ agonists on human osteochondroma explants.**

*Sonia Garcia[1], Hongying Tian[2], Akiko Suzuki[2], Vincent Ng[2], Masahiro Iwamoto[2], Motomi Enomoto-Iwamoto[2], Ashley Cellini[3], John E. Herzenberg[4]. [1]Molecular Medicine Graduate Program and Department of Orthopaedics, School of Medicine, University of Maryland, Baltimore, United States, [2]Department of Orthopaedics, School of Medicine, University of Maryland, Baltimore, United States, [3]Pathology Biorepository Shared Service Core, School of Medicine, University of Maryland, Baltimore, United States, [4]Department of Orthopaedics, University of Maryland, Baltimore and Pediatric Orthopaedics, Sinai Hospital, United States

Disclosures: Sonia Garcia, None

SUN-154 **Prostate cancer bone metastasis model for preclinical evaluation of radiopharmaceuticals**

*Tiina E Kähkönen[1], Mari I Suominen[1], Jenni HE Mäki-Jouppila[1], Jussi M Halleen[1], Jenni Bernoulli[1]. [1]Pharmatest Services, Finland

Disclosures: Tiina E Kähkönen, None

SUN-155 **Factors Released from Highly Bone-metastatic Cancer Cells Play a Critical Role in Osteolysis**

*Haemin Kim[1], Hyung Joon Kim[2], Bongjun Kim[3], Zang Hee Lee[3], Hong-Hee Kim[3], Sang Il Kim[4], Junho Chung[4], Dong-Young Noh[4]. [1]Weill Cornell Medicine/Hospital for Special Surgery, United States, [2]Pusan National University School of Dentistry, Republic of Korea, [3]Seoul National University School of Dentistry, Republic of Korea, [4]Seoul National University College of Medicine, Republic of Korea

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SUN-156 **Runx2 Mediated Microtubule Stabilization Promotes Autophagy in Bone Metastatic Breast Cancer Cells**

*Ahmad Othman[1], Marcus Winogradzki[1], Di Chen[1], Jitesh Pratap[1], Manish Tandon[2]. [1]Rush University Medical Center, United States, [2]KBI 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 Sarmin[1], Tomoko Minamizaki[1], Yuji Yoshiko[1], Mentari Zaurasari[2]. [1]Department of Calcified Tissue Biology, Graduate School of Biomedical & Health Sciences, Hiroshima University, Japan, [2]Faculty of Dentistry, Hiroshima University, Japan

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SUN-158 **Determining the impact of mechanical loading on the arrival of prostate cancer in bone**

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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 Whitburn[1], Srinivasa Rao[1], Freddie Hamdy[1], Claire Edwards[1], Sho Tabata[2], Akiyoshi Hirayama[2], Tomoyoshi Soga[2]. [1]University of Oxford, United Kingdom, [2]Keio University, Japan

Disclosures: Jessica Whitburn, None

SUN-160 **Tetrahedron DNA nanostructure, a novel drug vehicle for tumor therapy.**

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Disclosures: Xueping Xie, None

CHONDROCYTES

SUN-183 **Inflammation-Induced Metabolic Reprogramming in Chondrocytes is a Therapeutic Target in Joint Disease**

*Manoj Arra[1], Gaurav Swarnkar[1], Regis O'Keefe[1], Jie Shen[1], Yousef Abu-Amer[1]. [1]Washington University School of Medicine, United States

Disclosures: Manoj Arra, None

SUN-184 **Hyperactivation of IL36α signaling induces OA-like phenotype, pain and upregulated pain-associated gene expression in DRG**

*Fang Fang[1], Tieshi Li[1], Alessandra Esposito[1], Marissa Cruz[1], Anna Spagnoli[1], Xin Jin[2]. [1]University of Nebraska Medical Center, United States, [2]Department of Orthopaedics, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, China

Disclosures: Fang Fang, None

SUN-185 **Inhibition of Osteoarthritis Progression by Blocking Connexin Channels**
*Rui Hua[1], Yi Tian[1], Manuel Riquelme[1], Liang Ma[1], Sumin Gu[1], Jean X. Jiang[1]. [1]Department 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 kang[1], zhuang qian[1], xinxin jin[1], shufang wu[1], hongzhi sun[2]. [1]1.Center for Translational Medicine, the First Affiliated Hospital of Xi'an Jiaotong University School of Medicine, China, [2]2.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 Kesavan[1], Subburaman Mohan[1]. [1]JLP 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 Liu[1], Masako Naito[2], Natsuko Tanabe[3], Naoto Suzuki[4]. [1]Shandong Provincial Key Laboratory of Oral Tissue Regeneration, Department of Prosthodontics, School of Stomatology,Shandong University, China, [2]Department of Anatomy, Nihon University School of Dentistry, Japan, [3]Division of Functional Morphology, Dental Research Center, Department of Biochemistry, Nihon University School of Dentistry, Japan, [4]Division of Functional Morphology, Dental Research Center,Department of Biochemistry, Nihon University School of Dentistry, Japan
Disclosures: Di Liu, None

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 Rowe[1], Xiaonan Xin[1], Li Chen[1]. [1]University 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 Yin[1], Songsong Zhu[1], Ruiye Bi[1]. [1]West China Hospital of Stomatology, Sichuan University, China
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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**
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Disclosures: cheng cheng, None

SUN-210 **Successful Bisphosphonate Therapy for Vertebral Avascular Necrosis in an Adolescent with Sickle Cell Disease**
*Chelsey Grimbly[1], Rose Girgis[1], Aisha Bruce[2], Jacob L Jaremko[3]. [1]Division of Pediatric Endocrinology, Department of Pediatrics, University of Alberta, Canada, [2]Ihope Division, section Pediatric Hematology, Department of Pediatrics, University of Alberta, Canada, [3]Department of Radiology, University of Alberta, Canada
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SUN-211 **The first case of genetically confirmed adult hypophosphatasia in Korean population**
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SUN-212 **Variability of Bone Disease in HIV Patients: A Case Series**
*Amita Maibam[1], Madhumathi Rao[1], Florence Lima[1], Marie Monier Faugere[1], Alice Thornton[1], Hartmut Malluche [1]. [1]University of Kentucky, United States
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SUN-213 **Use of Zoledronic Acid for management of Sclerosing Osteomyelitis of the Mandible**
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SUN-214 **Diagnosis of Genetic Odontohypophosphatasia in an Adult**
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SUN-215 **Clinical Case of low calcium intake combined with pregnancy and lactation leads to low bone mineral density and fracture.**
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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 Upala[1], Sonaina Imtiaz[1], Tamara Vokes[1]. [1]University 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 Weber[1], Inna Hughes[1], Apeksha Chaturvedi[1], Leeann Habben[1], Natasha O'Malley[1], Homaira Rahimi[1], Geoffrey A Weinberg[1]. [1]Golisano Children's Hospital, University of Rochester, United States
Disclosures: David R Weber, None

SUN-218 **Severe Hypercalcemia as Manifestation of Large Granular Lymphocytic Leukemia**
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ENERGY METABOLISM, BONE, MUSCLE AND FAT

SUN-225 **O-glycosylation a Novel Post-Translational Modification of Osteocalcin Increases its Half-life In Vivo**
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SUN-226 **Sympathetic inhibition prevents but high fat, high protein diet causes bone loss during cold exposure in young C57BL/6J mice**
*Amy Robbins[1], Christina Tom[1], Rebecca Tutino[1], Miranda Cosman[1], Taylor Spencer[1], Cleo Moursi[1], Rachel Hurwitz[1], Maureen Devlin[2]. [1]University of Michigan, United States, [2]UNIVERSITY 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 Lacombe[1], Omar Al Rifai[1], Rémi Rabasa-Lhoret[1], Mathieu Ferron[1], Anne-Frédérique Turcotte[2], Claudia Gagnon[2], André Carpentier[3], Gerard Karsenty[4]. [1]IRCM, Canada, [2]Université Laval, Canada, [3]Université de Sherbrooke, Canada, [4]Columbia University Medical Center, United States
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SUN-228 **KLF10 is a novel regulator of TCA cycle metabolism and mediates skeletal muscle cell differentiation and function.**

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SUN-229 **Longitudinal Study of Obesity Effect on Bone and Marrow Adipose Tissue (MAT) in Skeletally-Mature Mice**

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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 Adams[1], Cheryl Ackert-Bicknell[1], Olivia Hart[2], Apurva Chitre[3], Oksana Polesskaya[3], Abraham Palmer[3]. [1]University of Colorado, United States, [2]University of Connecticut, United States, [3]University of California - San Diego, United States

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SUN-244 **Identifying pleotropic SNPs associated with femoral neck BMD and heel BMD estimated by quantitative ultrasound**

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SUN-245 **Metabolites Associated with Bone Mineral Density in Chinese Women during Menopause Transition and Beyond**

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SUN-246 **A Biorepository for Genomic Inquiry within the Shriners Hospitals for Children**

*Gary S Gottesman[1], Anxhela G Gustafson[1], Vinieth N Bijanki[1], Shannon Terkoski[1], Tristin Morse[1], Fan Zhang[1], Marc Lalande[1], Kamran Shazand[1]. [1]Shriners Hospitals for Children, United States

Disclosures: Gary S Gottesman, None

SUN-247 **Genetic Risk Scores to Improve Osteoporosis Screening: Validation in External Cohorts**

*Vincenzo Forgetta[1], Marie Forest[1], Sahir Bhatnagar[1], John A Morris[1], Celia MT Greenwood[1], Brent Richards[1], Julyan Keller-Baruch[2], Audrey Durand[3], Joelle Pineau[3], Maria Nethander[4], John Kemp[5], Douglas P Kiel[6], Eugene V McCloskey[7], Dan Mellström[8], Magnus Karlsson[9], Fernando Rivadeneira[10], Helena Johansson[11], Nicholas Harvey[12], David M Evans[13], Dan Evans[14], Eric Orwoll[15], John A Kanis[16], Claes Claes Ohlsson[17], William D Leslie[18]. [1]Centre for Clinical Epidemiology, Lady Davis Institute, Jewish General Hospital, McGill University, Canada, [2]Department of Human Genetics, McGill University, Canada, [3]School of Computer Science, McGill University, Canada, [4]Centre for Bone and Arthritis Research, Sahlgrenska Academy, University of Gothenburg; Bioinformatics Core Facility, Sahlgrenska Academy, University of Gothenburg, Sweden, [5]MRC Integrative Epidemiology Unit, University of Bristol; Centre for Metabolic Bone Diseases, University of Sheffield, United Kingdom, [6]Marcus Institute for Aging Research, Hebrew SeniorLife, Department of Medicine, Beth Israel Deaconess Medical Center and Harvard Medical School, Broad Institute of MIT & Harvard University, United States, [7]Mellanby Centre for Bone Research, Centre for Integrated Research in Musculoskeletal Ageing, University of Sheffield, and Sheffield Teaching Hospitals Foundation Trust, United Kingdom, [8]Centre for Bone and Arthritis Research, Department of Internal Medicine and Clinical Nutrition, Institute for Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, Sweden, [9]Department of Orthopaedics and Clinical Sciences, Lund University, Skåne University Hospital, Malmö, Sweden, Sweden, [10]Department of Internal Medicine, Erasmus Medical Center, Rotterdam, Netherlands, Netherlands, [11]Centre for Metabolic Bone Diseases, University of Sheffield, Sheffield, UK, and Australian Catholic University, United Kingdom, [12]Medical Research Council Lifecourse Epidemiology Unit, University of Southampton; National Institute for Health Research Southampton Biomedical Research Centre, University of Southampton and University Hospital Southampton NHS Foundation Trust, United Kingdom, [13]MRC Integrative Epidemiology Unit, University of Bristol; Centre for Metabolic Bone Diseases, University of Sheffield and Australian Catholic University, United Kingdom, [14]California Pacific Medical Center Research Institute, United States, [15]Bone and Mineral Unit, Oregon Health & Science University; Department of Medicine, Oregon Health & Science University, United States, [16]Centre for Metabolic Bone Diseases, University of Sheffield and Australian Catholic University, United Kingdom, [17]Department of Internal Medicine and Clinical Nutrition, University of Gothenburg, Sweden, [18]Department of Medicine, University of Manitoba, Canada

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SUN-248 **New insights into the multiorgan alterations caused in mice by the ADO2 CLCN7G213R mutation: an unbiased transcriptome approach**

*Antonio Maurizi[1], Denis Szondi[1], Annabel Curle[1], Nadia Rucci[1], Mattia Capulli[1], Anna Teti[1]. [1]University of L'Aquila, Italy

Disclosures: Antonio Maurizi, None

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**

*Aya Bassatne[1], Asma Arabi[1], Maya Rahme[1], Ghada El-Hajj Fuleihan[1], Abbas Jaafari[2], Moustapha Kassem [2], Christos Mantzoros[3], Georges Halaby[4], Rafic Baddoura[4]. [1]Calcium Metabolism and Osteoporosis Program, American University of Beirut, Lebanon, [2]South Odense University, Denmark, [3]Beth Israel Deaconess Medical Center, United States, [4]St Joseph University, Lebanon

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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**

*Rebecca Dirkes[1], Nathan Winn[2], Thomas Jurrissen[3], Dennis Lubahn[3], Victoria Vieira-Potter[3], Jaume Padilla[3], Pamela Hinton[3]. [1]University of Missouri, United States, [2]Vanderbilt University, United States, [3]University of Missouri, United States

Disclosures: Rebecca Dirkes, None

SUN-269 **The effects of estradiol are modulated in a tissue-specific manner in mice with inducible inactivation of ERα after sexual maturation**

*Helen Farman[1], Lina Lawenius[1], Jianyao Wu[1], Karin Gustafsson[1], Karin Nilsson[1], Cecilia Engdahl[1], Louise Grahnemo[1], Sofia Movérare-Skrtic[1], Marie Lagerquist[1], Claes Ohlsson[1], Jan-Åke Gustafsson[2]. [1]Centre for Bone and Arthritis Research at Institute of Medicine, Sahlgrenska Academy at University of Gothenburg, SE-41345 Gothenburg, Sweden, Sweden, [2] Center for Medical Innovations, Department of Biosciences and Nutrition at NOVUM, Karolinska Institute, Stockhom, Sweden, Sweden

Disclosures: Helen Farman, None

SUN-270 **Antimicrobial CAMP/LL-37 is Upregulated by Vitamin D Metabolites in Human Mesenchymal Stromal/Stem Cells**

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Disclosures: Julie Glowacki, None

SUN-271 **A Pilot Study of α-KLOTHO Serum Concentrations in CKD Patients using a Highly Sensitive Fluorescence Immunoassay based on Plasmonic Microtiter Plates**

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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**

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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.**

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Disclosures: Fahima Munmun, None

SUN-274 **The Polycomb Protein Bmi1 Plays a Crucial Role in the Prevention of 1,25(OH)2D Deficiency-induced Osteoporosis**

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Disclosures: Haijian Sun, None

SUN-275 **SOMATOPAUSE-DRIVEN SENILE OSTEOPOROSIS**

*Zhongbo Liu[1], Gozde Yildirim[1], Shoshana Yakar[1], Mitchell B Schaffler[2], Silvana Duran Ortiz[3], John J Kopchick[3]. [1]David B. Kriser Dental Center, Department of Basic Science and Craniofacial Biology New York University College of Dentistry New York, NY 10010-4086, United States, [2]Department of Biomedical Engineering, City College of New York, New York 10031, United States, [3]Edison Biotechnology Institute, and Dept. of Biomedical Sciences, Ohio University, Athens, OH, United States

Disclosures: Zhongbo Liu, None

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 Colaianni[1], Silvia Concetta Colucci[1], Giacomina Brunetti[1], Maria Grano[1], Giorgio Mori[2]. [1]University of Bari, Italy, [2]University of Foggia, Italy

Disclosures: Graziana Colaianni, None

SUN-295 **Hypergravity and microgravity oppositely controlled the bone and muscle mass in mice**

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Disclosures: Ryota Ichimaru, None

SUN-296 **Osteocyte Wnt/β-catenin pathway activation upon Mechanical loading is Altered in OVX Mice**

*Erica Jackson[1], Nuria Lara-Castillo[1], Yixia Xie[1], Mark Johnson[1], Mark Dallas[2], Mohammed Akhter[3]. [1]UMKC School of Dentistry, United States, [2]UMKC, United States, [3]Creighton University, United States

Disclosures: Erica Jackson, None

SUN-297 **Pulsating Fluid Flow Modulates Bone Cell and Nucleus Morphology - Implications for Bone Cell Function?**

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Disclosures: Jianfeng Jin, None

SUN-298 **Piezo1 Channel Activation in Osteoblastic Cells under Low-intensity Pulsed Ultrasound Stimulation**

*Guangdao Zhang[1], Xiaofei Li[1], Lin Wu[1], Yi-Xian Qin[1]. [1]Stony 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 Yang[1], Mi-La Cho[2], Jin-Sil Park[2]. [1]The Catholic university of Korea, Republic of Korea, [2]The Catholic University of Korea, Republic of Korea

Disclosures: SeungCheon Yang, None

SUN-300 **Promoting bone formation in Marfan Syndrome through in vivo mechanical loading and sclerostin neutralizing antibody treatment**

*Elizabeth A. Zimmermann[1], David Bertrand[1], Kerstin Tiedemann[1], Catherine Julien[1], Kyle Kavaseri[1], Svetlana V. Komarova[1], Bettina M. Willie[1], Dieter P. Reinhardt[2]. [1]McGill University & Shriners Hospitals for Children, Canada, [2]McGill University, Canada

Disclosures: Elizabeth A. Zimmermann, Mereo BioPharma, Grant/Research Support

MINERAL METABOLISM

SUN-319 **Effect of vitamin D supplementation on bone resorption in patients with type 2 diabetes**

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Disclosures: Edith Angellotti, None

SUN-320 **Calcium sensing receptor in male germ cells is essential for processes leading to fertilization**

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Disclosures: Ida Marie Boisen, None

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**

*Shiori Fukuda-Tatano[1], Hironori Yamamoto[2], Otoki Nakahashi[3], Ryouhei Yoshikawa[4], Mayu Hayashi[4], Maki Kishimoto[4], Hisami Yamanaka-Okumura[4], Kohta Ohnishi[4], Masashi Masuda[4], Yutaka Taketani[4], Yukiko Imi[5]. [1]The University of Shimane, Japan, [2]Department of Health and Nutrition, Faculty of Human Life, Jin-ai University, Japan, [3]Division of Functional Food Chemistry, Institute for Health Science, Tokushima Bunri University, Japan, [4]Department of Clinical Nutrition and Food Management, Institute of Biomedical Sciences, University of Tokushima Graduate School, Japan, [5]Department of Clinical Nutrition and Dietetics, Konan Women's University, Japan

Disclosures: Shiori Fukuda-Tatano, None

SUN-323 **Lycopene Protects Against Glucocorticoid-Induced Osteoporosis In Mice: Impact On Oxidative Stress And Osteocyte Senescence**

*Qinghe Geng[1], Jin Wang[1], Huabei Sun[1], Juan Zhai[1], Kaijin Guo[2], Shen Wang[3], Ke Heng[4], Dengshun Miao[5]. [1]Lab of bone and mineral research, Pizhou Hospital, Xuzhou Medical University, China, [2]Department of orthopeadic, The Affiliated hospital of Xuzhou Medical University, China, [3]Department of Acupuncture, Guangxi Medical University, China, [4]Department of Orthopedics, Changzhou No. 2 Hospital, Nanjing Medical University, China, [5]State Key Laboratory of Reproductive Medicine, The Research Center for Bone andStem Cells, Department of Anatomy, Histology and Embryology, Nanjing MedicalUniversity, China

Disclosures: Qinghe Geng, None

SUN-324 **Etelcalcetide decreases PTH-calcium set point without changing maximum and minimum PTH secretion in vivo in mice model of primary hyperparathyroidism**

*Yasuo Imanishi[1], Noriyuki Hayashi[1], Chie Hirakawa[1], Daichi Miyaoka[1], Masanori Emoto[1], Masaaki Inaba[1], Atsuto Inoue[2], Kazutsune Harada[2], Katsuhito Mori[3]. [1]Osaka City University Graduate School of Medicine, Department of Metabolism, Endocrinology and Molecular Medicine, Japan, [2]ONO Pharmaceutical Co., Ltd., Japan, [3]Osaka City University Graduate School of Medicine, Department of Nephrology, Japan

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 Kanai[1], Itsuro Endo[1], Yuichi Takashi[2], Jumpei Teramachi[3], Hirofumi Tenshin[4], Masahiro Hiasa[4], Seiji Fukumoto[5], Masahiro Abe[6], Toshio Matsumoto[7]. [1]Department of Chronomedicine, Tokushima University Graduate School of Health Sciences, Japan, [2]Department of Endocrinology and Diabetes Mellitus, Fukuoka University Chikushi Hospital, Japan, [3]Department of Tissue Regeneration, Tokushima University, Japan, [4]Department of Orthodontics and Dentofacial Orthopedic, Tokushima University, Japan, [5]Fujii Memorial Institute of Medical Sciences, Tokushima University, Japan, [6]2.Department of Hematology, Endocrinology and Metabolism, Tokushima University, Japan, [7]Fujii Memorial Institute of Medical Sciences, Tokushima University, Japan

Disclosures: Mai Kanai, None

SUN-326 **TXNIP participates in GIO bone loss through mitochondrial oxidative phosphorylation pathway**

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Disclosures: Liao Cui, None

SUN-327 **Regulation of cyclophilin D and mitochondrial permeability transition pore during osteogenic differentiation**

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Disclosures: Rubens Sautchuk, Jr, None

MUSCULOSKELETAL AGING

SUN-342 **PAI-1 accelerates sarcopenia and ageing-related osteoporosis.**

*Aidehamu Aihemaiti[1], Naoki Yamamoto[1], Alkebaier Aobulikasimu[1], Hiroki Ochi[1], Shingo Sato[1], Atsushi Okawa[1], Yoshinori Asou[1], Takuya Oyaizu[2], Kunikazu Tsuji[3], Toshio Miyata[4]. [1]Department of Orthopedics Surgery, Tokyo Medical and Dental University, Japan, [2]Department of Orthopedics Surgery, Tokyo Medical and Dental University, Japan, [3]Department of Cartilage Regeneration, Tokyo Medical and Dental University, Japan, [4]Department of Molecular Medicine and Therapy, United Centers for Advanced Research and Translational Medicine, Tohoku University Graduate School of Medicine, Japan

Disclosures: Aidehamu Aihemaiti, None

SUN-343 **Monomethylfumarate Protects against Ovariectomy-related Changes in Body Composition**

*Bollag Anna[1], Tianyang Guo[1], Kehong Ding[1], Vivek Choudhary[1], Xunsheng Chen[1], Qing Zhong[1], JIanrui Xu[1], Kanglun Yu[1], Mohamed Awad[1], Mohammed Elsalanty[1], Maribeth Johnson[1], Meghan McGee-Lawrence[1], Carlos Isales[1], Wendy Bollag[2]. [1]Augusta University, United States, [2]Augusta University; Charlie Norwood VA Hospital, United States

Disclosures: Bollag Anna, None

SUN-344 **A timed up and go test predicts fracture risk in older women independently of clinical risk factors and bone mineral density**

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Disclosures: Berit A. M. Larsson, None

Posters

SUN-345 **Is low impact physical activity associated with lower limb bone and muscle outcomes? Results from the Hertfordshire Cohort Study**

*Camille Parsons[1], Elaine Dennison[1], Cyrus Cooper[1], Kate Ward[1], Jon Tobias[2]. [1]MRC Lifecourse Epidemiology Unit, University of Southampton, United Kingdom, [2]University of Bristol, United Kingdom

Disclosures: Camille Parsons, None

SUN-346 **Postnatal Runx2 deletion causes age-related changes in bone.**

*Ikue Tosa[1], Daisuke Yamada[1], Shunpei Tsukamoto[1], Kenji Kawabe[1], Takeshi Takarada[1], Mitsuaki Ono[2], Toshitaka Oohashi[2], Takuo Kuboki[3]. [1]Department of Regenerative Science, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan, [2]Department of Molecular Biology and Biochemistry, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan, [3]Department of Oral Rehabilitation and Regenerative Medicine, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan

Disclosures: Ikue Tosa, None

MUSCULOSKELETAL DEVELOPMENT

SUN-363 **Gene by environment interactions govern the existence and magnitude of bone response to inhaled air pollution**

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SUN-364 **BMD development after the attainment of peak bone mass: A longitudinal study**

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SUN-365 **Deletion of Phlpp1 in Chondrocytes Enhances Proliferation by Increasing Expression of the PTH Receptor**

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SUN-366 **Discoidin domain receptor 1 regulates endochondral ossification through terminal differentiation and apoptosis of chondrocytes**

*Chung-Hwan Chen[1], Liang-Yin Chou[1], Yi-Shung Lin[1], Sung-Yen Lin [1], Yin-Chi Fu[1], Je-Ken Chang[1], Mei-Ling Ho[1], Chau-Zen Wang[1]. [1]Kaohsiung 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**

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SUN-368 **Genome-wide Association Study Identifies One Novel Locus Associated With Thickness And Mineralization Of Pediatric Metacarpal Bones**

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SUN-369 **Harnessing the Osteo-inductive Property of JAGGED1 as a Maxillary Bone Regenerative Intervention**

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SUN-370 **Analysis of Linear Regression between Morphometric Parameters of Growth Plate and Long Bone Growth in Mice and Human**

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SUN-371 **Local Intraoperative Steroid Administration Does Not Impact Spinal Fusion Outcomes in Rats**

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SUN-372 **Osteoblast-specific reduction in DYRK1A copy number alters bone growth in a Down syndrome mouse model**

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SUN-373 **Characterizing the Effects of Methylphenidate Dosage and Dosing Regimen on Bone Integrity**

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SUN-374 **Regional difference in microRNA regulation in the skull vault**

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MUSCULOSKELETAL PROGENITOR CELLS AND LINEAGE DETERMINATION

SUN-397 **Low PLS3 Expression Impairs Osteoblast Differentiation of Pediatric MSCs in vitro**

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SUN-398 **Smurf1 negatively regulates odontoblast differentiation**

*Arang Kwon[1], Hyun-Jung Park[1], Yun-Sil Lee[1], Kyung Mi Woo[1], Hyun-Mo Ryoo[1], Jeong-Hwa Baek[1], Eunkyung Chung[2]. [1]Seoul National University School of Dentistry, Republic of Korea, [2]SMDsolution Co., Ltd. Research Center, Republic of Korea

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SUN-399 **The Transcription Factor EBF1 is required for GR-Mediated Adipogenesis from Bone Marrow Progenitors**

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SUN-400 **Scara5 prevents osteoblast differentiation in favor of adipocytes.**

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SUN-401 **Evidence for Lgr6 as a Novel Marker of Osteoblastic Progenitors in Mice**

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SUN-402 **Preserved Capacity for In Vivo Bone Formation By Mesenchymal Stem Cells From Osteoporotic Patients**

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SUN-403 **Adult periosteum preserves a skeletal stem cell subset that requires distinct CCL5-dependent migration for bone regeneration and repair**

*Laura Ortinau[1], Hamilton Wang[1], Ingo Grafe[1], Scott Rosenfeld[1], Kevin Lei[2], Yannis Hara[2], Lorenzo Deveza[3], Brendan Lee[3], Dongsu Park[3], David Scadden[4], Dongjun Lee[5]. [1]Baylor College of Medicine, United States, [2]Baylor college of medicine, United States, [3]Baylor college of Medicine, United States, [4]Harvard Stem Cell Institute (HSCI), United States, [5]Harvard University, United States

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SUN-404 **Defining Hox11 Function in MSCs During Adult Skeletal Homeostasis and Injury Repair**

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SUN-405 **Is LBX1 Playing a Role in the Differentiated Paraspinal Muscle Phenotypes and Muscle-bone Interaction in Adolescent Idiopathic Scoliosis (AIS)**

*Yujia Wang[1], Ka-Lo Cheng[1], Jiajun Zhang[1], Tsz-ping Lam[1], Alec LH Hung[1], Jack CY Cheng[1], Wayne YW Lee[1], Zhenhua Feng[2], Leilei Xu[2], Yong Qiu[2]. [1]Department of Orthopaedics and Traumatology, SH Ho Scoliosis Research Laboratory, The Chinese University of Hong Kong, Hong Kong, [2]Spine Surgery, Nanjing Drum Tower Hospital, Nanjing University, China

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SUN-406 **Physiological occlusal force regulates periodontium mesenchymal stem cells activation by modulating Wnt inhibitor level within the niche**

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OSTEOARTHRITIS AND OTHER JOINT DISORDERS

SUN-425 **Core binding factor β protects osteoarthritis progression by inhibiting proteosomal degradation of Runx1**

*Xiangguo Che[1], Xian Jin[1], Yu-Min Hong[1], Dong-Kyo Lee[1], Byung-Deu Kim[1], Na-Rae Park[1], Hyun-Ju Kim[1], Je-Yong Choi[1], Eui-Kyun Park[2]. [1]Department 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, [2]Department of Oral Pathology, School of Dentistry, Kyungpook National University, Republic of Korea

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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 Choi[1], JooYeon Jhun[1], Ji Ye Kwon[1], Jaeyoon Ryu[1], Miso Kim[1], Hyun Sik Na[1], KyoungAh Jung[1], Mi-La Cho[2]. [1]The Rheumatism Research Center, Catholic Research Institute of Medical Science, Republic of Korea, [2]1 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

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SUN-427 **Meaningful Effectiveness of Platelet-Rich Plasma (PRP) in Treating Patients with Osteoarthritis of the Knee: Meta-analysis and Review**

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SUN-428 **p21 deficiency is susceptible to TMJ-Osteoarthritis with mechanical stress**

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SUN-429 **LPS Induced Inflammation Prior to Anterior Cruciate Ligament (ACL) Injury Increases the Severity of Post-Traumatic Osteoarthritis in C57Bl/6J Mice**

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SUN-430 **Analysis of bone erosions of the MCP joint using High Resolution peripheral Quantitative CT (HR-pQCT): an investigation of false-positive erosions**

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SUN-431 **Effect of Alendronate Treatment on the Load Response of the Mandibular Cartilage in Osteogenesis Imperfecta Mice**

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SUN-432 **Oral Gene Therapy of Post-traumatic Osteoarthritis with Gut Macrophage-targeted Delivery of IL-1β shRNA via Recombinant Sacchromyces Cerevisiae**

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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-Trevisan[1], Larissa Moreira Spínola Castro-Raucci [2], Luciana Oliveira Almeida[3], Emanuela Prado Ferraz [3], Roger Rodrigo Fernandes[3], Fabíola Singaretti Oliveira[3], Adalberto Luiz Rosa [3], Márcio Mateus Beloti[3]. [1]University of São Paulo, Brazil, [2]University of Ribeirão Preto, Brazil, [3]University of São Paulo, Brazil

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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**

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Disclosures: Jin Hong Chen, None

SUN-468 **Ezh2 inhibition primes BMP2-mediated osteogenic differentiation and bone healing**

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SUN-469 **Critical Role of IGF1 Signaling in Regulating CXCL12 Expression in Fracture Repair**

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SUN-470 **Genome-wide dynamics of transcription factor binding and epigenomic programming in mesenchymal stromal cells during osteoblastic differentiation**

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SUN-471 **Col1a1-Cre targets the ovary and testis.**

*Tadayoshi Hayata[1], Yoichi Ezura[2], Makoto Asashima[3], Ryuichi Nishinakamura[4], Masaki Noda[5]. [1]Tokyo University of Science, Japan, [2]Tokyo Medical & Dental University, Japan, [3]Teikyo University, Japan, [4]Kumamoto University, Japan, [5]Yokohama City Minato Red Cross Hospital, Tokyo Medical & Dental University, Japan

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SUN-472 **Reactivation of bone lining cells is modestly attenuated but reproducible during persistent anti-sclerostin antibody administration**

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Disclosures: A Ram Hong, None

SUN-473 **Characterization of the Consequences of Loss of DAAM2 in Human Osteoblasts**

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SUN-474 **Noncanonical autophagy at ER exit sites in osteoblasts**

*Shakib Omari[1], Elena Makareeva[1], Anna Roberts-Pilgrim[1], Lynn Mirigian[1], Michal Jarnik[1], Sergey Leikin[1], Jennifer Lippincott-Schwartz[2]. [1]National Institutes of Health, United States, [2]HHMI, Janelia Research Campus, United States

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SUN-475 **Research on Semaphorin4D in Periodontal Tissues of Experimental Rat Periodontitis**

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SUN-476 **Deciphering phosphate signaling cascade in osteogenic cells**

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Posters

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 Nam[1], Eui Kyun Park[1], Jung-Eun Kim[2], Je-Yong Choi[3]. [1]Department of Pathology and Regenerative Medicine, School of Dentistry, Kyungpook National University, Republic of Korea, [2]Department of Molecular Medicine, School of Medicine, Kyungpook National University, Republic of Korea, [3]Department of Biochemistry and Cell Biology, School of Medicine, Kyungpook National University, Republic of Korea

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SUN-478 **Development of In Vitro Bone Surface Models on Demineralized Compact Bone Slices**

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Disclosures: Yongkuk Park, None

SUN-479 **Histone Demethylase LSD1 Regulates Osteoblast Differentiation in vitro and in vivo**

*Petri Rummukainen[1], Kati Tarkkonen[1], Rana Al-Majidi[1], Amel Dudakovic[2], Andre van Wijnen[2], Cristina Valensisi[3], David Hawkins[3], Riku Kiviranta[4]. [1]Institute of Biomedicine, University of Turku, Finland, [2]Orthopedic Research, Mayo Clinic, United States, [3]University of Washington, United States, [4]Institute of Biomedicine, University of Turku, University Hospital of Turku, Finland

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SUN-481 **Betaine alleviates alcohol-inducedosteonecrosis of femoral head via regulation of PI3K/AKT/mTORpathway**

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SUN-482 **Osteoblast-specific expression of Panx3 is dispensable for postnatal bone remodeling**

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Disclosures: Timur Yorgan, None

OSTEOCLASTS

SUN-522 **Osteoclast Precursor Assessment In Rheumatoid Arthritis: The In Vitro Osteoclast Differentiation in Arthritis (IODA) study**

*Hugues Allard-Chamard[1], Nathalie Carrier[1], Artur de Brums-Fernandes[1], Gilles Boire[1], Sophie Roux[1], Svetlana Komarova[2], Rene Harrison[3], Morris Manolson[4]. [1]Rheumatology, Faculty of Medicine, Sherbrooke University, Canada, [2]Faculty of Dentistry, McGill University, Canada, [3]University of Toronto Scarborough, Canada, [4]Faculty of Dentistry, University of Toronto, Canada

Disclosures: Hugues Allard-Chamard, None

SUN-523 **Mature Murine Osteoclasts Respond Rapidly to Low Extracellular Sodium with GTP-ase Activation and Increased Bone Resorption**

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SUN-524 **LPlastin deficiency reduced sealing ring formation and bone resorption in osteoclasts in vitro**

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SUN-525 **GPR109A regulates osteoclastogenesis and bone resorption in mice**

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SUN-526 **The Effect of ZBTB20 on NF-kB/IRF-3 Signaling Pathway in Aseptic Loosening Caused by Wear-Particle-Induced Osteolysis**

*Yue Ding[1], Junxiong Qiu[1], Peng Peng[1], Zhong Chen[1], Shixun Li[1], Changchuan Li[1]. [1]Department of Orthopaedic Surgery, Sun Yat-Sen Memorial Hospital, Sun Yat-Sen University, China

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SUN-527 **Perturbation of osteoclasts in utero affects mouse mandibular morphology**

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SUN-528 **Humanin suppresses RANKL-induced osteoclast differentiation through AMPK activation**

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SUN-529 **Enhanced osteoclast bone-resorbing activity in vitro by stabilin-1 deficiency**

*Soon-Young Kim[1], Eun-Hye Lee[1], Seung-Hoon Lee[1], Suk Hee Lee[1], So Yeon Jin[1], Jung-Eun Kim[1]. [1]Department 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**

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Disclosures: Quitterie Larrouture, None

SUN-531 **Microtubule Actin Crosslinking Factor 1 (MACF1) Positively Controls Osteoclastogenesis via Akt/GSK3β/NFATc1 Signaling Pathway**

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Disclosures: Xiao Lin, None

SUN-532 **Macrophage-derived thymidine phosphorylase promotes osteoclastogenesis and bone resorption in inflammatory osteolysis**

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Disclosures: Gen Matsumae, None

SUN-533 **TNF-α stimulates the expression of RANK during orthodontic tooth movement**

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Disclosures: Takahiro Noguchi, None

SUN-534 **Investigation of the contribution of osteoclastgenesis relevant cells to osteoclast formation in orthodontic tooth movement**

*Saika Ogawa[1], Hideki Kitaura[1], Aseel Marahleh[1], Akiko Kishikawa[1], Jiawei Qi[1], Wei-Ren Shen[1], Fumitoshi Ohori[1], Takahiro Noguchi[1], Yasuhiko Nara[1], Itaru Mizoguchi[1]. [1]Division of Orthodontics and Dentofacial Orthopedics, Department of Translational Medicine, Tohoku University Graduate School of Dentistry, Japan

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SUN-535 **Sex-specific increase in osteoclast differentiation and function by Pannexin1 channel deletion in TRAP-expressing cells**

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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**

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Disclosures: Bongjin Shin, None

SUN-537 **MicroRNA146a in human osteoclasts and Paget's disease of Bone**

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Disclosures: Elizabeth Stephens, None

SUN-538 **Roles of TLR3 signaling in inflammatory bone resorption**

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SUN-539 **Osteoclasts are not a physiologically relevant source of SLIT3**

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OSTEOCYTES

SUN-568 **Osteocyte Lacunar Properties in Bone Tissue from Fracturing and Non-fracturing Women**

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Disclosures: Mohammed Akhter, None

SUN-569 **First evidence of osteocytes proliferation within their lacuna in vivo**

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SUN-570 **Enlarged osteocyte lacunae in infantile bone are associated with heterogenous bone matrix mineralization**

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Disclosures: Nico Maximilian Jandl, None

SUN-571 **Disruption of the Aldehyde Dehydrogenase 2 Gene Increases Bone Anabolic Response to Intermittent PTH Treatment in Ovariectomized Mice Model.**

*Kenji Kosugi[1], Takafumi Tajima[1], Kayoko Okuma[1], Yasuaki Okada[1], Manabu Tsukamoto[1], Yoshiaki Yamanaka[1], Akinori Sakai[1], Kunitaka Menuki[2]. [1]The Department of Orthopaedic Surgery, University of Occupational and Environmental Health Japan., Japan, [2]The 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**

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SUN-573 **Direct Interactions between Multiple Myeloma Cells and Osteocytes in the Hypoxic Myeloma Microenvironment Induce a Pro-angiogenic Phenotype in Osteocytes**

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SUN-574 **Investigation of the Role of TNF-α-Induced Sclerostin on Osteocytes during Orthodontic Tooth Movement**

*Fumitoshi Ohori[1], Hideki Kitaura[1], Aseel Marahleh[1], Akiko Kishikawa[1], Saika Ogawa[1], Jiawei Qi[1], Wei-Ren Shen[1], Takahiro Noguchi[1], Yasuhiko Nara[1], Itaru Mizoguchi[1]. [1]Division of Orthodontics and Dentofacial Orthopedics, Department of Translational Medicine, Tohoku University Graduate School of Dentistry, Japan

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SUN-575 **Exogenous hyperthyroidism induces osteocytic osteolysis in male mice**

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SUN-576 **From Osteon Formation/Remodeling of Dog Bones to Loss of Cortical Bone in Human Bones**

*Ke Wang[1], Jun Wang[1], Yan Jing[1], Xudong Xie[1], Xiaohua Liu[1], Hu Zhao[1], Jian Q. Feng[1], Yinshi Ren[2], Chi Ma[2], Harry Kim[2], Min Jin[3], Yangli Xie[3], Lin Chen[3], Xianglong Han[4], Bjorn R. Olsen[5]. [1]Texas A&M University College of Dentistry, United States, [2]Texas Scottish Rite Hospital for Children, United States, [3]Third Military Medical University, China, [4]Sichuan University West China School of Stomatology, China, [5]Harvard 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 Wang[1], Ei Ei Hsu Hlaing[1], Tomoyo Tanaka[1], Ryuta Osumi[1], Noriaki Kawanabe[1], Hiroshi Kamioka[1], Yoshihito Ishihara[2], Naoya Odagaki[2]. [1]Department of Orthodontics, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Japan, [2]Department of Orthodontics, Okayama University Hospital, Japan

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SUN-578 **Cx43 Regulates β-catenin Activity in Fully Differentiated Osteocytic Cells**
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OSTEOPOROSIS - ASSESSMENT

SUN-603 **A 5 year study on Bone-Density Testing Interval in Orthotopic Liver Transplant recipients**
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SUN-604 **Musculoskeletal Failure: A Proposal**
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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 Borgen[1], Lene Bergendahl Solberg[1], Cathrine Brunborg[1], Ida Lund[1], Cecilie Dahl[1], Tone Kristin Omsland[1], Erik Fink Eriksen[1], Åshild Bjornerem[2], Camilla Andreasen[2], Ann Kristin Hansen[2], May-Britt Stenbro[3], Lars Michael Hübschle[3], Anne Froholdt[3], Wender Figved[4], Ellen Margrete Apalset[5], Jan-Erik Gjertsen[5], Trude Basso[6], Jens-Meinhard Stutzer[7], Lars Nordsletten[8], Frede Frihagen[8]. [1]University of Oslo, Norway, [2]The Arctic University of Norway, Norway, [3]Drammen Hospital, Norway, [4]Bærum Hospital, Norway, [5]University of Bergen, Norway, [6]St Olavs Hospital, Norway, [7]Molde Hospital, Norway, [8]Oslo University Hospital, Norway
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SUN-606 **Loss of Bone Microarchitecture Assessed by Trabecular Bone Score in BRCA Mutation Carriers Following Prophylactic Salpingo-Oophorectomy**
*Madeline Dwyer[1], Joanne Kotsopoulos[2], Paula Harvey[2], Steven Narod[2], Ella Huszti[3], Jeevitha Sriganthan[3], Irene Ho[3], Marcus Bernardini [3], Barry Rosen[3], Angela Cheung [3], Suzanne Cohen [4], Joan Murphy [5]. [1]University of Toronto, Canada, [2]Women's College Hospital, Canada, [3]University Health Network, Canada, [4]University Health Network, Canada, [5]Trillium Health Partners, Canada
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SUN-607 **Structural Parameters of Proximal Femur by 3D Dual-Energy X-ray Absorptiometry in Patients with Primary Hyperparathyroidism**
*Beatriz García-Fontana[1], Antonia García-Martín[1], Luis Gracia Marco[2], Sheila González-Salvatierra[3], Cristina García-Fontana[4], Enrique Moratalla-Aranda[5], Diego Becerra-García[6], Ludovic Humbert[7], Manuel Muñoz-Torres[8]. [1]1 Unit of Bone Metabolism, Endocrinology and Nutrition Division. Hospital Universitario San Cecilio. Instituto de Investigación Biosanitaria de Granada (ibs. GRANADA), Granada, Spain; 2 CIBERFES, Instituto de Salud Carlos III, Madrid, Spain., Spain, [2]3 Department of Physical Education and Sports, Universidad de Granada, Granada, Spain., Spain, [3]4 Department of Medicine. Universidad de Granada, Granada, Spain; 5 Hospital Universitario San Cecilio. Instituto de Investigación Biosanitaria de Granada (ibs. GRANADA), Granada, Spain., Spain, [4]5 Hospital Universitario San Cecilio. Instituto de Investigación Biosanitaria de Granada (ibs. GRANADA). Fundación Pública Andaluza para la investigación Biosanitaria Andalucía Oriental (FIBAO), Granada, Spain;, Spain, [5]4 Department of Medicine. Universidad de Granada, Granada, Spain; 6 Nuclear Medicine Unit, Department of Radiology. Hospital Universitario San Cecilio, Granada, Spain., Spain, [6]6 Nuclear Medicine Unit, Department of Radiology. Hospital Universitario San Cecilio, Granada, Spain., Spain, [7]7 Musculoskeletal Unit, Galgo Medical, Barcelona, Spain., Spain, [8]1 Unit 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**

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SUN-610 **Sex-related body habitus effect on relationship between DXA- and CT-based hip areal BMD in Koreans**

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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**

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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**

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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**

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Disclosures: Jenny Thain, None

SUN-616 **Differences in Hip Geometry Between Female Subjects with and without Acute Hip Fracture**

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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)**

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SUN-659 **Higher Weight is Protective Against Menopausal Bone Loss Among Black and White Women: SWAN Longitudinal HR-pQCT Study**

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SUN-660 **Differences in Bone Status, Muscle Function, and Fat Mass Between Asian and Caucasian Women**

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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 Koike[1], Yuko Sugioka[2], Kenji Mamoto[3], Masahiro Tada[4], Tadashi Okano[5], Kentaro Inui[5], Shohei Anno[6], Shuko Tsumoto[7]. [1]Search Institute for Bone and Arthritis Disease, Shirahama Foundation for Health and welfare, Japan, [2]Center for Senile Degenerative Disorders, Osaka City University Medical School, Japan, [3]Orthopaedic Srgery, Yodogawa Christian Hospital, Japan, [4]Orthopaedic Surgery, Osaka City general Hospital, Japan, [5]Orthopaedic Surgery, Osaka City University Medical School, Japan, [6]Orthopaedic Surgery, Osaka Social Medical Cente, Japan, [7]Orthopaedic 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**

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SUN-664 **Higher Mortality in Older Men with Poor Bone Microarchitecture – the STRAMBO Prospective Study**

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Disclosures: Pawel Szulc, None

SUN-665 **Incidence Rates of Hip Fractures in Elderly Mexican Population Without Social Security**

*Francisco Torres-Naranjo[1], Edgar Saul Tejeda-Chavez[2], Roberto Gabriel González-Mendoza[3], Noé González-Gallegos[4], Isabel Valadez-Figueroa[5], Pilar de la Peña[6], Hugo Gutiérrez-Hermosillo[7], Juan Ricardo López-Taylor[8]. [1]Center of Body Composition and Bone Research, Mexico, [2]University of Guadalajara; Secretaria de Salud., Mexico, [3]Department of Human Reproduction, Infantile Growth and Development, University Health Sciences Center,University of Guadalajara, Mexico, [4]Department of Welfare and Sustainable Development, University Center of the North, University of Guadalajara, Mexico, [5]Regional Institute of Public Health Research of the University of Guadalajara, Mexico, [6]Servicios Médicos De la Peña SC, Mexico, [7]Hospital Aranda de la Parra, Mexico, [8]Institute 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

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SUN-666 **Small individual-level increase in bone mineral density translated into substantial population-level decrease in fracture incidence: revisiting Goeffrey Rose's axiom**

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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 Xia[1], Qiang Liu[2], Jinhan Lv[3], Zhenlin Zhang[4], Wen Wu[5], Zhongjian Xie[6], Jianting Chen[7], Liang He[8], Jian Dong[9], Zhenming Hu[10], Yu Xia[11], Fang Wei[12], Jue Wang[12]. [1]Peking Union Medical College Hospital, Beijing, China, China, [2]The first hospital of Shanxi Medical University, China, [3]The People's Hospital of Ningxia Hui Autonomous Region, Ningxia, China, China, [4]The Sixth People's Hospital, Shanghai Jiaotong University, Shanghai, China, China, [5]Guangdong General Hospital, Guangdong, China, China, [6]The Second Xiangya Hospital of Central South University, Hunan, China, China, [7]Nanfang Hospital of Southern Medical University, Guangdong, China, China, [8]Beijing Jishuitan Hospital, Beijing, China, China, [9]Fudan University Zhongshan Hospital, Shanghai, China, China, [10]The First Affiliated Hospital of Chongqing Medical University, Chongqing, China, China, [11]Real World Evidences, IQVIA RDS (Shanghai) Co. Ltd., Shanghai, China, China, [12]Global 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**

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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 Jaglal[1], Crystal MacKay[1], Cathy Cameron[1], Sandra Kim[2], Alexandra Papaioannou[3], Joanna Sale[4], Rebeka Sujic[4], Ravi Jain[5]. [1]University of Toronto, Canada, [2]Women's College Hospital, Canada, [3]Hamilton Health Sciences Centre, Canada, [4]St. Michael's Hospital, Canada, [5]Osteoporosis Canada, Canada
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SUN-698 **How Exercise Professionals support Individuals with Acute Vertebral Fractures**
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SUN-699 **Exploring The Burden Of X-Linked Hypophosphatemia: A European Multi-Country Qualitative Study**
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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 Freitas[1], Henrique Reguengo[1], Franklim Marques[1], Yiannis Koutedakis[2], Tânia Amorim[3]. [1]University of Porto, Portugal, [2]University of Thessaly, Greece, [3]University 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)**
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SUN-716 **Factors Contributing to Vitamin D Status Changes during Initial Military Training**
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SUN-717 **Vitamin D Status in 990 Medical Examinees at a Regional Public General Hospital**
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Disclosures: Satoshi Hagio, None

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 Mawatari[1], Misa Osako[1], Kazuki Kitade[1], Shinya Kawahara[1], Satoshi Ikemura[1], Gen Matsui[1], Takahiro Iguchi[1], Hiroaki Mitsuyasu[1], Satoshi Hagio[1]. [1]Hamanomachi 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**

*Ya-Jun Ma[1], Saeed Jerban[1], Zhao Wei[1], Zhenyu Cai[1], Sarah To[1], Hyungseok Jang[1], Jiang Du[1], Eric Chang[2]. [1]UC San Diego, United States, [2]VA San Diego, United States

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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.**

*gonzalo allo miguel[1], Sonsoles Guadalix Iglesias[2], Cristina Martín-Arriscado Arroba [3], Federico Hawkins[3], Laura Mola Reyes[4], Guillermo Martínez Díaz-Guerra[5]. [1]Endocrinology Service. 12 de octubre University Hospital, Spain, [2]Endocrinology Service. 12 de Octubre University Hospital, Spain, [3]Research Institute i+12, University Hospital 12 de Octubre, Complutense University, Spain, [4]Endocrinology Service. 12 de Octubre Univeristy Hospital, Spain, [5]Endocrinology Service, University Hospital 12 de Octubre, Spain

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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 Chiba[1], Yusaku Isobe[2], Narihiro Okazaki[2], Naoko Murakami[2], Michio Kitajima[2], Makoto Osaki[2], Kiyonori Miura[2], Yuriko Kitajima[3]. [1]Nagasaki University Graduate School of Biomedical Science, Japan, [2]Nagasaki University Graduate School of Biomedical Sciences, Japan, [3]Department 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 Kwak[1], Jane Ha[1], Jong Woong Park[1], Yeongkeun Kwon[1], Yousun Won[2]. [1]Korea University College of Medicine, Republic of Korea, [2]Soonchunhyang University College of Medicine, Republic of Korea

Disclosures: Donghee Kwak, None

SUN-750 **An analysis of the pathogenesis of bone fragility in patients with liver cirrhosis: Measurement of bone microstructure with HR-pQCT**

*Narihiro Okazaki[1], Ko Chiba[1], Makoto Era[1], Kiyoshi Sada[1], Makoto Osaki[1], Tomoyuki Suehiro[2]. [1]Department of Orthopaedic Surgery, Nagasaki University Hospital, Japan, [2]Department 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**

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SUN-752 **Altered bone strength and cortical bone parameters in young women with long-duration type 1 diabetes**

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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**

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Disclosures: Nobuyuki Tai, None

SUN-754 **Efficacy and safety of three-year treatment with denosumab in post-kidney transplantation recipients**

*Yasumasa Yoshino[1], Chika Fujisawa-Tanaka[1], Atsushi Suzuki[1], Izumi Hiratsuka[2], Megumi Shibata[3], Taihei Ito[4], Takashi Kenmochi[4], Hitomi Sasaki[5], Mamoru Kusaka[5], Ryoichi Shiroki[5], Kiyotaka Hoshinaga[5], Midori Hasegawa[6], Yukio Yuzawa[6]. [1]Department of Endocrinology and Metabolism, Fujita Health University School of Medicine, Japan, [2]Department of Endocrinology and Metabolism, Department of Nephrology, Fujita Health University School of Medicine, Japan, [3]Department 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, [4]Department of Organ Transplant Surgery, Fujita Health University School of Medicine, Japan, [5]Department of Urology, Fujita Health University School of Medicine, Japan, [6]Department of Nephrology, Fujita Health University School of Medicine, Japan

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OSTEOPOROSIS - TREATMENT

SUN-782 **Incidence of Atypical Fractures in the South-East-Asian population**

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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 Castillo[1], Jonathan Messer[1], Jessica Jiron[1], Indraneel Bhattacharyya[1], Donald Kimmel[1], Jose Aguiire[1], abel abraham[2]. [1]University of Florida, United States, [2]University of South Florida, United States

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SUN-784 **Longitudinal Effects of Combined Bone Anabolic Interventions on Ovariectomised Mice**

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SUN-785 **Assessment of the effects of sequential treatment after discontinuing denosumab in 64 patients with postmenopausal osteoporosis**

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SUN-786 **The Effect of Thiazide Exposure in Preventing Osteoporotic Fractures: A Single Center Review**

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SUN-787 **A Real-World Study of the Patient Experience of Osteoporosis Following Treatment with Abaloparatide**

*Deborah T. Gold[1], Rich Weiss[2], Yamei Wang[2], Setareh Williams[2], Jenna Roberts[3], Tom Bailey[3]. [1]Duke University Medical Center, United States, [2]Radius Health, Inc., United States, [3]Adelphi Real World, United Kingdom

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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**

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SUN-789 **The Slow and Sustained Release of a Low Dose of BMP-7 Accelerates Implant Healing in an Osteoporotic Environment**

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SUN-790 **Cliniclal efficacy of denosumab comparison with either active vitamin D or native vitamin D on osteoporosis in patients with Japanese rheumatoid arthritis**

*Yasuhide Kanayama[1], Taichi Tsuji[2], Hironobu Inagaki[2], Naohisa Futamura[2], Kyotaro Ota[2], Naomasa Osada[2], Yui Adachi[2], Hiroto Tachi[2], Ryosuke Sugimoto[2], Kazunori Todoroki[2]. [1]Department of Ortopedic Surgery and Rheumatology, Toyota Kosei Hospital, Japan, [2]Department of Orthopedic Surgery, Toyota Kosei Hospital, Japan

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SUN-791 **Switching from TPTD to DSMb would be the strongest sequential treatment for severe osteoporosis.**

*Yoichi Kishikawa[1]. [1]Kishikawa Orthopedic Clinic, Japan

Disclosures: Yoichi Kishikawa, None

SUN-792 **Bone Marrow Aspirate Concentrate for Nonunions and Delayed Unions: A Systematic Review**

*Sameh Melik[1], Angela Cheung[1], Kieran Murphy[1], Sowmya Viswanathan[1], Khalid Syed[1], Richard Ward[1]. [1]University 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 Miyauchi[1], Rajani Dinavahi[2], Daria Barry Crittenden[2], Wenjing Yang[2], Judy Maddox[2], Andreas Grauer[2], Etsuro Hamaya[3], Yoichi Nakamura[3], Junichiro Shimauchi[3], Cesar Libanati[4]. [1]Miyauchi Medical Center, Japan, [2]Amgen Inc., United States, [3]Amgen Astellas BioPharma, Japan, [4]UCB Pharma, Belgium

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SUN-794 **In vivo experiments with strontium HA nanoparticles loaded-implants.**

*Giulia Montagna[1], Livia Visai[1], Beth Bragon[2], Paola Divieti Pajevic[3], Louis Gerstenfeld[4]. [1]Molecular Medicine Department (DMM), Center for Health Technologies (CHT), UdR INSTM, University of Pavia, Viale Taramelli 3/B - 27100 Pavia – ITALY, Italy, [2]Department of Orthopaedic Surgery, Boston University School of Medicine, 72 East Concord St, Evans 243, Boston, MA, 02118, USA., United States, [3]Molecular and Cell Biology, Boston University Henry M. Goldman School of Dental Medicine, Boston MA, United States, [4]Department of Orthopaedic Surgery, Boston University School of Medicine, Boston, MA 02118, USA. Electronic address: bragdon@bu.edu., United States

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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.**

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SUN-796 **The effect of combination therapy of PTH and vitamin D**

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SUN-797 **Greater Fear of Falling is associated with Lower Exercise Self-efficacy in Older Women with Vertebral Fractures.**

*Matteo Ponzano[1], Jeffrey Templeton[1], Lora Giangregorio[1], Jenn Gibbs [2], Jonathan Adachi[3], Aliya Khan[3], Sadhana Prasad[3], Maureen Ashe[4], David Kendler[5], Caitlin McArthur[6], Alexandra Papaioannou[7], Lehana Thabane[8]. [1]Department of Kinesiology, University of Waterloo, Waterloo, Canada, Canada, [2]Department of Kinesiology and Physical Education, McGill University, Montreal, Canada, Canada, [3]Department of Medicine, McMaster University, Hamilton, Canada, Canada, [4]Department of Family Practice, The University of British Columbia, Vancouver, Canada, Canada, [5]Department of Medicine, The University of British Columbia, Vancouver, Canada, Canada, [6]GERAS Centre for Aging Research, McMaster University, Hamilton, Canada, Canada, [7]GERAS Centre, McMaster University, Hamilton, Canada, Canada, [8]Department of Health Research Methods, Evidence and Impact, McMaster University, Hamilton, Canada, Canada

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SUN-798 **Cliniclal efficacy of denosumab in patients with osteoporosis between rheumatoid arthritis and primary osteoporosis**

*Hiroto Tachi[1], Kanayama Yasuhide[1], Tsuji Taichi[1], Inagaki Hironobu[1], Futamura Naohisa[1], Ota Kyotaro[1], Osada Naohisa[1], Adachi Yui[1], Sugimoto Ryosuke[1], Todoroki Kazunori[1]. [1]Orthopedic Surgery, Toyota Kosei Hospital, Toyota, Japan, Japan

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SUN-799 **Glucocorticoid-induced loss of cortical bone at the femoral neck of micoro-mini pig are prevented by risedronate**

*Shinya Tanaka[1], Hirmomi Oda[1], Koh Chiba[2], Taketoshi Shimakura[3], Noriaki Yamamoto[3]. [1]Saitama medical university, Japan, [2]Nagasaki university, Japan, [3]Niigata bone science institute, Japan

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SUN-800 **Comparison of ONJ epidemiology in bisphosphonates long-term treated patients and switched to denosumab after tooth extraction**

*Vaclav Vyskocil[1], Daniel Hrusak[2], Jan Jambura[2], Lukas Hauer[2], Petr Posta[3]. [1] Charles University Hospital Centre of Bone Disease Department of medicine II., Czech Republic, [2]Charles University Hospital Department of Oral and Maxillofacial Surgery, Czech Republic, [3]Charles University Hospital Department of Oral and Maxillofacial Surgery, Plzen, Czech Republic

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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**

*Yuanyuan Yu[1], Qing Ren[1], Shuaijian Ni[1], Jin Liu[1], Chuanxin Zhong[1], Jun Lu[1], Yuan Tang[1], Dijie Li[1], Duoli Xie[1], Rongchen Dai[1], Huarui Zhang[1], Lei Dang[1], Aiping Lyu[1], Ge Zhang[1], Zhenjian Zhuo[2], Zong-Kang Zhang[2], Bao-Ting Zhang[2], Luyao Wang[3], Yongshu Li[3], Kui Kwan Wong[4], Joseph Zhai[5]. [1]Institute for Advancing Translational Medicine in Bone & Joint Diseases (TMBJ), Hong Kong Baptist University, Hong Kong SAR, China, Hong Kong, [2]School of Chinese Medicine, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong SAR, China, Hong Kong, [3]Guangdong-Hong Kong-Macao Greater Bay Area International Research Platform for Aptamer-based Translational Medicine and Drug Discovery (HKAP), Hong Kong SAR, China, Hong Kong, [4]Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Hong Kong SAR, China, Hong Kong, [5]Del Norte High School, San Diego, CA, USA, United States

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PARACRINE REGULATORS

SUN-825 **Retinoic Acid Receptor-related Orphan Receptor Beta (Rorβ) Regulates Inflammation in Bone Environment by Inhibiting Interleukin 10 (Il-10) Expression**

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Posters

SUN-826 **Deficiency of Sphingosine-1-Phosphate Receptor 3 Does not Affect the Skeletal Phenotype of Mice Lacking Sphingosine-1-Phosphate Lyase**
*Laura Brylka[1], Timo Heckt[1], Mona Neven[1], Michael Amling[1], Thorsten Schinke[1]. [1] Department of Osteology and Biomechanics, University Medical Center Hamburg-Eppendorf, Germany
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SUN-827 **A Novel Caspase 9 Inducible Apoptosis Mouse Model**
*Amy Koh[1], Justin Do[1], Hernan Roca[1], Laurie McCauley[1]. [1]School of Dentistry, University of Michigan, United States
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SUN-828 **Role of Absent in Melanoma (AIM) 2 in Bone Integrity and Quality**
*Gozde Yildirim[1], Shoshana Yakar[1], Manisha Dixit[2], Zhenwei Gong[3], Radhika Muzumdar[4]. [1]Department of Basic Science and Craniofacial Biology, David B. Kaiser Dental Center, New York University College of Dentistry, NY, USA, United States, [2]1.Department of Basic Science and Craniofacial Biology, David B. Kaiser Dental Center, New York University College of Dentistry, NY, USA, United States, [3]2.Department of Pediatrics, University of Pittsburgh School of Medicine, One Children's Hospital Drive, 4401 Penn Avenue, Pittsburgh, PA 15224, USA, United States, [4]Department of Pediatrics, University of Pittsburgh School of Medicine, One Children's Hospital Drive, 4401 Penn Avenue, Pittsburgh, PA 15224, USA, United States
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PRECLINICAL MODELS OF MUSCULOSKELETAL DISORDERS

SUN-845 **Local Gene Expression Patterns In Differentially Treated Segmental Bone Defects**
*Andrea Alford[1], Nishant Gohel[1], Rafael Senos[1], Steve Goldstein[1], Kurt Hankenson[1], Mark Hake[1]. [1]University of Michigan, United States
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SUN-846 **Abaloparatide Treatment improves Spinal Fusion in a Rat Posterolateral Fusion Model**
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Disclosures: Heike Arlt, Radius Health, Major Stock Shareholder

SUN-847 **Comparative assessment of senolytic drugs in attenuating focal radiotherapy-related bone loss**
*Abhishek Chandra[1], Christine Hachfeld[1], Sean Park[1], James Kirkland[1], Robert Pignolo[1], Sundeep Khosla[2]. [1]Mayo Clinic, United States, [2]mayo Clinic, United States
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SUN-848 **Modeling Key Metabolic and Skeletal Phenotypes of Human T2DM in the Mouse**
*Brittany Eckhardt[1], Jennifer Rowsey[1], Brianne Thicke[1], Daniel Fraser[1], David Monroe[1], Joshua Farr[1]. [1]Mayo Clinic, United States
Disclosures: Brittany Eckhardt, None

SUN-849 **Tartrate-Resistant Acid Phosphatase 5b in Rat Serum and Plasma**
*Jussi M Halleen[1], Jukka Vääräniemi[1], Jenni HE Mäki-Jouppila[1], Katja M Fagerlund[1], Jukka Morko[1]. [1]Pharmatest Services, Finland
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SUN-850 **p-Cresyl sulfate causes bone fragility by osteocytes apoptosis in CKD bone**
*Yoshiko Iwasaki[1], Hideyuki Yamato[2], Masafumi Fukagawa[2], Junichiro Kazama[3]. [1]Oita University of Nursing and Health Sciences, Japan, [2]Division of Nephrology, Endocrinology, and Metabolism, Tokai University, Japan, [3]Department 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 Larson[1], Robert Klein[1], Steven Grover[2], Nigel Mackman[2], Emily Larson[3], Jason Taylor[4]. [1]Portland VA Health Care System, United States, [2]University of North Carolina, United States, [3]VA Portland Health Care System, United States, [4]Oregon Health & Science University, United States

Disclosures: Hillary Larson, None

SUN-852 **Thalassemia Prevents Cancellous Bone Loss in Chronic Kidney Disease Mice**

*Sutada Lotinun[1], Korakot Atjanasuppat[1], Worasit Saiworn[1], Asada Leelahavanichkul[2], Saovaros Svasti[3], Nateetip Krishnamra[4]. [1]Department of Physiology and Skeletal Disorders Research Unit, Faculty of Dentistry, Chulalongkorn University, Thailand, [2]Department of Microbiology, Faculty of Medicine, Chulalongkorn University, Thailand, [3]Thalassemia Research Center, Institute of Molecular Biosciences, Mahidol University, Thailand, [4]Department of Physiology, Faculty of Science, Mahidol University, Thailand

Disclosures: Sutada Lotinun, None

SUN-853 **Osteoporosis in a murine model of postmenopausal lupus**

*Jauquline Nordqvist[1], Ulrika Islander[1], Hans Carlsten[1], Marie Lagerquist[2], Louise Grahnemo[2], Antti Koskela[3]. [1]Centre for Bone and Arthritis Research, Department of Rheumatology and Inflammation Research, Sahlgrenska Academy, University of Gothenburg, Sweden, [2]Centre for Bone and Arthritis Research, Department of Internal Medicine and Clinical Nutrition, Sahlgrenska Academy, University of Gothenburg, Sweden, [3]Department of Anatomy and Cell Biology, Faculty of Medicine, University of Oulu, Finland

Disclosures: Jauquline Nordqvist, None

SUN-854 **Towards mechanisms of bone regeneration and repair. Lessons learned from African spiny mice (Acomys)**

*Kirby Sherman[1], Alyssa Falck[1], Shannon Huggins[1], Ken Muneoka[1], Dana Gaddy[1], Larry Suva[1], Malcolm Maden[2]. [1]Texas A&M University, United States, [2]University 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 Talukder[1], Jung Lee[1], Anagha Gurjar[1], Mary O'Brien[1], John Elfar[1], Li Yue[2]. [1]Penn State College of Medicine, United States, [2]The 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 Tsukamoto[1], Yasuaki Okada[1], Hokuto Fukuda[1], Yoshiaki Yamanaka[1], Ken Sabanai[1], Eiichiro Nakamura[1], Akinori Sakai[1], Toshiharu Mori[2], Ke-Yong Wang[3], Keisuke Naito[4], Kazuhiro Yatera[4]. [1]Department of Orthopaedic Surgery, School of Medicine, University of Occupational and Environmental Health, Japan, [2]Department of Orthopaedic Surgery, Shin-Kokura Hospital, Federation of National Public Service, Personnel Mutual Aid Associations, Japan, [3]Shared-Use Research Center, School of Medicine, University of Occupational and Environmental Health, Japan, [4]Department 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 Messer[1], Evelyn Castillo[2], Abel Abraham[2], Jessica Jiron[2], Ronnie Israel[2], Samantha Thomas[2], Donald Kimmel[2], J. Ignacio Aguirre[2], Joshua Yarrow[3], Michael Reynolds[3], Russell Wnek[3], Catherine Van Poznak[4], Indraneel Bhattacharyya[5]. [1]Department of Physiological Sciences, University of Florida, United States, [2]Department of Physiological Sciences, University of Florida, United States, [3]VA Medical Center, Research Service, VA Medical Center, Gainesville, FL, United States, [4]Medical Oncology, University of Michigan, United States, [5]Oral & 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 Brun [1], Laureana Villarreal [1], Mercedes Lombarte [1], Florencia E D´Andrea[1], Verónica E. Di Loreto[1]. [1]Bone 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 Rojas[1], Inger Thorup[1], Florian Bolze[1], Johannes Fels[1], Majken Dalgaard[1], Martin Guillot[2], Aurore Varela[2], Gabrielle Boyd[2], Yulia Tingle[3]. [1]Novo Nordisk A/S, Denmark, [2]Charles River, Canada, [3]Envigo, 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 Eaton[1], Andrew Elkinson[1], Joshua Havelin[1], Karen Houseknecht[1], Tamara King[1]. [1]University 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 Lyu[1], Roland Baron[1], Dorothy Hu[2], Francesca Gori[2], Jia-ming Zhang[3], Daniel Brooks[4], Mary Bouxsein[4], Beate Lanske[5]. [1]Harvard Medical School, United States, [2]Harvard School of Dental Medicine, United States, [3]Department of Biochemistry and Biophysics, Lineberger Comprehensive Cancer Center, University of North Carolina, United States, [4]Department of Orthopedics, Beth Israel Deaconess Medical Center, United States, [5]Radius 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 Sato[1], Miyakoshi Naohisa[1], Yuji Kasukawa[1], Koji Nozaka[1], Hiroyuki Tsuchie[1], Itsuki Nagahata[1], Yusuke Yuasa[1], Kazunobu Abe[1], Hikaru Saito[1], Yoichi Simada[1]. [1]Akita 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 Yu[1], Xiao-Li Dong[1], Chi-On Chan[1], Daniel Kam-Wah Mok[1], Man-Sau Wong[1], Si-Si Cao[2]. [1]The Hong Kong Polytechnic University, Hong Kong, [2]Purdue 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-Dijkstra[1], Wouter van der Bruge[2], Marlous Hagelstein-Rotman[3], Frits Smit[4], Sander Dijkstra[5], Lioe-Fee de Geus-Oei[6], Dennis Vriens[7]. [1]3Center for Bone Quality, dept. of Internal Medicine, division of Endocrinology, Leiden University Medical Center (LUMC), Netherlands, [2]Section of Nuclear Medicine, dept. of Radiology, Leiden University Medical Center (LUMC), and Dept. of Nuclear Medicine, Slingeland Hospital, Netherlands, [3]Center for Bone Quality, dept. of Internal Medicine, division of Endocrinology, Leiden University Medical Center (LUMC), Netherlands, [4]Dept. of Nuclear Medicine, Alrijne Hospital, Netherlands, [5]Dept. of Orthopaedic surgery, Leiden University Medical Center (LUMC), Netherlands, [6]Section of Nuclear Medicine, dept. of Radiology, Leiden University Medical Center (LUMC), Netherlands, [7]Section 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**

*Vinieth N. Bijanki[1], Gary S. Gottesman[2], Angela Nenninger[2], Hiram D. Stahl[3], Steven Mumm[4], Michael P. Whyte[4], William H. McAlister[5]. [1]Center for Metabolic Bone Diseaes and Molecular Research, Shriners Hospitals for Children-St. Louis, United States, [2]Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children-St. Louis, United States, [3]Center for Metabolic Bone Diseae and Molecular Research, Shriners Hospitals for Children-St. Louis, United States, [4]Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children-St. Louis; Division of Bone and Mineral Diseases, Washington University School of Medicine, United States, [5]Mallinckrodt Institute of Radiology, Washington University School of Medicine at St. Louis Children's Hospital, United States

Disclosures: Vinieth N. Bijanki, None

SUN-901 **Peptide Receptor Radionuclide Therapy (PRRT) Appears to be Ineffective Therapy for Tumor-Induced Osteomalacia (TIO)**

*Iris R. Hartley[1], Damian Wild[2], Michael S. Hofman[3], John W. Delahunt[4], Michael T. Collins[5], Rachel I. Gafni[5]. [1]National Institutes of Health, National Institute of Dental and Craniofacial Research, Skeletal Disorders and Mineral Homeostasis Section, United States, [2]University Hospital Basel, Center for Neuroendocrine and Endocrine Tumors, Switzerland, [3]Peter MacCallum Cancer Center, Centre for Cancer Imaging, Australia, [4]University of Otago, Department of Medicine, New Zealand, [5]National Institutes of Health, National Institute of Dental and Craniofacial Research, Skeletal Disorders and Mineral Homeostasis Section, United States

Disclosures: Iris R. Hartley, QED Therapeutics, Grant/Research Support

SUN-902 **Transient Osteoporosis of the Hip: A Rare Skeletal Disorder**

*Sergio Lizama[1], Hilary Whitlatch[1]. [1]University of Maryland School of Medicine, United States

Disclosures: Sergio Lizama, None

SUN-903 **Novel Point Mutations of the PTK2B Gene Identified in Patients with Hypoparathyroidism and Primary Hyperparathyroidism**

*Corine Martineau[1], Harsh Kanwar[1], Dong Li[1], Michael Levine[1]. [1]Children's Hospital of Philadelphia, United States

Disclosures: Corine Martineau, None

Posters

SUN-904 **Mutational analysis of the PHEX gene and genotype-phenotype correlation in 37 Japanese patients with X-linked hypophosphatemic rickets**

*Yasuhisa Ohata[1], Takuo Kubota[1], Shinji Takeyari[1], Taichi Kitaoka[1], Yukako Nakano[1], Kei Miyata[1], Chieko Yamada[1], Keiichi Ozono[1], Yasuki Ishihara[2], Hirofumi Nakayama[3], Kenichi Yamamoto[4], Makoto Fujiwara[5], Katsusuke Yamamoto[6], Toshimi Michigami[7], Hiroyo Mabe[8], Takeshi Yamaguchi[9], Katsuyuki Matsui[10], Izumi Tamada[11], Noriyuki Namba[12], Akiko Yamamoto[13], Junya Etoh[14], Azusa Kawaguchi[15]. [1]Department of Pediatrics, Osaka University Graduate School of Medicine, Japan, [2]The 1st. Department of Oral and Maxillofacial Surgery, Osaka University Graduate School of Dentistry, Japan, [3]Department of Pediatrics, Osaka University Graduate School of Medicine; The Japan Environment and Children's Study, Osaka unit center, Japan, [4]Department of Pediatrics, Osaka University Graduate School of Medicine; Department of Statistical Genetics, Osaka University Graduate School of Medicine, Japan, [5]Department of Pediatrics, Osaka University Graduate School of Medicine; The 1st. Department of Oral and Maxillofacial Surgery, Osaka University Graduate School of Dentistry, Japan, [6]Department of Pediatric Nephrology and Metabolism, Osaka Women's and Children's Hospital, Japan, [7]Department of Bone and Mineral Research, Osaka Women's and Children's Hospital, Japan, [8]Department of Pediatrics, Kumamoto University Graduate School of Medical Sciences, Japan, [9]Department of Pediatrics, Hokkaido University Graduate School of Medicine, Japan, [10]Department of Pediatrics, Shiga University of Medical Science, Japan, [11]Department of Pediatrics, Imakiire General Hospital, Japan, [12]Department of Pediatrics, Osaka University Graduate School of Medicine; Department of Pediatrics, Osaka Hospital, Japan Community Healthcare Organization (JCHO), Japan, [13]Department of Pediatrics, Kumamoto Chuo Hospital, Japan, [14]Department of Pediatrics, Saga-Ken Medical Center Koseikan, Japan, [15]Department of Pediatrics, National Hospital Organization Hokkaido Medical Center, Japan

Disclosures: Yasuhisa Ohata, None

SUN-905 **Characterization of Pain in Patients with Fibrous Dysplasia**

*Tiahna Spencer[1], Alison Boyce[1], Anushka Soni[2], Rafael Pinedo-Villanueva[2], Kassim Javaid[2]. [1]National Institutes of Health, United States, [2]University of Oxford, United Kingdom

Disclosures: Tiahna Spencer, None

SUN-906 **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. Whyte[1], Thomas O. Carpenter[2], Wolfgang Högler[3], Erik A. Imel[4], Annemieke Boot[5], Agnès Linglart[6], Raja Padidela[7], William Van't Hoff[8], Meng Mao[9], Alison Skrinar[9], Mary Scott Roberts[9], Javier San Martin[9], Anthony A. Portale[10]. [1]Shriners Hospitals for Children and Washington University School of Medicine, United States, [2]Yale School of Medicine, United States, [3]Johannes Kepler University Linz, Austria, [4]Indiana University School of Medicine, United States, [5]University of Groningen, Netherlands, [6]APHP Hôpital Bicêtre Paris Sud, France, [7]Royal Manchester Children's Hospital, United Kingdom, [8]Great Ormond Street Hospital, United Kingdom, [9]Ultragenyx Pharmaceutical Inc., United States, [10]University of California, San Francisco, United States

Disclosures: Michael P. Whyte, Ultragenyx Pharmaceutical Inc., Grant/Research Support

SUN-907 **Study on the molecular mechanism of Familial Paget's Disease of Bone with novel pathogenic gene ALS2 mutation**

*Hua Yue[1]. [1]Department 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 Bertels[1], Kirby Sherman[1], Alyssa Falck[2], Shannon Huggins[3], Cassandra Skenandore[3], Charles Long[3], JonPaul Elizondo[4], Harry Hogan[4], Jordan Ankerson[4], Michael Moreno[4], Sarah White[5], Larry Suva[6], Dana Gaddy[7]. [1]Veterinary Integrative Biosciences, Texas A&M University, United States, [2]Veterinary Integrative Biosciences, United States, [3]Veterinary Physiology and Pharmacology, Texas A&M University, United States, [4]Department of Mechanical Engineering, Texas A&M University, United States, [5]Department of Animal Sciences, Texas A&M University, United States, [6]Department of Veterinary Physiology and Pharmacology, Texas A&M University, United States, [7]Department 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 Desimone[1], Carolyn Macica[1], Steven Tommasini[2]. [1]Quinnipiac University, United States, [2]Yale 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 Gistelinck[1], MaryAnn Weis[1], Jyoti Rai[1], David R. Eyre[1], Brendan Lee[2]. [1]University of Washington, United States, [2]Baylor College of Medicine, United States

Disclosures: Charlotte Gistelinck, None

SUN-931 **Identification of a critical amino acid residue in ALK2 for the binding and inhibition by the anti-ALK2 blocking antibody**

*Takenobu Katagiri[1], Sho Tsukamoto[1], Mai Kuratani[1], Shinnosuke Tsuji[2], Kiyosumi Takaishi[2], Tomonori Kunikata[3], Kensuke Nakamura[4], Yoshiro Kawaguchi[4], Jun Hasegawa[4]. [1]Division of Pathophysiology, Research Center for Genomic Medicine, Saitama Medical University, Japan, [2]Specialty Medicine Laboratories I, Group I, R&D Division, Daiichi-Sankyo Co., Ltd., Japan, [3]Specialty Medicine Laboratories I, Group I, R&D Division, Daiichi-Sankyo Co., Ltd, Japan, [4]Modality 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 Legrand[1], Blandine Merle[1], Marjorie Millet [1], Martine Croset[1], Jean Charles Rousseau [1], Elisabeth Sornay-Rendu[1], Olivier Borel[1], Deborah Gensburger[2], Emmanuelle Vignot [2], Roland Chapurlat [3]. [1]INSERM UMR 1033, Université de Lyon, France, [2]Division of Rheumatology, Edouard Herriot University Hospital, France, [3]Division 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 Lv[1], Zhenlin Zhang[1], Chun Wang[1]. [1]Shanghai 6th People's hospital, China

Disclosures: Shanshan Lv, None

SUN-934 **Quantitative Increase in T Regulatory Cells Enhances Bone Remodeling In Osteogenesis Imperfecta**

*Meenal Mehrotra[1], Inhong Kang[1], Shilpak Chatterjee[1], Uday Baliga[1], Yongren Wu[1], Hai Yao[1], Shikhar Mehrotra[1]. [1]Medical 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 Nannuru[1], Johanna Jimenez[1], Susannah Brydges[1], Andrew Murphy[1], Aris Economides [1], Sarah Hatsell[1]. [1]Regeneron 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 Bukanov[1], Ryan J Russo[1], Benjamin Greene[1], Oxana Ibraghimov-Beskrovnaya[1], Yves Sabbagh[1], Katie Malley[2], Errin Roberts[2], Peter Piepenhagen[2], Sheila Cummings[2], Susan Ryan[2]. [1]Rare and Neurologic Diseases Research, Sanofi, United States, [2]Global 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. Tauer[1], Svetlana V. Komarova[2]. [1]McGill Univeristy, Faculty of Dentistry, Shriners Hospital for Children, Canada, [2]McGill University, Faculty of Dentistry, Shriners Hospital for Children, Canada

Disclosures: Josephine T. Tauer, None

SUN-938 **Tmem178 negatively regulates IL-1β production through inhibition of the NLRP3 inflammasome**

*Hui Yan[1], Sahil Mahajan[1], Roberta Faccio[1], Yael Alippe[2], Gabriel Mbalaviele[2]. [1]Department of Orthopaedic Surgery, Washington University in St Louis, United States, [2]Division 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 Voss[1], Maira Nóbrega[1], Leonardo Bandeira[1], Luiz Griz[1], Francisco Bandeira[1], Pedro Rocha-Filho[2]. [1]Division of Endocrinology & Diabetes, Agamenon Magalhaes Hospital, University of Pernambuco Medical School, Brazil, [2]Federal 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 Molina[1], Daniela Garcia Jimenez[2], Jesus Hairam Castro Maldonado[2]. [1]Centro de Investigación en Artritis y Osteoporosis, Mexico, [2]Facultad 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 Frisoli[1], Jairo Borges[2], Angela Paes[2], Antonio Carvalho[2], Julia Menezes[3]. [1]Cardio Geriatric Division- Federal University of Sao Paulo, Brazil, [2]Cardio Geriatric Division, Brazil, [3]Albert 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 Kim[1], Seoung Hun Lee[1], Jung-Min Koh[1]. [1]Division 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 Murthy[1], Gustavo Duque[1], Natasha A Grande de França[2], Guillaume T Duval[3], Sara Vogrin[4], Cedric Annweiler[5]. [1]1. Australian Institute for Musculoskeletal Science (AIMSS), The University of Melbourne and Western Health, St. Albans, Victoria, Australia., Australia, [2]3. Department of Nutrition, School of Public Health, University of São Paulo, São Paulo, Brazil., Brazil, [3]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, [4]. Australian Institute for Musculoskeletal Science (AIMSS), The University of Melbourne and Western Health, St. Albans, Victoria, Australia., Australia, [5]. 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. Wyers[1], Lisanne Vranken[1], Irma J.A. de Bruin[1], Robert Y. van der Velde[1], Heinrich M.J. Janzing[2], Sjoerd Kaarsemaker[3], Piet P.M. Geusens[4], Joop P.W. van den Bergh[5]. [1]Department of Internal Medicine, VieCuri Medical Center; NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University; Department of Internal Medicine, Maastricht University, Netherlands, [2]Department of Surgery, VieCuri Medical Center, Netherlands, [3]Department of Orthopedic Surgery, VieCuri Medical Center, Netherlands, [4]Department of Internal Medicine, Subdivision of Rheumatology, Maastricht UMC+; Hasselt University, Netherlands, [5]Department 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 Zhang[1], Zhenjian Zhuo[1], Bao-Ting Zhang[1], Daogang Guan[2], Aiping Lu[2], Ge Zhang[3]. [1]School of Chinese Medicine, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong, [2]Institute of Integrated Bioinformedicine and Translational Science, School of Chinese Medicine, Hong Kong Baptist University, Hong Kong, [3]Institute 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 Caraco[1], Arthur Santora[2], Gregory Burshtien[2], Hillel Galitzer[2], Ariel Rothner[2], Anke Hoppe[2], Phillip Schwartz[2], Sofia Ish-Shalom[2], Arthur Santora[3], Gregory Burshtien[3], Hillel Galitzer[3], Ariel Rothner[3], Anke Hoppe[3], Phillip Schwartz[3], Sofia Ish-Shalom[3], Yonit Marcus[4], Vanessa Roach[4], Auryan Szalat[5], Liana Tripto-Shkolnik[6], Elena Segal[7], Gloria Tsvetov[8], Merav Fraenkel[9], Nariman Saba Khazen[10]. [1]Hadassah Clinical, Israel, [2]Entera Bio Ltd., United States, [3]Entera Bio Ltd., Israel, [4]Tel Aviv Sourasky Medical Center, Israel, [5]Hadassah Medical Center, Israel, [6]Chaim Sheba Medical Center, Israel, [7]Rambam Medical Center, Israel, [8]Rabin Medical Center, Israel, [9]Soroka University Medical Center, Israel, [10]Lin 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 Indermaur[1], Philippe Zysset[1], Daniele Casari[2], Cinzia Peruzzi[2], Johann Michler[2], Jakob Schwiedrzik[2], Elizabeth Zimmermann[3], Frank Rauch[3], Bettina Willie[3]. [1]ARTORG Center, University of Bern, Switzerland, [2]EMPA Thun, Switzerland, [3]Shriners 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. Scheuren[1], Paul Vallaster[1], Gisela A. Kuhn[1], Angad Malhotra[1], Graeme R. Paul[1], Ralph Müller[1], Yoshitaka Kameo[2]. [1]Institute for Biomechanics, ETH Zurich, Switzerland, [2]Institute 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-Taube[1], Etienne Sochett[1]. [1]Hospital 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 Diaz[1], Vanina Lerena[1], Sabrina Paola Lucas[1], Beatriz Oliveri[2], Karina Danilowicz[3]. [1]Endocrinología, Hospital de Clínicas"José de San Martín"- Universidad de Buenos Aires, Argentina, [2]Lab. Enfermedades Metabólicas Oseas, Hospital de Clínicas INIGEM, UBA- CONICET, Argentina, [3]Endocrinologia, Hospital de Clinicas "Jose de San Martin"- Universidad de Buenos Aires, Argentina

Disclosures: Adriana Graciela Diaz, None

LB SUN-988 **Developing an in vitro model of CKD-MBD induced αKlotho suppression**
*Collin Young[1], Nicole LaFave[1], Kirby Tobin[1], Forrest Oberhelman[1], Julia Hum[1], Timothy Waite[2]. [1]Marian University College of Osteopathic Medicine, United States, [2]Marian 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 Noh[1], Seungyong Lee[1], Rhonda Prisby[1]. [1]The 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 Ihle[1], Meredith Provera[2], Desiree Straign[2], E. Erin Smith[2], Susan Edgerton[2], Adrie Van Bokhoven[2], M. Scott Lucia[2], Philip Owens[2]. [1]Cancer Biology Graduate Program at University of Colorado Anschutz Medical Campus, United States, [2]Department 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 Karuppagounder[1], William Pinamont[1], Michelle Jennette[1], Natalie Yoshioka[1], Gregory Young[1], Adeel Ahmad[1], Reyad Elbarbary[1], Fadia Kamal[1], Michael Zuscik[2]. [1]Penn State College of Medicine, United States, [2]University 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 Folick[1], Polly Fu[1], Anne Schafer[2], Dolores Shoback[3]. [1]Division of Endocrinology and Metabolism, University of California, San Francisco, United States, [2]Division of Endocrinology and Metabolism, University of California, San Francisco; Endocrine Research Unit, Department of Veterans Affairs Medical Center, San Francisco, United States, [3]Division 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 Kiel[1], Timothy Tsai[1], Marian Hannan[1], Thomas Travison[1], Ching-Ti Liu[2], Clifford Rosen[3], Sundeep Khosla[4], Mary Bouxsein[5]. [1]Hebrew SeniorLife, United States, [2]Boston University, United States, [3]Maine Medical Center Research Institute, United States, [4]Mayo Clinic, United States, [5]Beth 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 Yoo[1], Mi-kyoung Lim[2], Dong-hyuk Sheen[2]. [1]Cheongyang Heathcare center, Republic of Korea, [2]Eulji 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 Hagan[1], Meghan McGee-Lawrence[1], Kanglun Yu[2], Brooke Vinson[2], Jiali Zhu[2], Sarah Bass[2], Carlos Isales[2], Mark Hamrick[2], Paul McNeil[2]. [1]Augusta University, United States, [2]Augusta 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 Chukir[1], Azeez Farooki[1], Yi Liu[2]. [1]Memorial Sloan Kettering Cancer Center, United States, [2]Lahey 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 Xu[1], Qiang Zhang[1], Law Susan[1], Robert Pignolo[1], Haitao Wang[1]. [1]Mayo Clinic, United States

Disclosures: Fei Xu, None

MUSCULOSKELETAL PROGENITOR CELLS AND LINEAGE DETERMINATION

LB SUN-1018 Gremlin 1 positve skeletal stem cells play significant role in the skeleton formation and articular cartilage maintenance.

*Toghrul Jafarov[1], Siddhartha Mukherjee[2]. [1]Columbia University Irving Cancer Research Center, United States, [2]Columbia 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 Pagani[1], Charles Hwang[1], Simone Marini[1], Amanda Huber[1], Noelle Visser[1], Kaetlin Vasquez[1], Mohamed Garada[1], Yuji Mishina[1], Shaleish Agarwal[1], Jun Li[1], David Stepien[2], Michael Sorkin[2], Benjamin Levi[2], Shawn Loder[3], Aaron James[4]. [1]University of Michigan Medical School, United States, [2]University of Michigan, United States, [3]University of Pittsburgh Schools of the Health Sciences, United States, [4]The 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 Frasnelli[1], José Vitor Ribeiro Jordão[1], Maria Carolina Linjardi[1], Beatriz Babeto Balassoni[1], Victor Gustavo Balera Brito[1], Ayna E A Barreto[1], Sandra Helena Penha Oliveira[1], Vanessa S Lara[2], Carlos Ferreira Santos[3]. [1]São Paulo State University (UNESP), School of Dentistry, Department of Basic Science, Brazil, [2]University of São Paulo (USP), Bauru School of Dentistry, Department of Stomatology, Brazil, [3]University 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-Galarza[1], Julia Charles[1]. [1]Brigham 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 Soma[1], Mayu Morita[1], Ryotaro Iwasaki[1], Seiji Asoda[1], Hiromasa Kawana[1], Taneaki Nakagawa[1], Takeshi Miyamoto[2]. [1]Departmant of Dentistry and Oral Surgery, Keio University School of Medicine., Japan, [2]Departmant 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 Mbalaviele[1], Chun Wang[1]. [1]Washington 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 XLαs

*Qing He[1], Lauren Shumate[1], Jialiang Wang[1], Clarie Remillard[1], Qiuxia Cui[1], Murat Bastepe[1]. [1]Massachusetts 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 Prideaux[1], Kendra Holliger[1], Anika Shimonty[1], Lynda Bonewald[1]. [1]Indiana 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 Wölfel[1], Katharina Jähn[1], Petar Milovanovic[1], Michael Amling[1], Björn Busse[1], Grazyna Sroga[2], Deepak Vashishth[2], Birgit Wulff[3], Herbert Mushumba[3], Klaus Püschel[3]. [1]Department of Osteology and Biomechanics, University Medical Center Hamburg-Eppendorf, Germany, [2]Rensselear Polytechnic Institute, United States, [3]Department 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 Burghardt[1], Galateia Kazakia[1], Thomas Link[1], Sharmila Majumdar[1], Anthony Pagliaro[2], Julio Carballido-Gamio[3]. [1]Department of Radiology and Biomedical Imaging, University of California, San Francisco, United States, [2]Department of Bioengineering, University of Colorado Denver, United States, [3]Department 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-Zadeh[1], Xiao-Fang Wang[1], Minh Bui[2], Steven Boyd[3], Ego Seeman[4]. [1]Departments of Endocrinology and Medicine, Austin Health, The University of Melbourne, Australia, [2]Centre for Epidemiology and Biostatistics, Melbourne School of Population and Global Health, The University of Melbourne, Australia, [3]3McCaig Institute for Bone and Joint Health, University of Calgary, Canada, [4]Departments 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 Rouach [1], Iris Yaish [1], Mira Arbiv[1], Naftali Stern[1]. [1]Tel 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 Kim[1], Keunyoung Kim[1], Seon-Jang Kim[2], Eunheui Kim[3], Yunkyung Jeon[3], Wook Yi[4]. [1]Department of Nuclear Medicine and Biomedical Research Institute, Pusan National University Hospital, Busan, Republic of Korea, Republic of Korea, [2]Department 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, [3]Department of Internal Medicine and Biomedical Research Institute, Pusan National University Hospital, Busan, Republic of Korea, Republic of Korea, [4]Department 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 Ensrud[1], Susan Diem[1], Allyson Kats[2], Lisa Langsetmo[2], John Schousboe[3], Cynthia Boyd[4], Sarah Berry[5], Carolyn Crandall[6], Jane Cauley[7], Brent Taylor[8], Douglas Bauer[9], Katie Stone[10]. [1]University of Minnesota / Minneapolis VA Health Care System, United States, [2]University of Minnesota, United States, [3]HealthPartners Institute / University of Minnesota, United States, [4]Johns Hopkins University, United States, [5]Harvard University, United States, [6]University of California - Los Angeles, United States, [7]University of Pittsburgh, United States, [8]Minneapolis VA Health Care System / University of Minnesota, United States, [9]University of California - San Francisco, United States, [10]California 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 Morin[1], Elham Rahme[1], David Goltzman[1], Claudie Berger[2], Alexandra Papaioannou[3], Angela M Cheung[4], William D Leslie[5]. [1]McGill University, Canada, [2]Research Institute of the McGill University Health Centre, Canada, [3]McMaster University, Canada, [4]University of Toronto, Canada, [5]University 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 Iuliano[1], Shirley Poon[1], Judy Robbins[1], Xiaofang Wang[1], Marta Van Loan[2], Lars Rejnmark[3], Lisette De Groot[4], Tuan Nyugen[5], Ego Seeman[6]. [1]University of Melbourne / Austin Health, Australia, [2]University of California, United States, [3]Aarhus University, Denmark, [4]Wageningen University, Netherlands, [5]Garvan Institute of Medical Research, Australia, [6]University 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 Kuwabara[1], Naoko Tsugawa[2], Honami Ogasawara[2], Kei Mizuno[3], Yasuyoshi Watanabe[3], Kiyoshi Tanaka[4]. [1]Department of Clinical Nutrition, Faculty of Comprehensive Rehabilitation, Osaka Prefecture University, Japan, [2]Department of Health and Nutrition, Osaka Shoin Women's University, Japan, [3]RIKEN Compass to Healthy Life Research Complex Program, Japan, [4]Department 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 Lewis[1], Jonathan Hodgson[1], Wai Lim[2], Kun Zhu[2], Richard Prince[2], John Schousboe[3], Elizabeth Byrnes[4], Richard Woodman[5], Peter Thompson[6], Douglas Kiel[7]. [1]Edith Cowan University, Australia, [2]University of Western Australia, Australia, [3]Park Nicollet Osteoporosis Center and Institute for Research and Education, United States, [4]PathWest, Sir Charles Gairdner Hospital, Australia, [5]Flinders University, Australia, [6]Sir Charles Gairdner Hospital, Australia, [7]Hinda 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 Tomlinson[1], Lianne Tile[1], Angela M. Cheung[1], Derek Latremouille[2], Aliya Khan[3], Jonathan D. Adachi[3], Adrian Lau[4]. [1]University of Toronto / University Health Network, Canada, [2]University of Toronto, Canada, [3]McMaster University, Canada, [4]University 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 Swanson[1]. [1]University 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 Tokuhara[1], Talita Ventura[1], Joao Paulo Domezi[1], Adriano Pessoa[1], Gabriela Oliveira[1], Mariana Sanches[1], Mariana Santesso[1], Adriana Matos[1], Marilia Buzalaf[1], Rodrigo Oliveira[1], Flavia Oliveira[2], Vimal Veeriah[2], Jose Burgos Ponce[3]. [1]University of São Paulo, Brazil, [2]Sanford Burnham Prebys Medical Discovery Institute, United States, [3]University 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 Wein[1], Christian Castro[1], Christopher Janton[1], Deepak Balani[1], Henry Kronenberg[1], Nicolas Severe[2], David Scadden[2], Murat Karabacak[3], Beate Lanske[4]. [1]MGH Endocrine Unit, United States, [2]MGH Center for Regenerative Medicine, United States, [3]MGH Center for Engineering in Medicine, United States, [4]Radius 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 Lui[1], Youn Hee Jee[1], Jeffrey Baron[1], Adalbert Raimann [2], Gabriele Haeusler[2], Lijin Dong[3], Hironori Hojo [4], Paul Roschger[5], Nadja Fratzl-Zelman[5]. [1]Section on Growth and Development, NICHD, United States, [2]Department of Paediatrics and Adolescent Medicine, Medical University of Vienna, Austria, [3]Genetic Engineering Core, NEI, United States, [4]Center for Disease Biology and Integrative Medicine, The University of Tokyo, Japan, [5]Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUVA 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 Davis[1], Faris Albayya[1], Riadh Lobbardi[1], Michael Palmer[1], Cori Ann Sherwin[1], Sara Green[1], Faith Stevison[1], Sean Kim[1], Gordon Wilkie[1], Vivek Kadambi[1], Marion Dorsch[1], Andy Boral[1], Timothy LaBranche[1], Mark Hurtt[2], Robert Schwabb[3], Rachel Stewart[4], Morgan Lyon[4], Rachel Pauplis[4]. [1]Blueprint Medicines, United States, [2]Hurtt Consulting, United States, [3]Celerion, United States, [4]Invicro, 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 Deng[1], Bo Gao[2], Yu Chai[3], Hao Chen[3], Bo Hu[3], Xiao Wang[3], Shouan Zhu[3], Shuangfei Ni[3], Yong Cao[3], Mei Wan[3], Liu Yang[4], Zhuojing Luo[4], Xu Cao[5]. [1]Department of Orthopaedic Surgery, Department of Biomedical Engineering, The Johns Hopkins University School of Medicine, United States, [2]Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine; Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, United States, [3]Department of Orthopaedic Surgery, The Johns Hopkins University School of Medicine, United States, [4]Institute of Orthopaedic Surgery, Xijing Hospital, Fourth Military Medical University, China, [5]Department 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 Hagan[1], Kanglun Yu[1], Eric Stokes[1], Sarah Bass[1], Mohamed Awad[1], Mohammed Elsalanty[1], Paul McNeil[1], Rachel Roberts[2], Daniel Perrien[3], James Ervasti[4], Mark Hamrick[5], Meghan McGee-Lawrence[5]. [1]Augusta University, United States, [2]Augusta, United States, [3]Vanderbilt University, United States, [4]University of Minnesota, United States, [5]Medical 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 He[1], Zhifeng Yu[1]. [1]Shanghai 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 Parashar[1], Juliana Marulanda[1], Omar Al Rifai[2], Mathieu Ferron[3], Monzur Murshed[4]. [1]Faculty of Dentistry, McGill University, Canada, Canada, [2]University of Montreal, Canada, Canada, [3]Department of Biochemistry and Nuclear Medicine, University of Montreal, Canada, [4]Faculty 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 Root[1], Natalie Wee[1], Sanja Novak[1], Ivo Kalajzic[1], Brya Matthews[2]. [1]Department of Reconstructive Sciences, University of Connecticut Health Center, United States, [2]Department 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-3β induced NF-KB activation
*Akram Ayoub[1], Rong Duan[2], Jinbo Li[2], Lianping Xing[2], Zhenqiang Yao[2], Brendan Boyce[2]. [1]University of Rochester Medical Center , United States, [2]University 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 Biguetti[1], Ramez Mahamoud[1], Gustavo Simionato[1], André Oliva[1], Mariza Matsumoto[1], Isabela Custódio[2], Jesus Andreo[3], Marco Brotto[4], Walid Fakhouri[5], Chenglin Mo[6]. [1]School of Dentistry of Araçatuba, São Paulo State University, FOA/UNESP, Brazil, [2]School of Dentistry, Universidade Sagrado Coração, USC, Brazil, [3]School of Dentistry of Bauru, University of São Paulo, FOB/USP, Brazil, [4]Bone-Muscle Research Center, Nursing Program, University of Texas at Arlington, UTA, United States, [5]Center for Craniofacial Research, School of Dentistry, The University of Texas Health Science Center at Houston, United States, [6]University of Texas at Arlington, United States

Disclosures: Claudia Biguetti, None

1:20 pm FRI-236

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

*Jai Prakash[1], Fiona E McGuigan[1], Holger Luthman[1], Kristina E Akesson[1]. [1]Lund 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 Mo[1], Zhiying Wang[1], Marco Brotto[1], Kuan-Jui Su[2], Hongwen Deng[2], Lynda Bonewald[3]. [1]Bone-Muscle Research Center, College of Nursing and Health Innovation, the University of Texas-Arlington, United States, [2]Tulane Center of Bioinformatics and Genomics, Department of Global Biostatistics and Data Science, Tulane University, United States, [3]Musculoskeletal 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 Hsu[1], David Karasik[1], Douglas P. Kiel[1], Alexander Teumer[2], Katerina Trajanoska[3], Fernando Rivadeneira[3], On Behalf of GEFOS and CHARGE Consortia[4]. [1]Hinda and Arthur Marcus Institute for Aging Research, Hebrew SeniorLife, United States, [2]Institute of Community Medicine, University of Greifswald, Germany, [3]Department of Internal Medicine, Erasmus MC University, Netherlands, [4]Consortia, 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 Adams[1], Bonnie Li[1], Denison Ryan[1], Richard Dell[1], Erik Geiger[2], Dennis Black[2]. [1]Kaiser Permanente Southern California, United States, [2]University 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 Cheah[1], Matthew Koff[1], Ryan Breighner[1], Bin Lin[1], Mikas Grewal[1], Emily Stein[1], Conor Jones[2], Janice Havasy[2]. [1]Hospital for Special Surgery, United States, [2]Weill 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 Harding[1], Benjamin K Weeks[1], Lisa J Weis[2], Conor Lambert[3], Steven L Watson[3], Belinda R Beck[3]. [1]School of Allied Health Sciences, Griffith University, Australia, [2]The Bone Clinic, Australia, [3]School 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 Hartley[1], Jonathan P Folland[1], Katherine Brooke-Wavell[1], Robert Kerslake[2]. [1]NCSEM, SSEHS, Loughborough University, United Kingdom, [2]Nottingham 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. Lee[1], Namki Hong[2], Yumie Rhee[2], Sundeep Khosla[3], Tony M. Keaveny[4]. [1]O.N. Diagnostics, United States, [2]Yonsei University College of Medicine, Republic of Korea, [3]Mayo Clinic, United States, [4]University 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 Koromani[1], Katerina Trajanoska[1], Ling Oei[1], Carola Zillikens[1], Gabriel Krestin[1], Andre Uitterlinden[1], Edwin Oei[1], Fernando Rivadeneira[1], Enisa Shevroja[2]. [1]Erasmus MC, Netherlands, [2]Lausanne 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 Jepsen[1], Carrie Karvonen-Gutierrez[1], Sioban Harlow[1], John Randolph[1], Gregory Clines[1], Michelle Hood[1], Michael Elliott[1], Kathy Peters[2], Stephanie Harrison[2], Peggy Cawthon[2], Jane Cauley[3], Gail Greendale[4], Arun Karlamangla[4], Eric Orwoll[5]. [1]University of Michigan, United States, [2]California Pacific Medical Center Research Institute, United States, [3]University of Pittsburgh, United States, [4]University of California, Los Angeles, United States, [5]Oregon 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 Leslie[1], Lisa Lix[1], John Schousboe[2], Suzanne Morin[3], Patrick Martineau[4], Helena Johansson [5], John Kanis[5], Eugene McCloskey[6], Nicholas Harvey[7]. [1]University of Manitoba, Winnipeg, Canada, Canada, [2]Park Nicollet Clinic & HealthPartners Institute, Minneapolis, US; University of Minnesota, Minneapolis, US, United States, [3]McGill University, Montreal, Canada, Canada, [4]University of Manitoba, Winnipeg, Canada; Harvard Medical School, Boston, US, Canada, [5]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK; Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, United Kingdom, [6]Centre for Metabolic Bone Diseases, University of Sheffield Medical School, UK, United Kingdom, [7]MRC 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 Schousboe[1], Suzanne Morin[2], Patrick Martineau[3], Lisa Lix[4], William Leslie[4]. [1]Park Nicollet Clinic and HealthPartners Institute, United States, [2]Research Institute of the McGill University Health Centre, Canada, [3]University of Manitoba and Harvard University, Canada, [4]University 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 Schousboe [1], Lisa Lix[2], William Leslie[2], Suzanne Morin[3]. [1]Park Nicollet Clinic and HealthPartners Institute, United States, [2]University of Manitoba, Canada, [3]Research 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-Daghri[1], Kaiser Wani[1], Sobhy Yakout[1], Mohammed Ghouse Ahmed Ansari[1], Shaun Sabico[1], Syed Danish Hussain[1], Majed Alokail[1], Eman Sheshah[2], Naji Aljohani[3], Yousef Al-Saleh[4], Jean-Yves Reginster[5]. [1]King Saud University, Saudi Arabia, [2]King Salman bin Abdulaziz Hospital, Saudi Arabia, [3]King Fahad Medical City, Saudi Arabia, [4]King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia, [5]Liege 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 Billington[1], Lauren Burt[1], Steven Boyd[1], David Hanley[1]. [1]University 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. Karpf[1], Sanchita Mourya[2], Denka Markova[2], Zhengning Lin[2], Eshwari Kovoor[2], Jonathan A. Leff[2]. [1]Ascendis Pharma & Stanford University School of Medicine, United States, [2]Ascendis 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 Lee[1], Davaatseren Munkhtugs[1], Sihoon Lee[1], Song Vogue Ahn[2], Yong Jun Choi[3], Erin Bove-Fenderson[4], Michael Mannstadt[5]. [1]Laboratory of Genomics and Translational Medicine, Gachon University College of Medicine, Republic of Korea, [2]Department of Health Convergence, Ewha Womans University, Republic of Korea, [3]Department of Endocrinology and Metabolism, Ajou University School of Medicine, Republic of Korea, [4]Endocrine Unit, Massachusetts General Hospital, United States, [5]Endocrine 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 Perez[1], Ariela Verónica Kitaigrodsky[1], Maria Diehl[1], Guillermo Rosa-Diez[1], Marcelo Fernando Figari[1], Andrea Elina Kozak[1], Luisa Carmen Plantalech[1]. [1]Hospital 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 Perez[1], Diogo Domiciano[1], Rosa Pereira[1], Vanda Jorgetti[2]. [1]Bone Laboratory Metabolism, Rheumatology Division, Hospital das Clinicas HCFMUSP, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, Brazil (BR), Brazil, [2]Nephrology 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 Yang[1], Hongyan Zhao[2], Shouyue Sun[2], Jianmin Liu[2]. [1]Department of Endocrine and Metabolic Diseases, Rui-jin Hospital, Shanghai Jiao-tong University School of Medicine, China, [2]Department 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 Bermudez[1], R Dana Carpenter[1], Rebecca M Foright[2], David M Presby[2], Ginger C Johnson[2], Janine A Higgins[2], Matthew R Jackman[2], Julie A Houck[2], Paul S MacLean[2], Vanessa D Sherk[2]. [1]University of Colorado Denver, United States, [2]University 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. Bevers[1], Anne M. Daniëls[2], Caroline E. Wyers[3], Bert van Rietbergen[4], Piet P.M.M. Geusens[5], Sjoerd Kaarsemaker[6], Heinrich M.J. Janzing[7], Pascal F.W. Hannemann[8], Martijn Poeze[9], Joop P.W. van den Bergh[10]. [1]Department of Biomedical Engineering, Eindhoven University of Technology, Netherlands, [2]Department of Surgery, VieCuri Medical Centre; NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University, Netherlands, [3]Department 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, [4]Department of Biomedical Engineering, Eindhoven University of Technology; Department of Orthopaedic Surgery, Research School CAPHRI, Maastricht University Medical Centre, Netherlands, [5]Department of Internal Medicine, Maastricht University Medical Centre; Faculty of Medicine, Hasselt University, Netherlands, [6]Department of Orthopaedic Surgery, VieCuri Medical Centre, Netherlands, [7]Department of Surgery, VieCuri Medical Centre, Netherlands, [8]Department of Surgery and Trauma Surgery, Maastricht University Medical Centre, Netherlands, [9]NUTRIM School for Nutrition and Translational Research in Metabolism, Maastricht University; Department of Surgery and Trauma Surgery, Maastricht University Medical Centre, Netherlands, [10]Department 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 Bigelow[1], Daniella Patton[1], Antonio Ciarelli[1], Robert Goulet[1], Stephen Schlecht[1], Carrie Karvonen-Gutierrez[1], Siobán Harlow[1], David Kohn[1], Karl Jepsen[1], Todd Bredbenner[2]. [1]University of Michigan, United States, [2]University of Colorado Colorado Springs, United States

Disclosures: Erin Bigelow, None

Posters

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 Chandran[1], Nithin Manohar Rayadu[2], D Anitha[2], Sasirekha Duraisamy[2], Karupppasamy Subburaj[2], Butch Magsombol[3], David Ng Chee Eng[3]. [1]Osteoporosis and Bone Metabolism Unit, Department of Endocrinology, Singapore General Hospital, Singapore, [2]Engineering Product Development Pillar, Singapore University of Technology and Design, Singapore, [3]Department 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 Damrath[1], Alycia Berman[1], Joseph Wallace[2]. [1]Purdue University, United States, [2]Indiana 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 Edwards[1], Lindsay L. Loundagin[2], Ifaz T. Haider[2]. [1]University of Calgary, Canada, [2]University Of Calgary, Canada

Disclosures: W. Brent Edwards, None

MON-63 **Attenuation of visible and near-infrared light signals in murine cortical bone**

*Lennart Martin Bittermann[1], Graeme Campbell[1], Claus-Christian Glueer[1], Angelika Schmalzl[2]. [1]Section Biomedical Imaging, Molecular Imaging North Competence Center (MOIN CC), Department of Radiology and Neuroradiology, University Hospital Schleswig Holstein (UKSH), Kiel University, Germany, Germany, [2]Department 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 Hoffseth[1], Henry Yang[2]. [1]LSU Department of Biological Engineering, United States, [2]UC 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 Khoo[1], Keenan Brown[2], Joshua Lewis[3], Richard Prince[4]. [1]Sir Charles Gairdner Hospital, Australia, [2]Mindways Software, United States, [3]Edith Cowan University, Australia, [4]University 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 White[1], Diane Krueger[1], Neil Binkley[1], Enisa Shevroja[2], Olivier Lamy[2], Elena Gonzalez Rodriguez[2], Francois De Guio[3], Franck Michelet[3], Didier Hans[4]. [1]University of Wisconsin Osteoporosis Research Program, United States, [2]Center of Bone Diseases, Bone and Joint Department, Lausanne University Hospital, Switzerland, [3]Research & Development Department, Medimaps, France, [4]Center 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 Mastrandrea[1], Laura Peuriere[1], Marie-Thérèse Linossier[1], Laurence Vico[1], Marie-Hélène Lafage-Proust[1], Natalia Maria Zapata-Linares[2], Xavier Houard[2]. [1]INSERM U1059-Universite De Lyon, France, [2]Centre 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 Pedroni[1], Maria Stella Moreira[1], Natacha Kalline[1], Samantha Cavalcanti[1], Maria Cristina Deboni[1], Marcia Marques[1]. [1]University 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 Rezaee[1], Tianna Edwards[1], Richard Bender[1], Lamya Karim[1], Mary Bouxsein[2]. [1]Department of Bioengineering, University of Massachusetts Dartmouth, Dartmouth, MA, United States, [2]Center 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 Skingle[1], Ken Poole[1], Hiroshige Sano[2], Tom Turmezei[3]. [1]University of Cambridge, United Kingdom, [2]Sado Genreal Hospital, Niigata, Japan, Japan, [3]Norfolk 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 Whittier[1], Sarah Manske[1], Emma Billington[1], Richard Walker[1], Lauren Burt[1], David Hanley[1], Steven Boyd[1], Prism Schneider[2]. [1]McCaig Institute for Bone and Joint Health, Cumming School of Medicine, University of Calgary, Canada, [2]McCaig 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 Zheng[1], Yulong Zhang[1], Emily Berthiaume[1], Xinli Zhang[1], Adam Stieg[1], Benjamin Wu[1], Kang Ting[1], Chia Soo[1]. [1]University of California Los Angeles, United States

Disclosures: Zhong Zheng, UCLA, Other Financial or Material Support, Musculoskeletal Translplant 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 Manousaki[1], Vince Forgetta[1], Brent Richards[1], Anders Kämpe[2], Riikka Makitie[3], Ghalib Bardai[4], Frank Rauch[4], Alexandre Belisle[5], Rui Li[5], Outi Makitie[6]. [1]Lady Davis Institute for Medical Research, McGill University, Canada, [2]Department of Molecular Medicine and Surgery, Karolinska Institutet, Sweden, [3]4Division of Endocrinology, Children's Hospital, Helsinki University Hospital and Research Program for Clinical and Molecular Metabolism, University of Helsink, Finland, [4]Shriners Hospitals for Children, Canada, [5]McGill Genome Center, Canada, [6]Division 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 Mitchell[1], Taisha Joseph[1], Signe Caksa[1], Mary Bouxsein[1], Madhu Misra[1]. [1]Massachusetts 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 Su[1], Christina Mundy[1], Sumei Lu[1], James Pippin[1], Andrew Wells[1], Alexandre Arkader[1], Diana Cousminer[1], Maurizio Pacifici[1], Struan Grant[1]. [1]Children 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 Bikle[1], Scott Munson[1], Wenhan Chang[1], Yongmei Wang[1]. [1]University 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 Bragdon[1], William Moore[1], Yu Liu[1], Amanda Molinelli[1], Louis Gerstenfeld[1]. [1]Boston 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 Daniel[1], Adam J Ferrari[1], Jessica H Nelson[1], Kevin McAndrews[1], Meloney Cregor[1], Ziad Ghazzawi[1], William R Thompson[1], Carmella Evans-Molina[1], Teresita Bellido[1], Jesus Delgado-Calle[1]. [1]Indiana 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 Nocciolino[1], Sergio Luscher[1], Leandro Mackler[1], Jose Luis Ferretti[1], Gustavo Roberto Cointry[1], Ricardo Francisco Capozza[1], Alex Ireland[2], Joern Rittweger[3], Nicolas Pilot[4], Leandro Pisani[4]. [1]Center for P-Ca Metabolism Studies (CEMFoC), Natl Univ of Rosario and Arg NRC (CONICET), Argentina, [2]School of Healthcare Science, Manchester Metropolitan University, United Kingdom, [3]Institute of Aerospace Medicine, German Aerospace Center (DLR); Department of Pediatrics and Adolescent Medicine, University of Cologne, Germany, [4]Center of Musculoskeletal Biomechanical Studies (CEBOM), University of Gran Rosario (UGR), Argentina

Disclosures: Laura Marcela Nocciolino, None

MON-115 **Novel Macrophage Subpopulations at Tendon-Bone Interface after ACL Repair Surgery in Mice**

*Lionel Ivashkiv[1], Kyung Parkmin[1], Ye Ji Lee[1], Takayuki Fujii[1], Seyeon Bae[1], Sehwan Mun[1], Kaichi Kaneko[1], Haemin Kim[1], Sang Park[1], Scott Rodeo[1], Camila Carballo[1], Susumu Wada[1]. [1]Hospital 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 Gremminger[1], Elijah Miranda[1], Laura C Schulz[2], R. Scott Rector [3], Charlotte L Phillips[4]. [1]Department of Biochemistry, University of Missouri, Columbia, MO 65211, United States, [2]Department of Obstertrics, Gynecology, and Women's Health, University of Missouri, United States, [3]Departments of Nutrition and Exercise Physiology and Medicine-GI, University of Missouri; Harry S Truman Memorial VA Hospital, United States, [4]Departments 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-Schrader[1], Joy Kirkpatrick[2], Amy Warner[3], Brooks Swanson[3], Matthew Carson[3], Caroline Westwater[3], Sakamuri Reddy[3], Chad Novince[3]. [1]Medical University of South Carolina, United States, [2]Medical University of South Carolina, United States, [3]Medical University of South Carolina, United States

Disclosures: Jessica Hathaway-Schrader, None

MON-118 **RANKL-signaling stimulates growth of testicular germ cell tumors**

*Christine Hjorth Andreassen[1], Mette Lorenzen[1], Martin Blomberg Jensen[1], John Erik Nielsen[2], Anders Juul[2]. [1]Group 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, [2]University 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 Mesfin[1], Ayodeji jubril[2], Roman Eliseev[2]. [1]University of Rochester Center for Musculoskeletal Research, United States, [2]Center 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 Lin[1], Jie Shen[1], Rui Gong[1], *Xu Lin[2], Jie Shen[2], Rui Gong[2], Jonathan Greenbaum[3], Kuan-Jui Su[3], Hong-Wen Deng[3], Hong-Mei Xiao[4]. [1]Department of Endocrinology and Metabolism, The Third Affiliated Hospital of Southern Medical University, Guangzhou, China, United States, [2]Department of Endocrinology and Metabolism, The Third Affiliated Hospital of Southern Medical University, Guangzhou, China, China, [3]Center for Bioinformatics and Genomics, School of Public Health and Tropical Medicine, Tulane University, New Orleans, LA, USA, United States, [4]School 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 Sosa[1], YingZhen Niu[1], Kathleen Turjane[1], Kevin Staats[1], Vincentius Suhardi[1], Alberto Carli[1], Mathias Bostrom[1], Yang Xu[1], Vincent Fischetti[2]. [1]Hospital for Special Surgery, United States, [2]Rockefeller 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 Turcotte[1], Sonja Kukuljan[2], Claudia Gagnon[3], Caryl Nowson[4], Robin M Daly[4]. [1]CHU de Québec-Université Laval, Canada, [2]Institute for Physical Activity and Nutrition, Deakin University, Australia, [3]CHU de Québec - Université Laval, Canada, [4]Institute 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 Xiong[1], Hao-han Guo[1], Jin-Xiu Pan[1], Lin Mei[1], Wen-Cheng Xiong[1], Kai Zhao[2], Yu Cao[2], Xiao Yang[2]. [1]Department of Neuroscience, Case Western Reserve University, United States, [2]Augusta 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**

*Qinggang Dai[1], Siru Zhou[1], Yiling Yang[1], Xinyi Gong[1], Peng Zhang[1], Lingyong Jiang[1]. [1]Ninth 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 Elmansi[1], Dmitry Knodrikov[1], Nada Eisa[1], William Hill[1], Brian Volkman[2], Carlos Isales[3], Sadanand Fulzele[3], Mark Hamrick[4], Meghan McGee-Lawrence[4], Jie Chen[5]. [1]Department of Pathology and Laboratory Medicine, Medical University of South Carolina, United States, [2]Biochemistry Department, Medical College of Wisconsin, Milwaukee, WI 53226, United States, [3]Department of Orthopaedic Surgery, Medical College of Georgia, Augusta University, Augusta, GA 30912, United States, [4]Cellular Biology and Anatomy, Medical College of Georgia, Augusta University, Augusta, GA 30912, United States, [5]Department of Population Health Science: Biostats & Data Science, Medical College of Georgia, United States

Disclosures: Ahmed Elmansi, None

MON-134 **Sclerostin Antibody Treatment Rescues Negative Effects of Rosiglitazone on the Bone Marrow Niche**

*Michaela Reagan[1], Heather Fairfield[1], Carolyne Falank[1], Samantha Costa[1], Anastasia D'Amico[1], Mariah Farrell[1], Dominic Bowers[2]. [1]Maine Medical Center Research Institute, United States, [2]Mereo 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-Rodriguez[1], Florian Drescher[1], Samanta Jiménez-Flores[1], Patricia Juarez[1], Pierrick Fournier[1], Felipe Olvera-Rodriguez[2]. [1]Biomedical Innovation Department, CICESE, Mexico, [2]Instituto de Biotecnología, UNAM, Mexico

Disclosures: Danna Arellano-Rodriguez, None

MON-162 **Human Breast Cancer Cell Lines Inhibit Osteoblast Mineralization**

*Rajiv Kumar[1], Taylor Berent[1]. [1]Mayo 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 Henry[1], Katrina Clines[1], Mark Cooks[1], Charlotte Cialek[1], Marian Esvelt[1], Gregory Clines[1]. [1]University 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 Dou[1], Shiwu Dong[2]. [1]Johns Hopkins University, Department of Orthopedic Surgery, United States, [2]Third Military Medical University, China

Disclosures: Ce Dou, None

MON-165 **Unlocking Molecular Signatures of Osteosarcoma Subtypes using Trp53 mutated mouse models**

*Fang Fang[1], Haydee M. Torres[1], Ashley Vancleave[1], Jianning Tao[1]. [1]Sanford Research, United States

Disclosures: Fang Fang, None

MON-166 **The driver landscape of osteosarcoma metastasis**

*Darrell Green[1], William Fraser[1]. [1]University of East Anglia, United Kingdom

Disclosures: Darrell Green, None

MON-167 **Syngeneic bone metastasis models for testing efficacy of novel therapies**
*Tiina E Kähkönen[1], Mari I Suominen[1], Jenni HE Mäki-Jouppila[1], Jussi M Halleen[1], Jenni Bernoulli[1], Arne Scholz[2]. [1]Pharmatest Services, Finland, [2]Bayer AG, Germany
Disclosures: Tiina E Kähkönen, None

MON-168 **Targeting Gli2 to Circumvent Anti-EGFR Therapeutic Resistance in Oral Squamous Cell Carcinoma**
*Kristin Kwakwa[1], Shellese Cannonier[1], Joseph Vanderburgh[1], Mathilde Granke[1], Kennady Bullock[1], Jeffry Nyman[1], Craig Duvall[1], Scott Guelcher[1], Julie Rhoades (Sterling)[1]. [1]Vanderbilt 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 Li[1], Xiaojin Guo[1], Lei Zhang[1], Jin Cao[1], Xiao Zhang[1], Zhiyu Wang[1]. [1]The 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 Pin[1], Lynda F. Bonewald[2], Andrea Bonetto[3]. [1]Department of Anatomy and Cell Biology, Indiana University School of Medicine, United States, [2]Department of Anatomy and Cell Biology, Indiana Center for Musculoskeletal Health, Indiana University School of Medicine, Indianapolis, IN, United States, [3]Department 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 Tsuzuki[1], Sun Park[1], Matthew Eber[1], Brooke Widner[1], Fang-Chi Hsu[1], Christopher Peters [1], Yusuke Shiozawa[1], Yuko Kamata[2], Takahiro Kimura[2], Daniella Bianchi-Frias[3], Ilsa Coleman[3], Peter Nelson[3]. [1]Wake Forest University Health Sciences, United States, [2]The Jikei University School of Medicine, Japan, [3]Fred Hutchinson Cancer Research Center, United States
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MON-172 **MGUS plasma cells express senescence markers and targeting senescence may alleviate frailty in a mouse model of MGUS**
*Megan Weivoda[1], Ming Xu[2], Christine Hachfeld[3], Tamar Tchkonia[3], James Kirkland[3], Matthew Drake[3], Claire Edwards[4]. [1]University of Michigan, United States, [2]University of Connecticut, United States, [3]Mayo Clinic, United States, [4]University 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**
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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 Baedyananda[1], Weirong Xing[1], Jasmine Lau[1], Sheila Pouteymoor[1], Subburaman Mohan[2]. [1]Jerry L Pettis VA Medical Center, United States, [2]Jerry 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 Gallo[1], Nick Kwon[1], Caitlin Marks[1], Jessica Hu[2], Jonathan Carter[2], Anthony Mirando[3], Matthew Hilton[3], Jonathan Riboh[3]. [1]Duke University School of Medicine, United States, [2]Duke Department of Orthopaedic Surgery, United States, [3]Duke 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, CDC5L.**

*Go Jokoji[1], Ichiro Kawamura[1], Yuhei Yahiro[1], Hiroyuki Tominaga[1], Noboru Taniguchi[1], Shingo Maeda[2], Eiji Taketomi[3], Shiro Ikegawa[4], Masahiro Nakajima[4]. [1]Department of Orthopaedics, Kagoshima University, Japan, [2]Department of Medical Joint Materials, Kagoshima University, Japan, [3]Department of Orthopaedic Surgery, Japanese Red Cross Kagoshima Hospital, Japan, [4]Laboratory 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 Li[1], Yunfeng Lin[1], Lei Sui[2]. [1]State Key Laboratory of Oral Diseases, National Clinical Research Center for Oral Diseases, West China Hospital of Stomatology, Sichuan University., China, [2]Department 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. Weaver[1], Elizabeth L. Zars[1], Jennifer J. Westendorf[1]. [1]Mayo 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**

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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 Yosuke [1], Kobayashi Shu[1], Harato Kengo[1], Miyamoto Takeshi[1], Niki Yasuo[1], Matsumoto Morio[1], Nakamura Masaya[1]. [1]Department 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**

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Disclosures: Oliver Chaudry, None

MON-231 **OPG Expression in Human Diabetic Bone Tissue and Cell Culture**

*Roberto Fajardo[1], Jesus Hernandez[2], Ammar Saigal[3], Todd Bredbenner[4]. [1]University of the Incarnate Word School of Osteopathic Medicine, United States, [2]University of Texas Health Science Center at San Antonio, United States, [3]Weill Cornell Medical School, United States, [4]University of Colorado-Colorado Springs, United States

Disclosures: Roberto Fajardo, None

MON-232 **The Phosphate Hypothesis: Beta Oxidation, a Principal Component of Metabolism**

*Robert S Fredericks[1]. [1]Endocrine-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 Le[1], Yosta Vegting[1], Clifford Rosen[1], John Martin[2], Roland Baron[3]. [1]Maine Medical Center Research Institute, United States, [2]St. Vincent's Institute of Medical Research, Australia, [3]Harvard School of Dental Medicine, United States

Disclosures: Phuong Le, None

MON-234 **Bone-derived TGF-ß Impairs Glucose Metabolism and Insulin Release by Oxidation of RyR2 Ca2+Release Channel in Pancreatic ß-cells in the Setting of High Bone Turnover, Aging and High Fat Diet**

*Trupti Trivedi[1], Jenna Regan[2], Asma Bahrami[2], Jennymar Rojas[3], Steven Reiken[4], Sutha John[5], Sukanaya Suresh[5], Sreemala Murthy[5], Yun She[5], Gabriel Pagnotti[5], Sarah Tersey[6], Xu Cao[7], Andrew Marks[8], Carmella Evans-Molina[9], Khalid Mohammad[10], Theresa Guise[11]. [1]1Division of Endocrinology, Department of Medicine; Indiana University School of Medicine,Indianapolis,Indiana, United States, [2]Division of Endocrinology, Department of Medicine; Indiana University School of Medicine,Indianapolis,Indiana, United States, [3]Division of Endocrinology, Department of Medicine; Indiana University School of Medicine, Indianapolis, Indiana, United States, [4]Department of Physiology and Cellular Biophysics, Helen and Clyde Wu Center for Molecular Cardiology, College of Physicians and Surgeons, Columbia University, New York, United States, [5]Division of Endocrinology, Department of Medicine; Indiana University School of Medicine; Indianapolis, Indiana, United States, [6]Department of Pediatrics, Indiana University School of Medicine, Indianapolis, IN, United States, [7]Department of Orthopedic Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland, United States, [8]Department of Physiology and Cellular Biophysics, Helen and Clyde Wu Center for Molecular Cardiology, College ofPhysicians and Surgeons, Columbia University, New York, United States, [9]Division of Endocrinology, Department of Medicine; Indiana University School of Medicine;Indianapolis, Indiana;Department of Pediatrics, Indiana University School of Medicine, Indianapolis, IN, United States, [10]Division of Endocrinology, Department of Medicine; Indiana University School of Medicine; Indianapolis, Indiana, United States, [11]Division 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 Ridder[1], Eveline Boudin[1], Joe Ibrahim[1], Wim Van Hul[1], Geert Mortier[1], M. Carola Zilikens[2], Bram C.J. van der Eerden[2]. [1]Center of Medical Genetics, University and University Hospital of Antwerp, Belgium, [2]Division 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. Gafni[1], Maria Zhadina[1], Jamie Streit[1], Michael T. Collins[1], Chelsi L. Flippo[2], Michael Gottschalk[3], Dhaval Patel[4], Naris Nilubol[5]. [1]National Institute of Dental and Craniofacial Research, National Institutes of Health, United States, [2]Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, United States, [3]Rady Children's Hospital, University of California, San Diego, California, United States, [4]Department of Surgery, Medical College of Wisconsin, Milwaukee, Wisconsin, United States, [5]National Cancer Institute, National Institutes of Health, Bethesda, MD, United States

Disclosures: Rachel I. Gafni, None

MON-252 **FluoBoltTM-Periostin, a new Highly Sensitive Fluorescence Immunoassay for this Matricellular Protein based on Plasmonic Microtiter Plates**

*Gerhard Hawa [1], Teresa Jungwirth[1], Albert Missbichler[1]. [1]FIANOSTICS 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 Hsu[1], Hanfei Xu[2], Xiaoyu Zhang[2], Ching-Ti Liu[2], May Montasser[3], Mao Fu[3], Jeff O'Connell[3], James Perry[3], Shabnam Salimi[3], Elizabeth Streeten[3], Braxton D. Mitchell[3], Carolyn Crandall[4], Chris Delaney[5], Anne Justice[6], David Karasik[7], Robert Wallace[8], David M. Evans[9], Jonathan H. Tobias[10], Brent Richards[11], John Blangero[12], Kerri Wiggins[13], Rebecca Jackson[14], Douglas Kiel[15]. [1]Marcus Institute for Aging Research and Harvard Medical School, United States, [2]Boston University, School of Public Health, United States, [3]University of Maryland, United States, [4]University of California, Los Angeles, United States, [5]University of Washington, United States, [6]University of North Carolina, United States, [7]Marcus Institute for Aging Research, Hebrew SeniorLife, United States, [8]University of Iowa, United States, [9]University of Queensland Diamantina Institute, Australia, [10]Department of Clinical Science at North Bristol, University of Bristol, United Kingdom, [11]Lady Davis Institute, Jewish General Hospital, McGill University, Canada, [12]University of Texas Rio Grande Valley School of Medicine, United States, [13] University of Washington, United States, [14]Ohio State University Wexner Medical Center, United States, [15]Hebrew SeniroLife Marcus Institute for Aging Research and Harvard Medical School, United States

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MON-254 **Metabolomic signatures among men and women with and without osteoporosis: The Boston Puerto Rican Osteoporosis Study**

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MON-255 **Molecular Mechanisms of Beta Blocker Association with Increased Bone Mineral Density in Humans**

*Kathleen Nevola[1], Douglas Kiel[2], Katherine Motyl[3], Christine Lary[4]. [1]Tufts University, United States, [2]Harvard Medical School, United States, [3]Maine Medical Center Research Institute, United States, [4]Maine 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 Zhang[1]. [1]Peking 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 Lin[1], Ruei-Ming Chen[1]. [1]Taipei 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 Dixit[1], Masanobu Fujimoto [2], Andrew Dauber[2], Vivian Hwa[2], Isabelle Maystadt[3], Anita Rauch[4], Jean De Schepper[5], Gozde Yildirim[6], Yanjiao Zhang[6], Shoshana Yakar[6]. [1]Department of Basic Science and Craniofacial Biology, David B. Kaiser Dental Center, New York University college of dentistry, NY,USA, United States, [2]2Cincinnati Children's Hospital Medical Center, Department of Pediatrics, University of Cincinnati College of Medicine, Ohio, USA, United States, [3]3Center for Human Genetics, Institut de Pathologie et de Génétique, Gosselies, Belgium, Belgium, [4]5Institute of Medical Genetics, University of Zurich, Zurich-Schwerzenbach, Switzerland, Switzerland, [5]6Department of Paediatric Endocrinology, Ghent University Hospital, Ghent, Belgium, Belgium, [6]Department of Basic Science and Craniofacial Biology, David B. Kaiser Dental Center, New York university of dentistry, New York, USA, United States

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 Khatri[1], Thomas Dean[1], Thomas J Gardella[1], Brijesh Bhayana[2]. [1]Endocrine Unit, Massachusetts General Hospital, United States, [2]Dept. 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 Guo[1], Jinxiu Pan[1], Kevin Liu[1], Lin Mei[1], Wencheng Xiong[1], Lei Xiong[2], Bo Wang[3], Xiao Yang[4]. [1]Case Western Reserve University, United States, [2]Case Western Reserve Univesity, United States, [3]Huazhong University of Science and Technology, China, [4]Southern 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 He[1], Carole Le Henaff[1], Florante Ricarte[1], Victoria Kolupaeva[1], Nicola Partridge[1]. [1]New 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 Miller[1], Gozde Yildirim[1], Yanjiao Zhang[1], Manisha Dixit[1], Hisham Ellayen [1], Shoshana Yakar[1], Emi Shimizu [2]. [1]1, United States, [2]2, United States

Disclosures: Shira Miller, None

MON-282 **Thyroid Hormone Interacts with α2-adrenoceptor Signaling but not with β2-adrenoceptor Signaling in Osteoblasts**

*Bianca Neofiti-Papi[1], Lais Ferreira[1], Cecilia Gouveia[1]. [1]Department of Anatomy, University of Sao Paulo, Brazil

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MON-283 **Effect of PTH-stimulated bone resorptive activity is involved in IL-11/JAK/RANKL signaling pathway**

*Bin Wang[1], Yanmei Yang[1], Hong Lei[1]. [1]Thomas Jefferson University, United States

Disclosures: Bin Wang, None

MON-284 **Sex difference in rhBMP-2-mediated spinal posterolateral fusion in a rat mode**

*Chawon Yun[1], Jonathan Yamaguchi[1], Mitchell Hallman[1], David Ellenbogen[1], Allison Greene[1], Vivek Shah[1], Soyeon Jeong[1], Silvia Minardi[1], Wellington Hsu[1], Erin Hsu[1], Stuart Stock[2]. [1]Northwestern University Dept of Orthopaedic Surgery, United States, [2]Northwestern University, Dept of Cell and Molecular Biology, United States

Disclosures: Chawon Yun, None

Posters

MECHANOBIOLOGY

MON-301 **Interleukin-6 (IL6) Knockout Increases Bone Formation in Healing Stress Fractures**
*Brandon Coates[1], Jennifer McKenzie[1], Susumu Yoneda[1], Matthew Silva[1]. [1]Washington 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 Dhayer[1], Sylvie Peyroche[2], Norbert Laroche[2], Mireille Thomas-Paul[2], Marie-Thérèse Linossier[2], Laurence Vico[2], Alain Guignandon[2]. [1]INSERM U1059 Sainbiose, France, [2]Inserm U1059 - Laboratoire Sainbiose équipe LBTO, France
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MON-303 **Pb2+ Induced Differences in Bone Properties in Osteocalcin +/+ and -/- Female Mice**
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MON-305 **Gene Expression Response to Swim Training in Anosteocytic and Osteocytic Teleost Fish**
*Catherine Julien[1], Tobias Thiele[2], Lior Ofer[3], Ron Shahar[3], Paul Zaslansky[4], Bettina Willie[5]. [1]Research Centre, Shriners Hospital for Children, Canada, [2]Julius Wolff Institute, Charité - Universitätsmedizin, Germany, [3]Koret School of Veterinary Medicine, The Robert H. Smith Faculty of Agriculture, Food and Environmental Sciences, The Hebrew University of Jerusalem, Israel, [4]Department for Restorative and Preventive Dentistry, Charité-Universitaetsmedizin, Germany, [5]Research Centre, Shriners Hospital for Children ; Department of Pediatric Surgery, McGill University, Canada
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MON-306 **Development of a Fluid Shear Stress Streamer for Live Cell Video Microscopy**
*Travis McCumber[1], Edson deOliveira[1], Dane Wilson[1], Paul Deegan[1]. [1]University of Nebraska Medical Center, United States
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MON-307 **Perlecan deficiency impairs the intracellular calcium signaling in mechanically loaded bone and osteocytes**
*shaopeng pei[1], Sucharitha Parthasarathy[1], Ashutosh Parajuli[1], Jerahme Martinez[1], Mengxi Lv[1], Sida Jiang[1], Shuo Wei[1], X. Lucas Lu[1], Liyun Wang[1], Danielle Wu[2], Mary C. Farach-Carson[3], Catherine B. Kirn-Safran[4]. [1]University of Delaware, United States, [2]University of Texas Health Center, United States, [3]University of Texas Health Center, United States, [4]Widener University, United States
Disclosures: shaopeng pei, None

MON-308 **Load-induced Regulation of Bone Neuro-mechanosensory Components in Healthy and Diabetic Mice**
*Marcia Urban-Maldonado[1], Sylvia Suadicani[1], Mia Thi[1], Mitchell Schaffler[2]. [1]Albert Einstein College of Medicine, United States, [2]City 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 Behets[1], Ellen Neven[1], Patrick D'Haese[1]. [1]Laboratory 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 Cetani[1], Simona Borsari[2], Elena Pardi[2], Tommaso Biagioni[2], Brunella Bagattini[2], Federica Saponaro[2], Claudio Marcocci[2]. [1]Universital Hospital of Pisa, Endocrine Unit 2, Italy, [2]Department 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 Chande[1], Jonathan Fentene[1], Thomas Carpenter[1], Clemens Bergwitz[1], Ardy Van Helvoort [2], Steven Yannicelli[3]. [1]Yale school of medicine, United States, [2]Danone Nutricia Research, Nutricia Advanced Medical Nutrition, Netherlands, [3]Nutricia 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**

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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 Gluck[1], Kate Lines[1], Caroline Gorvin[1], Fadil Hannan[1], Rajesh Thakker[1], Asuka Inoue[2], Gerda Breitwieser[3]. [1]Academic Endocrine Unit, Oxford Centre for Diabetes, Endocrinology and Metabolism, Radcliffe Department of Medicine, United Kingdom, [2]Graduate School of Pharmaceutical Science, Tohoku University, Japan, [3] Geisinger 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 Nakamura[1], Yuya Kanehira[1], Hiromi Kimura-Suda[1], Ryota Oseto[2], Hideyo Horiuchi[2], Tomomi Masuya[2], Syota Furukawa[2], Dai Sato[3], Ryo Fujita[3], Masahiko Takahata[4]. [1]Graduate School of photonics, Chitose Institute of Science and Technology, Japan, [2]Faculty of Science and Technology, Chitose Institute of Science and Technology, Japan, [3]Department of Orthopedic Surgery, Hokkaido University Graduate School of Medicine, Japan, [4]Graduate 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 Kaur[1], Weirong Xing[1], Subburaman Mohan[1], Charles Rundle[1]. [1]J.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 Stone[1], Connie Weaver[1], Berdine Martin[1]. [1]Purdue 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 Yamazaki[1], Masanobu Kawai[1], Toshimi Michigami[1], Keiichi Ozono[2]. [1]Department of Bone and Mineral Research, Research Institute, Osaka Women's and Children's Hospital, Japan, [2]Department 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 Bolger[1], Erin Bigelow[2], Ferrous Ward[2], Karl Jepsen[2], Genevieve Romanowicz[3], David Kohn[3]. [1]Biomedical Engineering, University of Michigan, United States, [2]Department of Orthopedic Surgery, University of Michigan, United States, [3]Department of Biologic and Materials Sciences, University of Michigan, United States

Disclosures: Morgan Bolger, None

MON-348 **Characterization of Bone Microarchitecture and Facture Healing of Dystrophin-/-/ utrophin+/- mice during aging**

*Xueqin Gao[1], Xuying Sun[1], Yan Cui[1], Bing Wang[2], Johnny Huard[3]. [1]University of Texas Health Science Center at Houston, United States, [2]University of Pittsburgh, United States, [3]The 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 Kado[1], Jian Shen[1], David Wing[1], Sandra Rabat[1], Jeanne Nichols-Forward[1], Francisco Villarreal[1]. [1]University 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 Nakamura[1], Akihito Oya[1], Arihiko Kanaji[1], Takeshi Miyamoto[1], Morio Matsumoto[1], Masaya Nakamura[1]. [1]Department 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 Saedi[1], Shilpa Sharma[1], Lulu Chen[2], Ebrahim Bani Hassan[3], Kulmira Nurgali[4], Gustavo Duque [5]. [1]Department of Medicine – Western Health, The University of Melbourne, Australia, [2]Department of Anatomy, Histology and Embryology, Nanjing Medical University, Nanjing, China, [3]Department of Medicine – Western Health, The University of Melbourne, St. Albans, Australia, [4]Institute for Health and Sport, Victoria University, Melbourne, VIC, Australia, Australia, [5]Australian 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 Behera[1], Jessica Ison[1], Michael J. Voor[1], Suresh C Tyagi[1], Neetu Tyagi[1]. [1]University of Louisville, United States

Disclosures: Jyotirmaya Behera, None

MON-377 **Bioprinting Cells in Specific Arrangements Affects Bone Organoid Development**

*Dalton Chavez[1], Hsuan Lung[1], Steven Hansberry[1], Tamara Alliston[1], Edward Hsiao[1], Andrea S Rothmeier[2], Derek J Arndt[2], Kelsey N Retting[2], Stephen L Pentoney[2]. [1]University of California, San Francisco, United States, [2]Organovo, 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**

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Disclosures: Dexing Dai, None

MON-380 **Hepcidin modulates runx2a gene expression through Bmp2a/Smad signaling pathways to regulate biomineralization of bone in zebrafish**

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Disclosures: Yu Jiang, None

MON-381 **Functional validation of far upstream element binding protein 3 (FUBP3) in bone biology and osteoporosis susceptibility**

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MON-382 **Corticocancellous bone regeneration using minimally polarized functional units: Mechanical and structural evaluation in rabbit calvarial defect and spinal fusion models**

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MON-383 **The intracortical vascular network and its modulation within intracortical BMUs in humans**

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MON-384 **The Vitamin D- Vitamin D Receptor Axis Positively Regulates the Expression of Dystrobrevin Alpha During Murine Myogenic Differentiation**

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Disclosures: Maria Tsoumpra, None

MON-385 **Minocycline-Induced Dysbiosis of Gut Microbiota Alters Normal Osteoimmune Processes in Post-Pubertal Skeletal Development**
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Disclosures: Amy Warner, None

MUSCULOSKELETAL PROGENITOR CELLS AND LINEAGE DETERMINATION

MON-407 **The Loss of ephrinB1 in Osteoprogenitors Delays Fracture Repair**
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MON-408 **The COP biology study: Exploring the physiology of circulating osteoprogenitor cells**
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MON-409 **Temporal Transcriptomic Differences Define Sexual Dimorphism in Murine Post Natal Bone Homeostasis and Aging**
*Darlene Lu[1], Serkalem Demissie[1], Nina Horowitz[2], Amira Hussien[2], Beth Bragdon[2], Dana Daukss[2], Jack Page[2], Louis Gerstenfeld[2], Adam Gower[3], Mark Lenburg[3], Yuri Alekseyev[4], Jennifer Schlezinger[5], Elise Morgan[6]. [1]Department of Biostatistics, Boston University School of Public Health, United States, [2]Department of Orthopaedic Surgery, Boston University School of Medicine, United States, [3]Boston Univeristy School of Medicine, Computational Biomedicine, United States, [4]Boston University School of Medicine, CLIN-Pathology & Lab Medicine, United States, [5]Department of Environmental Health, Boston University School of Public Health, United States, [6]Department of Mechanical Engineering, Boston University, Boston University, United States
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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 Kanazawa[1], Naoko Adachi[1], Ken-ichiro Tanaka[1], Ayumu Takeno[1], Masakazu Notsu[1], Sayuri Tanaka[1], Toshitsugu Sugimoto[1]. [1]Shimane University Faculty of Medicine, Japan
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MON-411 **The effects of DNA nanomaterials on adipose-derived stem cells via DNA methylation**
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MON-412 **αSMA periosteal cells contribute to the increase in osteoblast numbers in response to load**
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Disclosures: Brya Matthews, None

MON-414 **Identification of Gli1 as a progenitor cell marker for meniscus injury repair**
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MON-415 **Hypoxia Reduces Hematopoietic Cells Present During Ex Vivo Expansion of Bone Marrow Stromal Cells and Improves Adenoviral Transduction**

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MON-416 **PIP5k1β controls bone homeostasis through modulating both osteoclast and osteoblast differentiation**

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OSTEOARTHRITIS AND OTHER JOINT DISORDERS

MON-433 **Large increase of BMP-7 in early axial spondyloarthritis**

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MON-434 **A Novel Regulatory Role of TRAPPC9 in In Inflammatory Chondrocytes and Osteoarthritis**

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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**

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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 Lim[1], Isabel Song[1], Patrick Beyrer[1], Jacquelyn Golden[1], Nan Fang[1], Josiah Somani[1], Charles Witmer[1], Andy Chen[1], Jae Lee[1], Ariella Schneider[1], Amanda Jankelovits[1], Sofia Miguez[1], Li Baoer[1], Poul Hoilund-Carlsen[1], Abass Alavi[2], Chamith Rajapakse[3]. [1]Hospital of the University of Pennsylvania, United States, [2]University Hospital of Pennsylvania, United States, [3]Hospital of the University of Pensylvania, United States

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MON-437 **Metformin, AMP**

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Disclosures: Mi-La Cho, None

MON-438 **The Regulatory Role of EGFR Signaling in Adult Cartilage Homeostasis and Osteoarthritis**

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Disclosures: Yulong Wei, None

MON-439 **Articular cartilage degradation associated with aberrant subchondral bone remodeling in patients with osteoporotic osteoarthritis**

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Disclosures: Linyang Chu, None

OSTEOBLASTS

MON-483 **Epigenetic Control of Osteoblast Differentiation by Chromobox 3 (Cbx3) Protein.**

*Leila Bagheri[1], Roman Thaler[1], Christopher R. Paradise[1], Sofia Jerez[1], Farzaneh Khani[1], Pengfei Zan[1], David R. Deyle[1], Todd A. Milbrandt[1], A. Noelle Larson[1], Amel Dudakovic[1], Andre J. van Wijnen[1], Mario Galindo[2]. [1]Mayo Clinic, United States, [2]University of Chile, Chile

Disclosures: Leila Bagheri, None

MON-484 **Kalirin regulates bone mass through effects on osteoblast activity, osteocyte morphology and intercellular communication.**

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Disclosures: Jung Min Hong, None

MON-485 **Dipeptidyl Peptidase 4 Effect and its Inhibition by Vildagliptin, on Osteogenic and Adipogenic Differentiation ff Human Mesenchymal Stem Cells**

*Antonio Casado-Díaz[1], Bárbara Torrecillas-Baena[2], Ángel Rodríguez-Ramos[3], Jesús González-Macías[4], José Manuel Quesada-Gómez[5]. [1]CIBER de Fragilidad y Envejecimiento Saludable (CIBERFES), Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC), Hospital Universitario Reina Sofía, Spain, [2]Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC), Hospital Universitario Reina Sofía, Spain, [3]Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC), Universidad de Córdoba, Spain, [4]Bone Metabolic Unit, Department of Internal Medicine, Hospital Universitario Marqués de Valdecilla-IDIVAL, Universidad de Cantabria, Spain, [5]Unidad 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

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MON-486 **Activation of Nox4 is not required for OVX-induced osteoblast senescence and bone loss in mice**

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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 Choudhary[1], Kenneth Maccormac[1], Erica Quinones[1], Carol Pilbeam[1]. [1]UConn Health, United States

Disclosures: Shilpa Choudhary, None

MON-488 **Conditional Activation of NF-κB Inducing Kinase (NIK) in the Osteolineage Enhances both Basal and Loading-Induced Bone Formation**

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Disclosures: Jennifer Davis, None

MON-489 **Acceleration of bone formation and suppression of bone resorption by soluble Frizzled2 receptor in mice**

*Hisashi Hasegawa[1], Emi Akizawa[1], Kengo Yamawaki[1], Yuji Yamazaki[1], Kenji Nagao[1], Kenta Nakajima[2], Yuki Tanbo[3], Miki Murai[3], Eri Taguchi[3]. [1]Nephrology Research Laboratories, Kyowa Kirin Co., Ltd., Japan, [2]Nephrology Research Laboratories, Kyowa Kirin Co., Ltd, Japan, [3]Research Core Function Laboratories, Kyowa Kirin Co., Ltd., Japan

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MON-490 **Deletion of the ER stress sensor Ire1a, but not Perk, in the osteoblast lineage decreases bone mass.**

*Christian Melendez-Suchi[1], Alexander Harb[1], Erin Mannen[1], Srividhya Iyer[1], Li Han[2], Aaron Warren[2], Maria Almeida[2]. [1]Department of Orthopaedic Surgery, University of Arkansas for Medical Sciences, Little Rock, Arkansas, United States, [2]Division of Endocrinology and Metabolism, Center for Osteoporosis and Metabolic Bone Diseases, Little Rock, Arkansas, United States

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MON-491 **Neuromedin-U (NMU) negatively regulates bone remodeling**

*Kelli Jestes[1], Krista Jackson[1], Yu-Tin Hsiao[1], Jonathan Lowery[1], Tara Zukosky[2], Maria Squire[2]. [1]Marian University College of Osteopathic Medicine, United States, [2]University of Scranton, United States

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MON-492 **Screening for Small Molecules That Bind to the BMPR1A: An In Silico Computational Analysis**

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MON-493 **The Vitamin C Dependent Epigenetic Regulator Hairless Controls Bone Development and Osteoblast Differentiation**

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MON-494 **Osteoblast-specific overexpression of Gαs and Gαq/11 leads to differential fracture healing responses**

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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 Li[1], Chaofei Yang[1], Zhihao Chen[1], Fan Zhao[1], Airong Qian[1], Jin Liu[2], Chao Liang[2], Daogang Guan[2], Shuaijian Ni[2], Qing Ren[2], Yuan Tang[2], Xiaohao Wu[2], Aiping Lu[2], Ge Zhang[2]. [1]Lab for Bone Metabolism, Key Lab for Space Biosciences and Biotechnology, School of Life Sciences, Northwestern Polytechnical University, Xi'an, Shaanxi 710072, China., China, [2]Law 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

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MON-496 **A long noncoding RNA regulatory mechanism of osteoblast proliferation**

*Mulati Mieradili[1], Hiroyuki Inose[2]. [1]First author, Japan, [2]author, 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 Niyibizi[1], Joyce Tombran-Tink[1], Feng Li[2]. [1]Penn State College of Medicine, United States, [2]University of Pittsburgh, United States

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MON-498 **Glutaminase is necessary and sufficient for preosteoblast differentiation and bone formation**

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Disclosures: Deepika Sharma, None

MON-499 **Glutamine uptake through Slc7a7/y+LAT1 is required for WNT induced osteoblast differentiation.**

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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 Smith[1], Roman Eliseev[1]. [1]University of Rochester, United States

Disclosures: Charles Smith, None

MON-501 **The effect of SNP rs2887571 (located in an estrogen receptorα binding site) on WNT5B function in bone**

*Sarocha Suthon[1], Susan Krum[1]. [1]UTHSC, United States

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MON-502 **Increased bone mass in female mice lacking mitofusin-2 (Mfn2) in osteoprogenitors**

*Allahdad Zarei[1], Anna Ballard[1], Deborah J. Veis[1]. [1]Division of Bone and Mineral Diseases, Washington University School of Medicine, United States

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MON-503 **Canonical Notch signaling intersects with Runx2 to promote human osteoblast differentiation**

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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**

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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.**

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MON-543 **The role of NLRP12 attenuating apical periodontitis development**

*Thaise Mayumi Taira[1], Léa Assed Bezerra Silva[1], Vilma Lima[2], Tarcília Aparecida Silva[3], Fernando Queiroz Cunha[4], Sandra Yasuyo Fukada[5]. [1]School of Dentistry of Ribeirão Preto, Brazil, [2]University of Ceará, Brazil, [3]Federal University of Minas Gerais, Brazil, [4]School of Medicine of Ribeirão Preto, Brazil, [5]School of Pharmaceutical Sciences of Ribeirão Preto, Brazil

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MON-544 **Acyloxyacyl Hydrolase (Aoah)-deficiency promotes osteoclast function and bone resorption**

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Disclosures: Dun Hong, None

MON-546 **MEP50 Suppresses Osteoclast Differentiation Which Effect is Released Through Direct Interaction with the Osteoclast Transcription Factor C/EBPα**

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MON-547 **USP34 Controls Osteoclast Differentiation by Regulating NF-κB Signaling**

*Qiwen Li[1], Mengyuan Wang[1], Yuchen Guo[1], Weiqing Liu[1], Quan Yuan[1]. [1]State Key Laboratory of Oral Diseases, West China Hospital of Stomatology, Sichuan University, China

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MON-548 **DAG levels differentially modulate osteoclast versus macrophage functions**

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MON-549 **Histochemical evidence of the presence of osteoclast-like cells in Rankl-/- mice**

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MON-550 **Proteolysis of M-CSF receptor promotes the differentiation of osteoclasts and arthritic bone erosion**

*Sehwan Mun[1], Seyeon Bae[1], Ye Ji Lee[1], Haemin Kim[1], Peter Park[1], Kaichi Kaneko[1], Takayuki Fujii[1], George Kalliolias[1], Chitra Dahia[1], Kyung-Hyun Park-Min[1]. [1]Hospital for Special Surgery, United States

Disclosures: Sehwan Mun, None

MON-551 **OFS, Novel Sentinel Imaging Probes for Early Diagnosis of Periodontitis**
*Hiroko Okawa[1], Shota Homma[1], Ichiro Nishimura[1], Akishige Hokugo[2], Lixin Wang[2], Daniel Khalil [2], Reza Jarrahy[2], Eric Richard [3], Yiying Zheng [3], Boris Kashemirov [3], Charles McKenna [3]. [1]Weintraub Center for Reconstructive Biotechnology, UCLA School of Dentistry, United States, [2]Regenerative Bioengineering and Repair Laboratory, Department of Surgery, David Geffen School of Medicine at UCLA, United States, [3]Department of Chemistry, Dornsife College of Letters, Arts and Sciences, USC, United States
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MON-552 **Lycorine protects mice from inflammatory bone loss via decreasing autophagy**
*Hyun-Jung Park[1], Hye-Seon Choi[1]. [1]University of Ulsan, Republic of Korea
Disclosures: Hyun-Jung Park, None

MON-553 **Staphylococcus aureus Infects Osteoclasts and Replicates Intracellularly**
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Disclosures: Philip Roper, None

MON-554 **ATF3/7 Transcriptionally Regulate the Expression of Cthrc1 in Osteoclasts**
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Disclosures: Yoshinori Naoe, None

MON-555 **Inhibitory action of IL-3 on osteoclast differentiation is conserved in mice, human and rats.**
*Vikrant Piprode[1], Kanupriya Singh[1], Anil Kumar[1], Snehal R. Joshi [1], Mohan R. Wani[1]. [1]National Centre for Cell Science, India
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MON-556 **Dpy30 regulates RANKL-mediated osteoclastogenesis**
*Yanfang Zhao[1], Zhaofei Li[1], Jannet Katz[1], Suzanne M Michalek[1], Ping Zhang[1], Xu Feng[2], Hao Jiang[3]. [1]University of Alabama at Birmingham, United States, [2]University of Alabama at Birmingham, United States, [3]University of Virginia, United States
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OSTEOCYTES

MON-579 **DOCK7 Deletion Diminishes Bone Material Properties and Osteocytes Dendrite Morphologies**
*Jennifer Coulombe[1], Virginia Ferguson[1], Eben Estell[2], Kathleen Becker[2], Vanessa Sherk[3], Clifford Rosen[4]. [1]Department of Mechanical Engineering, University of Colorado Boulder, United States, [2]Maine Medical Center Research Institute, United States, [3]Department Orthopedics, University of Colorado Anschutz Medical Campus, United States, [4]Tufts University School of Medicine, Maine Medical Center Research Institute, United States
Disclosures: Jennifer Coulombe, None

MON-580 **Connexin 43 Deficiency in Osteocytes Attenuates Cortical Bone Loss from Unloading**
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MON-581 **Osteocytic Connexin 43 Channels Affect Fracture Healing**
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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**
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Disclosures: Zheng-tao Lyu, None

MON-583 **Osteocyte Transcriptome Dysregulation in Two Mouse Models of Osteogenesis Imperfecta**

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MON-584 **Osteocyte Dysfunction Alters Systemic Bone Loss After Fracture**

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Disclosures: Benjamin Osipov, None

MON-585 **Osteoblast−to−Osteocyte Differentiation via Stacking Demineralized Bone Slices**

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Disclosures: Yongkuk Park, None

MON-586 **Examination of optimal culture condition of bone marrow cells on β-TCP / RCP hybrid scaffold.**

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MON-587 **Overlapping properties and functions of matrix vesicles and exosomes/extracellular vesicles in bone cells**

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MON-588 **Morphologic and Molecular Equivalence of Osteocytes in Biomimetic Hydrogels**

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OSTEOPOROSIS - ASSESSMENT

MON-617 **Treatments of Osteoporosis Increase Bone Material Strength index in Patients with low Bone Mass**

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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 Borgen[1], Lene Bergendahl Solberg[1], Cathrine Brunborg[1], Ida Lund[1], Cecilie Dahl[1], Tone Kristin Omsland[1], Lars Nordsletten[1], Erik Fink Eriksen[1], Åshild Bjornerem[2], Camilla Andreasen[2], Ann Kristin Hansen[2], May-Britt Stenbro[3], Lars Michael Hübschle[3], Anne Froholdt[3], Wender Figved[4], Ellen Margrete Apalset[5], Jan-Erik Gjertsen[5], Trude Basso[6], Jens-Meinhard Stutzer[7], Frede Frihagen[8]. [1]University of Oslo, Norway, [2]The Arctic University of Norway, Norway, [3]Drammen Hospital, Norway, [4]Bærum Hospital, Norway, [5]University of Bergen, Norway, [6]St Olavs Hospital, Norway, [7]Molde Hospital, Norway, [8]Oslo University Hospital, Norway

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MON-619 **Study on vitamin D deficiency in Japan: relationship to age, gender, and bone mineral density**

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MON-620 **3D-DXA measurements in lumbar spine in patients with vertebral fractures.**

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Disclosures: Silvana Di Gregorio, None

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 Dwyer[1], Lianne Tile[2], George Tomlinson[3], Angela Cheung[3], Sandya Pruthi[4], James Ingle[4], John Robbins[5], Paul Gross[6], Harriet Richardson[7]. [1]University of Toronto, Canada, [2]University Health Network, Canada, [3]University Health Network, Canada, [4]Mayo Clinic Rochester, United States, [5]University of California, United States, [6]Massachusetts General Hospital, United States, [7]Queens University, Canada

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MON-622 **Follicle-stimulating Hormone And Estradiol Are Associated With Bone Mineral Densities And Risk Of Fractures In Men With Type 2 Diabetes Mellitus**

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MON-623 **Orthopedic Bone Health Optimization**

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MON-624 **Association between osteoporosis-related vertebral fractures and DXA-derived 3D measurements at lumbar spine**

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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 Mizukami[1], Yasuyo Abe[1], Ritsu Tsujimoto[1], Kazuhiko Arima[1], Kiyoshi Aoyagi[1], Mitsuo Kanagae[2], Goji Chiba[2]. [1]Nagasaki University, Japan, [2]Nishi-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**

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Disclosures: Nicole Sagalla, T32DK007012, Grant/Research Support

MON-627 **Osteocalcin and its Forms Across the Adult Male Lifespan**

*Cassandra Smith[1], Itamar Levinger[1], Sarah Voisin[2], Danielle Hiam[2], Xu Yan[2], Gustavo Duque[3], Ahmed Al Saedi[4], Steven Phu[4], Tara Brennan-Speranza[5], Lewan Parker[6], Nir Eynon[7], David Scott[8], Lauren Blekkenhost[9], Joshua Lewis[10], Ego Seeman[11], Elizabeth Byrnes[12], Leon Flicker[13], Bu Yeap[14]. [1]Institute for Health and Sport (iHeS), Victoria University; Australian Institute for Musculoskeletal Science (AIMSS), Australia, [2]Institute for Health and Sport (iHeS), Victoria University, Australia, [3]Australian Institute for Musculoskeletal Science (AIMSS); University of Melbourne; Western Health, Australia, [4]Australian Institute for Musculoskeletal Science (AIMSS); University of Melbourne; Western Health, Australia, [5]Bosch Institute for Medical Research, University of Sydney, Australia, [6]Institute for Physical Activity and Nutrition (IPAN), Deakin University, Australia, [7]Institute for Health and Sport (iHeS), Victoria University; Murdoch Childrens Research Institute, Australia, [8]Monash University, Australia, [9]Edith Cowan University; University of Western Australia, Australia, [10]Edith Cowan University; University of Western Australia; Sydney Medical School, The University of Sydney, Australia, [11]University of Melbourne; Austin Health, Australia, [12] PathWest Laboratory Medicine, Queen Elizabeth II Medical Centre, Perth, Australia, Australia, [13]Medical School, University of Western Australia; 12.Western Australian Centre for Health & Ageing, University of Western Australia, Australia, [14]Medical School, University of Western Australia; 13.Department of Endocrinology and Diabetes, Fiona Stanley Hospital, Australia

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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.**

*Eisuke Tomatsu[1], Yasumasa Yoshino[1], Yohei Asada[1], Sahoko Sekiguchi-Ueda[1], Megumi Shibata[1], Takeshi Takayanagi[1], Atsushi suzuki[1], Tamotsu Sugita[2], Hiroshi Toyama[3], Renaud Winzenrieth[4]. [1]Department of Endocrinology and Metabolism, Fujita Health University, Japan, [2]Department of Radiology, Fujita Health University Hospital, Japan, [3]Department of Radiology, Fujita Health University, Toyoake, Aichi, Japan, Japan, [4]Galgo Medical S.L., Spain

Disclosures: Eisuke Tomatsu, None

MON-629 **Image validation of Spectral analysis filters on femoral bone with DECT: An Ex-vivo Study on Human Femur**

*Philippe Paul Wagner[1], Jean- Paul Roux[1], Francois Duboeuf[1], Roland Chapurlat[1], Helene Follet[1], Quentin Chuzel[2], Jean-Baptiste Pialat[2]. [1]INSERM UMR 1033, France, [2]Univ Lyon Sud, Hospices Civils de Lyon, Lyon, France, France

Disclosures: Philippe Paul Wagner, None

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**

*Elizabeth A. Zimmermann[1], Nicholas Mikolajewicz[1], Maximilian Rummler[1], Catherine Julien[1], Francis H. Glorieux[1], Bettina M. Willie[1]. [1]McGill University and Shriners Hospitals for Children, Canada

Disclosures: Elizabeth A. Zimmermann, Mereo BioPharma, Grant/Research Support

OSTEOPOROSIS - EPIDEMIOLOGY

Posters

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 Skjødt[1], Martin Ernst[2], Bo Abrahamsen[2], Sara Khalid[3], Antonella Delmestri[3], Daniel Prieto-Alhambra[3], Cesar Libanati[4], Emese Toth[4], Cyrus Cooper[5], Daniel Martinez-Laguna[6]. [1]Holbæk Hospital, Denmark, [2]OPEN, University of Southern Denmark, Denmark, [3]NDORMS, University of Oxford, United Kingdom, [4]UCB, Belgium, [5]MRC Lifecourse Epidemiology Unit, Univ of Southampton, United Kingdom, [6]Instituto de Salud Carlos III, Spain

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MON-670 **Relationship between vitamin D, parathyroid hormone and bone health in Myanmar subjects**

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MON-671 **Disease Burden of Osteoporosis and Other NCDs in Lebanon**

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MON-672 **Serum Pentosidine in Women in the Canadian Multicentre Osteoporosis Study**

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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 Cheung[1], Ming-Tuen Lam[1], Chor-Wing Sing[1], Gloria Li[1], Annie Kung[1], Kathryn Tan[1]. [1]The 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 Crandall[1], Rebecca Hunt[2], Katie Stone[3], John Robbins[4], Maryam Sattari[5], Karen Johnson[6], Julie Weitlauf[7], Tanya Gure[8], Andrea LaCroix[9], Jane Cauley[10]. [1]University of California, Los Angeles, United States, [2]Fred Hutchinson Cancer Research Center, United States, [3]California Pacific Medical Center Research Institute and San Francisco Coordinating Center, United States, [4]UC Davis Medical Center, United States, [5]University of Florida, United States, [6]University of Tennessee Health Science Center, United States, [7]Veterans Affairs Palo Alto Health Care System, Palo Alto, CA and Department of Psychiatry and Behavioral Sciences, Stanford University, United States, [8]The Ohio State University, United States, [9]University of California, San Diego, United States, [10]Graduate 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**

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MON-677 **Comorbid illnesses and reduced GFR predict fractures in patients with diabetes in an ethnic-specific manner**

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Disclosures: Rajesh Jain, None

MON-678 **The Effect of Marital Status on Risk Factors for Fracture and the Risk of Hip Fracture in Sweden**

*Helena Johansson[1], John A Kanis[1], Catharina Lewerin[2], Peter Johansson[2], Mattias Lorentzon[3], Daniel Sundh[3], Dan Mellström[3], Magnus K Karlsson[4], Björn E Rosengren[4], Eva Ribom[5], Claes Ohlsson[6]. [1]McKillop Health Institute, Australian Catholic University, Australia, [2]Section of Hematology and Coagulation, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, [3]Geriatric Medicine, Department of Internal Medicine and Clinical Nutrition, Institute of Medicine, University of Gothenburg, Sweden, [4]Clinical and Molecular Osteoporosis Research Unit, Department of Clinical Sciences Malmo, Lund University and Department of Orthopedics, Skane University Hospital, Sweden, [5]Department of Surgical Sciences, University of Uppsala, Sweden, [6]Center 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**

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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 Lary[1], Kathleen Nevola[1], Alexandra Hinton[1], Katherine Motyl[1], Lee Lucas[1], Sarah Hallen[1], Theresa Shireman[2], Andrew Zullo[2], Karen Houseknecht[3], Sarah Berry[4], Douglas Kiel[4]. [1]Maine Medical Center Research Institute, United States, [2]Brown University School of Public Health, United States, [3]University of New England, United States, [4]Harvard Medical School, United States

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MON-681 **Difference of Clinical Outcomes after Fracture Hospitalization between Elderly Men and Women**

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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.**

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Disclosures: Chor-Wing Sing, None

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 Waqas[1], Katerina Trajanoska [1], Jinluan Chen[2], Andre Uitterlinden[2], Fernando Rivadeneira[2], Fjorda Koromani[3], Carola Zillikens [4]. [1]Erasmus Medical Centre, Netherlands, [2]Erasmus Medical Centre, Netherlands, [3]Erasmus medical Centre, Netherlands, [4]Eramus 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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Disclosures: Yingke Xu, None

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**

*Grushenska Aguilar-Esparza[1], Patricia Clark[2], Coronado-Zarco Roberto[3], Andrea Olascoaga-Gómez de Leon[3], Esperanza Ramirez-Pérez[3], Edgar Denova-Gutierrez[4], Muhammad Kassim Javaid[5], Fryda Medina-Rodriguez[6], Jorge Quiroz-Williams[6], Edgar Reyes-Padilla[6], Ruben Torres-González[6], Lucia Mendez-Sanchez[7], Diana Montiel-Ojeda[7], Beatriz I. Sanchez-Trampe[8], Juan M. Viruega-Avalos[8]. [1]IMSS-UMAE Victorio Narváes de la Fuente, Mexico, [2]Unidad de Epidemiología Clinica, Hospital Infantil Federico Gomez-Facultad de Medicina UNAM, Mexico, [3]Instituto Nacional de Rehabilitacion "Luis Guillermo Ibarra Ibarra", Mexico, [4]Instituto Nacional de Salud Pública de Mexico, Mexico, [5]University of Oxford Medical Sciences Division, United Kingdom, [6]IMSS UMAE Victorio Narváez, Mexico, [7]Unidad de Epidemiología Clínica, Hospital Infantil Federico Gómez-Facultad de Medicina UNAM, Mexico, [8]ISSSTE Hospital General Dr. Dario Fernandez Fierro, Mexico

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MON-702 **Assessing Hip Surgery Outcomes in the State of Texas: Are Outcomes Equal Across Race and Ethnicity**

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MON-703 **Perception of severe osteoporosis amongst medical doctors in South Korea: Awareness, impact, and treatment**

*Jin Hwan Kim[1], Yoon Sok Chung[2]. [1]Department of Orthopaedics, Ilsan Paik Hospital of Inje University, Republic of Korea, [2]Department of Endocrinology and Metabolism, Ajou University School of Medicine, Republic of Korea

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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 Berg [1], Paul van Haard[2], Piet Geusens[3], Joop van den Bergh [3], Dave Schweitzer[4]. [1]Maastricht University Medical Center +, Maastricht, the Netherlands, Netherlands, [2]Reinier the Graaf Gasthuis, Netherlands, [3]Hasselt University, Netherlands, [4]Reinier de Graaf Gasthuis Delft, Netherlands

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MON-705 **Implementing an Osteoporosis Program into Your Practice, Hospital, or Organization: What Works and What Doesn't Work**

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Disclosures: Kathy Williams. EdD, None

OSTEOPOROSIS - NUTRITION, DIETARY SUPPLEMENTS AND PHYSICAL ACTIVITY

MON-721 **Bovine Colostrum Supplementation and Bone Health: a Pilot Study**

*Tânia Amorim[1], Laura Freitas[1], Eirini K Kydonaki[1], Henrique Reguendo[1], Carlos R Simón[2], Ana R Bastos[3], Raphaël F Canadas[3], Joaquim M Oliveira[4], Vitor M Correlo[4], Rui L Reis[4], Yiannis Koutedakis[5], Rui Pinto[6], Franklim Marques[7]. [1]UCIBIO/REQUIMTE, Faculty of Pharmacy, University of Porto, Portugal, Portugal, [2]Centro de Estudios Superiores de la Industria Farmacéutica (CESIF, SA), Spain, Spain, [3]3B's Research Group, I3Bs - Research Institute on Biomaterials, Biodegradables and Biomimetics, University of Minho, Portugal; ICVS/3B's, Portugal, Portugal, [4]3B'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, [5]Faculty of Education, Health and Wellbeing, University of Wolverhampton, United Kingdom; School of Sports and Exercise Sciences, University of Thessaly, Greece, Greece, [6]iMed.UL, Faculty of Pharmacy, University of Lisbon, Lisbon, Portugal, Portugal, [7]UCIBIO/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 Chou[1], Elle Murata[1], Cindy Yu[1], Nancy Cook[1], Samia Mora[1], I-min Lee[1], Julie Buring[1], JoAnn Manson[1], Meryl LeBoff[1]. [1]Brigham 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 Imai[1], Kazuhiro Uenishi[1]. [1]Kagawa 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 Nakamura[1], Kazuhiro Uenishi[1]. [1]Kagawa 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 Noel[1], Kelsey Mangano[1], Peter Bakun[2], John Griffith[3], Katherine Tucker[4]. [1]University of Massachusetts Lowell, United States, [2]Tufts University, United States, [3]Northeastern University, United States, [4]University 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 Svedlund[1], Bojan Tubic[1], Anders Elfvin[1], Diana Swolin-Eide[1], Cecilia Pettersson[2], Lars Ellegård[2], Per Magnusson[3]. [1]Department of Pediatrics, University of Gothenburg, Sweden, [2]Department of Internal Medicine and Clinical Nutrition, University of Gothenburg, Sweden, [3]Department 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**

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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 Gamsjaeger[1], Erik Eriksen[2], Klaus Klaushofer[3], Eleftherios Paschalis[3]. [1]Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUVA Trauma Centre Meidling, 1st Medical Department, Hanusch Hospital, Vienna, Austria, Austria, [2]Hormonlaboratoriet, AUS Aker Universitetssykehus, Norway, [3]Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUVA 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 Piccoli[1], Francesca Cannata[1], Fabrizio Russo[1], Valentina Greto[1], Camilla Isgrò[1], Rocky Strollo[1], Carlo Massaroni[1], Claudio Pedone[1], Gianluca Vadalà[1], Vincenzo Denaro[1], Rocco Papalia[1], Paolo Pozzilli[1], Mauro Maccarrone[1], Nicola Napoli[1], Tiziana Bisogno[2]. [1]Campus Bio-Medico University of Rome, Italy, [2]Endocannabinoid Research Group, Institute of Traslational Pharmacology, CNR, Italy

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OSTEOPOROSIS - SECONDARY OSTEOPOROSIS

MON-755 **Association between plasma sodium and bone disease in patients with chronic heart failure: a prospective cohort study:**

*Daniel Bencic[1], johannes Schmid[2], Michael Fuchsjäger[2], Astrid Fahrleitner-Pammer[3], Barbara Obermayer-Pietsch[3], Thomas Pieber[3], Ewald Kolesnik[4], Andreas Zirlik[4], Friedrich Fruhwald[4], Dirk von Lewinski[4], Klemens Ablasser[4], Nicolas Verheyen[4], Andreas Tomaschitz[5], Daniel Scherr[6]. [1]Medical University of Graz, Austria, [2]Department of Radiology, Medical University of Graz, Austria, [3]Division of Endocrinology and Diabetology, Department of Internal Medicine, Medical University of Graz, Austria, [4]Department of Cardiology, Medical University of Graz, Austria, [5]Klinikum Bad Gleichenberg, Austria, [6]Department 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 Brance[1], Lucas R Brun[1], Bernardo A Pons-Estel[2], Norberto J Quagliato[3], Marisa Jorfen[4], Guillermo Berbotto[4], Juan C Raggio[4], Ignacio Chavero[4], Carolina Dieguez[4], Rómulo Wong[4], Noel Cortese[5], Juan Soldano[5], Mariano Palatnik[6], Ariel Sánchez[7], Luis Del Rio[8], Silvana Di Gregorio[8]. [1]Bone Biology Laboratory. School of Medicine, Rosario National University, Argentina, [2]Regional de Enfermedades Autoinmunes y Reumáticas (CREAR), Argentina, [3]. Instituto CAICI, Argentina, [4]Reumatología y Enfermedades Óseas, Argentina, [5]School of Medicine, Rosario National University, Argentina, [6]Centro de Reumatología, Argentina, [7]Centro de Endocrinología, Argentina, [8]Cetir/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 Desbiens[1], Aboubacar Sidibe[1], Fabrice Mac-Way[1], Rémi Goupil[2]. [1]CHU DE QUEBEC - UNIVERSITE LAVAL, Canada, [2]Hopital du Sacré-Coeur de Montréal, Canada

Disclosures: Louis-Charles Desbiens, None

MON-758 **Obesity Protects Patients with Rheumatoid Arthritis from Systemic Bone Losing During Anti-TNF Treatment**

*Mie Jin Lim[1], Won Park[1], Seong Ryul Kwon[1], Kyong-Hee Jung[1], Seung Yun Lee[1]. [1]Inha 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 Napoli[1], Caterina Conte[2], Richard Eastell[3], Richard Jacques[4], Susan K. Ewing[5], Eric Vittinghoff[5], Ann V. Schwartz[5], Douglas C. Bauer[6], Dennis M. Black[6], Elsa S. Strotmeyer[7], Elizabeth J. Samelson[8]. [1]Unit of Endocrinology and Diabetes, University Campus Bio-Medico, Rome, Italy, [2]Vita-Salute San Raffaele University, Milan, Italy, [3]Academic Unit of Bone Metabolism, University of Sheffield, United Kingdom, [4]School of Health and Related Research, University of Sheffield, United Kingdom, [5]Department of Epidemiology and Biostatistics, University of California San Francisco, United States, [6]Department of Medicine and Department of Epidemiology and Biostatistics, University of California San Francisco, United States, [7]Center for Aging and Population Health Department of Epidemiology Graduate School of Public Health University of Pittsburgh, United States, [8]Institute 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 Okazaki[1], Ko Chiba[1], Kazuaki Yokota[1], Choko Kondo[1], Mitsuru Doi[1], Shuta Yamada[1], Makoto Osaki[1]. [1]Department 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**

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Disclosures: Ikuko Tanaka, None

MON-762 **Changes in femoral cortical and trabecular bone after bariatric surgery**

*Renaud Winzenrieth[1], Ludovic Humbert[1], Carmen Gomez Vaquero[2], Carmen Xammar[2], Nuria Vilarrasa[3], Fernando Guerrero[3], Anna Casajoana[4]. [1]Galgo Medical, Spain, [2]Rheumatology Department, Hospital Universitari de Bellvitge, Spain, [3]Endrocrinology and Nutrition Department, Hospital Universitari de Bellvitge, Spain, [4]Bariatric 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 Briot[1], Anne Marie Schott[2], Jean Philippe Sanchez[3], Sauveur Bendavid[4], Lise Bosquet[5], Stéphanie Perot [5], Aurélie Etringer [5], Jean Vannak Chauny [6], Pascale Samama[7], Gaelle Desamericq[7]. [1]Département de Rhumatologie, Hôpital Cochin, Assistance Publique-Hôpitaux de Paris., France, [2]Hospices Civils de Lyon, Pôle de Santé Publique, EA 7425 HeSPeR, France, [3]Centre de Rhumatologie, France, [4]Médecine Générale, France, [5]ICTA PM, France, [6]Amgen SAS, France, [7]AMGEN 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 Chaudhri[1], Nahid Rianon[1], Rafia Rasu[2], Brendan Lee[3]. [1]UTHealth McGovern Medical School, United States, [2]University of North Texas Health Science Center, United States, [3]Baylor College of Medicine, United States

Disclosures: Aysha Chaudhri, None

MON-804 **PRospective Observational Study in REal Life Treatment in LatinAmerican Patients with Denosumb Query Database (ROSELA DataBase): Preliminary Report**

*Francisco Fidencio Cons Molina[1], Jose Lucio Javier Balcazar Rodriguez[2], Edison Edgardo Romero Galvan[3], Jose Fernando Molina[4], Jesus Armando Montaño Uzcanga[5], Luis Jaime Elizondo Alanis [6], Fedra Irazoque Palazuelos[7], Adolfo Jesus Zarain Garcia[8], Amador Macias Osuna[9], Jose Antonio Veloz Aranda[10], Jorge Alberto Morales Torres[11], Francico Olan [12], Carlos Ruben Salinas Dorantes[13], Misael Alejandro Perez Romero [14], Maria Silvia Larraoude[15], Maria Belen Zancheta [16], Vanina Soledad Farias [17], Agustin Escobar Femat[18], Carlos Ramon Rios Acosta[19], Elena Calle Teixeira[20], Juan Jose Jaller Raad[21], Alejandro Roman Gonzalez[22], Sergio Gutierrez Ureña[23], Jose de Jesus Guerra Jaime.[24], Hilario Avila Armengol[25]. [1]Centro Investigación Artritis y Osteoporosis, Mexico, [2]Hospital Regional ISSSTE, Culiacán, México, Mexico, [3]Consultorio de Osteología, Uruguay, [4] Centro Reumalab, Colombia, [5]Diagnóstico Integral Para la Mujer GineDX, Mexico, [6]Centro de Investigación Clínica de Cd. Obregón, Mexico, [7]CINTRE, Mexico, [8]Centro de Climaterio Menopausia y Osteoporosis, Mexico, [9]Centro Médico San Francisco, Mexico, [10]Hospital Regional ISSSTE Leon Guanajuato, Mexico, [11]Hospital Aranda de la Parra, Mexico, [12]Hospital Regional de Alta Especialidad, Mexico, [13]Hospital Angeles Puebla, Mexico, [14]Centro integral para la atención de la osteoporosis , Mexico, [15]Consultgorio Reumatología, Argentina, [16]IDIM, Instituto de Diagnostico e investigaciones Metabólicas, Argentina, [17]Consultorio Medico Osteología, Argentina, [18]Consultorio Ginecología y Obstetricia, Mexico, [19]Centro de Reumatología y Rehabilitación, Ecuador, [20]Complejo Hospitalario San Pablo, Peru, [21]Centro de Reumatologia y Ortopedia S.A.S, Colombia, [22]Hospital Universitario San Vicente Fundación, Colombia, [23]Centro Atención e Investigación Especializado en Enfermedades Reumáticas y Autoinmunes, SC, Mexico, [24]Clinica Bajio CLINBA, Mexico, [25]Centro Integral en Reumatologia, S.A. de C.V., Mexico

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MON-805 **Factors associated with improved readiness for adopting osteoporosis treatment**

*Giovanni Adami[1], Elizabeth Rahn[1], Amy Mudano[1], Kenneth G Saag[1], Maria I Danila[1]. [1]University of Alabama at Birmingham, United States

Disclosures: Giovanni Adami, None

MON-806 **Novel VEGF loaded Fibrinogen-Aptamer functionalized hydrogel improves osteogenesis and angiogenesis**

*Henry Donahue [1], Otto Juhl[2], David Cohen[2], Michael Friedman[2], Yue Zhang[2], Zvika Schwartz[2], Anna-Blessing Merife[2], Yong Wang[3], Nan Zhao[3]. [1]Virginia Commonwealth University, United States, [2]Virginia Commonwealth University, United States, [3]Pennsylvania State University, United States

Disclosures: Henry Donahue, None

MON-807 **Whole Body Vibration moderates MGUS-associated Bone Disease in Humans**

*Franca Genest[1], Lothar Seefried[1], Johanna Strömsdörfer[2], Bernhard Egelmann[2], Constantin Lapa[2], Billy Sperlich[2], Franziska Jundt[2]. [1]Klinische Studieneinheit, University of Würzburg, Germany, [2]University 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 Hirano[1], Daisuke Kihira[1], Yasuhide Kanayama[2], Kyosuke Hattori[3], Nobunori Takahashi[3], Toshihisa Kojima[3], Naoki Ishiguro[4]. [1]Rheumatology, Toyohashi Municipal Hospital, Japan, [2]Orthopardic Surgery and Rheumatology, Toyota Kosei Hospital, Japan, [3]Orthopaedic Surgery and Rheumatology, Nagoya University Graduate School of Medicine, Japan, [4]Orthopaedic 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 Ikeda[1], Masao Akagi[2], Hiroshi Kaji[3]. [1]Kindai University Hospital,Othpaedics surgery, Japan, [2]Kindai University Orthopaedic surgery, Japan, [3]Department 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 Kang[1], Seung Woo Suh[1], Soon Hyuck Lee[1], Si Young Park[2], Jae Young Hong[2]. [1]Korea University College of Medicine, Republic of Korea, [2]Korea University College of Medicint, 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 Kasukawa[1], Naohisa Miyakoshi[1], Michio Hongo[1], Yoshinori Ishikawa[1], Daisuke Kudo[1], Chiaki Sato[1], Yoichi Shimada[1]. [1]Department 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 Larkin[1], Madhumathi Rao[1], Florence Lima[1], Marie Claude Moniere Faugere[1], Hartmut Malluche[1]. [1]University of Kentucky, United States

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MON-813 **Study of the effect of educational intervention on compliance and fracture rates in elder female patients with osteoporosis**

*Zhang Lei[1]. [1]Sichuan 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 Lorentzon[1], Helena Johansson[2], Nicholas C Harvey[3], Enwu Liu[4], Carolyn J Crandall[5], Eugene V McCloskey[6], John Kanis[7]. [1]Geriatric Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg and Geriatric Medicine Clinic, Sahlgrenska University Hospital, Mölndal, Sweden, Sweden, [2]Geriatric 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, [3]MRC 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, [4]Mary McKillop Health Institute, Australian Catholic University, Melbourne, Australia, Australia, [5]David Geffen School of Medicine at the University of California, Los Angeles, US, United States, [6]Mellanby 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, [7]Centre 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 Miyaoka[1], Masaaki Inaba[1], Yasuo Imanishi[1], Noriyuki Hayashi[1], Masaya Ohara[1], Yuki Nagata[1], Shinsuke Yamada[1], Katsuhito Mori[1], Masanori Emoto[1]. [1]Department 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 Omosule[1], Ferris Pfeiffer[1], Charlotte Phillips[1], Youngjae Joeng[2], Sandra Kleiner[3]. [1]University of Missouri, United States, [2]Baylor College of Medicine, United States, [3]Regeneron Pharmaceuticals, United States

Disclosures: Catherine Omosule, None

MON-817 **An osteoporosis course for patients presented by students at health-related study programmes.**

*Helena Salminen[1], Eva Toth-Pal[1], Hans Ranch Lundin[1], Kajsa Kronlund[2]. [1]Karolinska Institutet, Sweden, [2]Stockholm County Council, Sweden

Disclosures: Helena Salminen, None

MON-818 **Development of a bone-targeted orally bioavailable osteogenic oxysterol for the treatment of osteoporosis**

*Frank Stappenbeck[1], Feng Wang[1], Farhad Parhami[1]. [1]MAX 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 Lohawijarn[1], Natnicha Houngngam[1], Parichat Yimnoi[1], Direk Limmathurotsakul[2], Sompongse Suwanwalaikorn[3], Lalita Wattanachanya[3]. [1]King Chulalongkorn Memorial Hospital, Thailand, [2]Mahidol-Oxford Research Unit and Faculty of Tropical Medicine, Mahidol University, Thailand, [3]Chulalongkorn 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 Li[1], Xuetong Wang[1], Daquan Liu[1], Hiroki Yokota[2], Ping Zhang[3]. [1]Department of Anatomy and Histology, School of Basic Medical Sciences, Tianjin Medical University, Tianjin 300070, China, China, [2]Department of Biomedical Engineering, Indiana University-Purdue University Indianapolis, IN 46202, USA, United States, [3]Department 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 Cappariello[1], Alice Green[2], Christopher George[2], Kirsty Shefferd[2], Argia Ucci[2], Alexander Loftus[2], Simona Delle Monache[2], Marco Ponzetti[2], Anna Teti[2], Nadia Rucci [2], Maurizio Muraca[3]. [1]Children Hospital Bambino Gesu', Italy, [2]University of L'Aquila, Italy, [3]University 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 Hens[1], William Philbrick[2], John Wysolmerski[2]. [1]yale university, United States, [2]Yale 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-Guerrero[1], Irene Tirado-Cabrera[1], Irene Buendia[1], Sara Heredero Jiménez[1], Arancha R Gortázar[1], Juan A Ardura[1]. [1]Bone Physiopathology laboratory, Applied Molecular Medicine Institute (IMMA), Universidad San Pablo-CEU, CEU Universities, Campus Monteprincipe, 28925 Alcorcón, Madrid, Spain., Spain

Disclosures: Eduardo Martin-Guerrero, None

MON-832 **BMP9 Regulates Bone Metabolism By Promoting Bone Formation And Inhibiting Bone Resorption**

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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 Barratt[1], Rebecca Sawyer[1], Paul Anderson[1]. [1]University of South Australia, Australia

Disclosures: Kate Barratt, None

MON-858 **Genetic Inactivation of Sclerostin in a Mouse Model of Osteogenesis Imperfecta**

*Iris Boraschi-Diaz[1], Josephine T. Tauer[1], Frank Rauch[1]. [1]Shriners Hospital for Children Canada, Canada

Disclosures: Iris Boraschi-Diaz, None

MON-860 **Collagen XII as a maintenance factor for anterior cruciate ligament**

*Shin Fukusato[1], Yayoi Izu[2], Masashi Nagao[3]. [1]Department of Orthopedics, University of Juntendo, Japan, [2]Department of Veterinary Okayama science University, Japan, [3]Department 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 Ding[1], Jianrui Xu[1], Qing Zhong[1], Wendy Bollag[1], Meghan McGee-Lawrence[1], Xingming Shi[1], Sadanand Fulzele[1], Baolin Kang[1], Anuj Sharma[1], Mark Hamrick[1], Carlos Isales[1], William Hill[2]. [1]Augusta University, United States, [2]Medical 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 Keirns[1], Kendall Anderson[1], James Bothwell[1], Colin Robertson[1], Bethany Hatter[1], Ojo Babajide[1], Daniel Lin[1], Edralin Lucas[1], Brenda Smith[1], Kara Robinson[2]. [1]Oklahoma State University, United States, [2]Oklahoma State Universtiy, United States

Disclosures: Bryant Keirns, None

MON-864 **Systemic alterations due to estrogen deficiency in a senile osteoporotic rat model**

*Deeksha Malhan[1], Fathi Hassan[1], Sabine Stoetzel[1], Christian Heiss[1], Thaqif El Khassawna[1], Felix Schulze[2], Angela Rösen-Wolff[2]. [1]Experimental Trauma Surgery, Germany, [2]Department 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 Sedghizadeh[1], Esmat Sodagar[1], Raffie Garabedian[1], Jasveen Wadia[1], Frank Ebetino[2], Philip Cherian[2], Shuting Sun[2], Neema Bakhshalian[3], Jeffrey Neighbors[4], R. Graham Russell[5], Charles McKenna[6]. [1]University of Southern California, Ostrow School of Dentistry, United States, [2]BioVinc, United States, [3]University of Southern California; Ostrow School of Dentistry, United States, [4]BioVinc; Pennsylvania State University, United States, [5]University of Sheffield, United Kingdom, [6]University 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 Sun[1], Ling Wang[1], Hongshuai Li[1], Baoli Qian[1], Wei Feng[1], Mark Gladwin[1]. [1]University 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 Ozgurel[1], Kevin McAndrews[1], Meloney Cregor[1], David Halladay[1], Teresita Bellido[2]. [1]Department of Anatomy & Cell Biology, Indiana University School of Medicine; Roudebush Veterans Administration Medical Center, United States, [2]Department 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 Yarrow[1], Christine Conover[2], Russell Wnek[2], Michael Reynolds[2], Kinley Buckley[2], Jessica Jiron[3], Gabriella Gonzalez-Perez[3], J. Ignacio Aguirre[3]. [1]Malcom Randall VA Medical Center / University of Florida College of Medicine, Divsion of Endocrinology, Diabetes, and Metabolism, United States, [2]Malcom Randall VA Medical Center, United States, [3]University 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 Atheroprogression, Plaque Calcification, or Inflammation in 2 Murine Models of Atherosclerosis**

*Rogely Boyce[1], Aimee Deaton[1], Jun Yin[1], Marina Stolina[1], Denise Dwyer[1], Sheetal Kumar[1], Emily de Koning[1], Kathrin Locher[1], Luke Ward[1], Charles Glaus[1], Yudong He[1], James Turk[1], Melanie Felx[2], Gabrielle Boyd[2], Jean-Guy Bienvenu[2], Aurore Varela[2], Martin Guillot[2], Gill Holdsworth[3], Alison Wolfreys[3]. [1]Amgen Inc., United States, [2]Charles River Laboratories Montreal ULC, Canada, [3]UCB 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**

*Abigial A Coffman[1], Rosa Guerra[1], Jelena Basta-Pljakic[1], Robert J Majeska[1], Mitchell B Schaffler[1], Frank H Ebetino[2], Mark W Lundy[3]. [1]City College of New York, United States, [2]University of Rochester, United States, [3]Indiana University School of Medicine, United States

Disclosures: Abigial A Coffman, None

MON-885 **Abaloparatide: Infusion Causes the Same Catabolic Bone Loss in Mice as PTH (1-34)**

*Carole Le Henaff[1], Brandon Finnie[1], Zhiming He[1], Joshua Johnson[1], Nicola C Partridge[1]. [1]New 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 Carvalho[1], Breanna Morrill[1], Katherine Motyl[1], Deborah Barlow[2], Karen Houseknecht[2], Tamara King[2]. [1]Maine Medical Center Research Institute (MMCRI), United States, [2]University 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 Matsushita[1], Saki Shimizu[1], Akihiko Wakatsuki[1], Akira Minami[2], Hiroaki Kanazawa[2], Takashi Suzuki[2]. [1]Aichi Medical University, Japan, [2]University 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 Sattgast[1], Nikki Walter[2], Natali Newman[2], Kathleen Grant[2], Adam Branscum[3], Russell Turner[4], Urszula Iwaniec[4]. [1]Oregon State University, United States, [2]Division of Neuroscience, Oregon National Primate Research Center, Oregon Health and Science University, United States, [3]Biostatistics Program, School of Biological and Population Health Sciences, Oregon State University, United States, [4]Skeletal 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 Zhang[1], Zhenjian Zhuo[1], Bao-Ting Zhang[1], Jin Liu[2], Chao Liang[2], Aiping Lu[2], Ge Zhang[3]. [1]School of Chinese Medicine, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong, [2]Institute for Advancing Translational Medicine in Bone & Joint Diseases, School of Chinese Medicine, Hong Kong Baptist University, Hong Kong, [3]Institute for Advancing Translational Medicine in Bone & Joint Diseases, School of Chinese Medicine, Hong Kong Baptist Universityh, Hong Kong

Disclosures: Zong-Kang Zhang, None

MON-908 **Impaired Cognitive Function in Normocalcemic Primary Hyperparathyroidism**

*Lara Voss[1], Maira Nóbrega[1], Leonardo Bandeira[1], Francisco Bandeira[1], Pedro Rocha-Filho[2]. [1]Division of Endocrinology & Diabetes, Agamenon Magalhaes Hospital, University of Pernambuco Medical School, Brazil, [2]Federal 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 Dahir[1], Margo Black[1], Lauren Flueckinger[2], Seung-Hye Jung[2], Priya Kishnani[2], Anna Petryk[3], Megan Teynor[3], Qunming Dong[3]. [1]Vanderbilt University Medical Center, United States, [2]Duke University Medical Center, United States, [3]Alexion 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 Khan[1], Kristina Chen[2], G. Sarah Power[3], Lidia Demchyshyn[4]. [1]Department of Medicine, Divisions of Endocrinology and Metabolism and Geriatric Medicine, McMaster University, Canada, [2]Shire Human Genetic Therapies, Inc., a member of the Takeda group of companies, United States, [3]IQVIA, Canada, [4]Shire 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 Mäkitie[1], Outi Mäkitie[1], Anders Kämpe[2], Alice Costantini[2], Jessica Alm[2], Per Magnusson[3]. [1]Folkhälsan Institute of Genetics and Research Program for Clinical and Molecular Metabolism, Faculty of Medicine, University of Helsinki, Helsinki, Finland, Finland, [2]Department of Molecular Medicine and Surgery and Center for Molecular Medicine, Karolinska Institutet, Stockholm, Sweden, Sweden, [3]Department 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 Muurinen[1], Minna Pekkinen[1], Outi Mäkitie[1]. [1]Folkhälsan 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. Polgreen[1], Ashish Gupta[2], Troy C. Lund[2], Paul J. Orchard[2], Weston P. Miller[3]. [1]Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center, United States, [2]University of Minnesota, United States, [3]Sangamo 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 Tornero[1], Sara García[1], Alejandro Balsa[1], Pilar Aguado[1], Mónica Coronado[2], Carmen Lancha[2], Domenico Monachello[2], Luis Dominguez[2], Ludovic Humbert[3], Carmen Mateo[4], Alejandra Montero[4]. [1]Rheumatology Department, La Paz Hospital, Spain, [2]Nuclear Medicine Department, La Paz Hospital, Spain, [3]Galgo Medical, Spain, [4]Primary 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 Das[1], Liqin Xie[2], Lily Huang[2], Lili Wang[2], Sarah Hatsell[2], Xialing Wen[3], Andrew Murphy[3], Aris Economides[3], Kalyan Nannuru[4]. [1]Regeneron Pharmaceuticals Inc., United States, [2]Regeneron Pharmaceuticals, United States, [3]Regeneron Pharmaceuticals, United States, [4]Regeneron 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 Fujii[1], Nelson Monteiro[1], Ernst Reichenberger[1], I-Ping Chen[1], Yasuyoshi Ueki[2]. [1]University of Connecticut Health, United States, [2]Indiana University, United States

Disclosures: Yasuyuki Fujii, None

MON-941 **X-linked Hypophosphataemia: Prevalence and Mortality Within the United Kingdom**

*Samuel Hawley[1], Antonella Delmestri[1], Daniel Prieto-Alhambra[1], Rafael Pinedo-Villanueva[1], M. Kassim Javaid[1], Nick Shaw[2], Cyrus Cooper[3]. [1]University of Oxford, United Kingdom, [2]Birmingham Woman's and Children's NHS Foundation Trust, United Kingdom, [3]University 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 Lee[1], Yun-Wen Lin[2], Hsiao-Jung Kao[3], Yuan-Tsong Chen[3]. [1]Institute of Cellular and Organismic Biology, Academia Sinica, Taiwan, Province of China, [2]1Institute of Cellular and Organismic Biology, Academia Sinica, Taiwan, Province of China, [3]Institute 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 Li[1], Vishawa Deepk[1], Shuting Yang[2], Shuying Yang[2], Eiki Koyam[3], Ling Qin[4]. [1]Dental medicine school of university of Pennsylvania, United States, [2]Dental medicine school of university of penssyviania, United States, [3]Department of orthopedic surgery, The Children's Hospital of Philadelphia, United States, [4]Department 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 Mackenzie[1], Sean Bell[1], Brian Heglar[1], Hoonsan Ong[1], Daniel Wendt[1]. [1]BioMarin 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 Morko[1], Jukka Vääräniemi[1], Jussi M Halleen[1]. [1]Pharmatest Services, Finland

Disclosures: Jukka Morko, None

MON-946 **NFAM1 Stimulation of Osteoclast Differentiation in Paget's Disease of Bone**

*Purushoth Ethiraj[1], Yuvaraj Sambandam[1], Sakamuri Reddy[1], Jessica Hathaway-Schrader[2]. [1]Darby Children's Research Institute/Pediatrics, Medical University of South Carolina, United States, [2]Dept. 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 Schoenmaker[1], Merve Sariyildiz[1], Teun Vries de[1], Esmee Botman[2], Coen Netelenbos[2], Marelise Eekhoff[2], Dimitra Micha[3], Nathalie Bravenboer[4]. [1]Department of Periodontology, Academic Centre for Dentistry Amsterdam (ACTA), University of Amsterdam and Vrije Universiteit, the Netherlands, Netherlands, [2]Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Internal Medicine section Endocrinology, Amsterdam Movement Sciences, the Netherlands, Netherlands, [3]Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Clinical Genetics, Amsterdam Movement Sciences, the Netherlands, Netherlands, [4]Amsterdam 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. Whyte[1], Angela Nenninger[1], E. Michael Lewiecki[2], William H McAlister[3], Gary S. Gottesman[4], Deborah Wenkert[4], John W. Hellstein[5], Shengui Duan[6], Steven Mumm[6]. [1]Center for Metabolic Bone Disease and Molecular Research, Shriners Hospital for Children, St. Louis, MO, USA, United States, [2]University of New Mexico School of Medicine, Albuquerque, NM, USA, United States, [3]Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, MO, USA, United States, [4]Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children-St. Louis, United States, [5]University of Iowa, Oral Pathology, United States, [6]Division 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 Zhadina[1], Natasha Cherman[1], Lori Guthrie[1], Beth Brillante[1], Pamela Robey[1], Michael Collins[1], Alison Boyce[1]. [1]National 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 Bislev[1], Lene Langgergard Rødbro[1], Tanja Sikjær[1], Lars Rejnmark[1]. [1]Department 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 Drabkin[1], Brianne Sutton[1], Philip Mehler[1], Micol Rothman [2], Christine Swanson[2]. [1]Denver Health Medical Center, United States, [2]University 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-Laugesen[1], Sofie Malmstroem[1], Eva Ebbehoj[1], Lars Rejnmark[1], Per Cramon[2], Torquil Watt[2], Klavs Würgler Hansen[3]. [1]Aarhus University Hospital, Denmark, [2]Rigshospitalet, Denmark, [3]Regional Hospital Silkeborg, Denmark

Disclosures: Diana Grove-Laugesen, None

MON-967 **Establishing Potential Jump Power Cut-Off Values for Sarcopenia**

*Namki Hong[1], Yumie Rhee[1], Diane Krueger[2], Neil Binkley[2], Bjoern Buehring[3]. [1]Department of Internal Medicine, Severance Hospital, Endocrine Research Institute, Yonsei University College of Medicine, Republic of Korea, [2]UW Osteoporosis Clinical Research Program, University of Wisconsin-Madison, United States, [3]Rheumazentrum 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 Sahni[1], Alyssa B. Dufour[1], Douglas P. Kiel[1], Marian T. Hannan[1], Paul F. Jacques[2], Roger A. Fielding[2], Emelia J. Benjamin[3], Ramachandran S. Vasan[3], Joanne M. Murabito[3], Gary F. Mitchell[4], Naomi M. Hamburg[5]. [1]Marcus Institute, Hebrew SeniorLife and Harvard Medical School, United States, [2]Jean Mayer USDA HNRCA, Tufts University School of Nutrition, United States, [3]BU School of Medicine and Framingham Heart Study, United States, [4]Cardiovascular Engineering, Inc., United States, [5]BU 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 Santanasto[1], Iva Miljkovic[1], Ryan Cvejkus[1], Joseph Zmuda[1], Victor Wheeler[2]. [1]University of Pittsburgh, United States, [2]Tobago Health Studies Office, Trinidad and Tobago

Disclosures: Adam Santanasto, None

MON-970 **Low Agreement Between DXA-Based Low Skeletal Muscle Mass Indicators**

*Francisco Torres-Naranjo[1], Alejandro Gaytán-González[2], Roberto Gabriel González-Mendoza[2], Noé González-Gallegos[3], Claudia Martinez-Cordero [4], Juan Ricardo López-Taylor[5]. [1]Center of Body Composition and Bone Research., Mexico, [2]Institute 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, [3]Department of Welfare and Sustainable Development, University Center of the North, University of Guadalajara, Mexico, [4]HRAEB, Mexico, [5]Institute 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 Yalamanchili[1], John C Gallagher[2], Lynette Smith[3]. [1]Cheyenne Regional Medical Center, United States, [2]Creighton University School of Medicine, United States, [3]University 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 Rokidi[1], Stéphane Blouin[1], Barbara Misof[1], Nathalie Bravenboer[2], Pascale Chavassieux[3], Klaus Klaushofer[4], Eleftherios P. Paschalis[4], Socrates E. Papapoulos[5], Natasha M. Appelman-Dijkstra[5]. [1]Ludwig Boltzmann Institute of Osteology, Austria, [2]Leiden University Medical Center, Netherlands, [3]INSERM UMR 1033, Université de Lyon, France, [4] Ludwig Boltzmann Institute of Osteology, Austria, [5]Leiden 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 Silva[1], Jonas de Carvalho[1], Marise Lazaretti-Castro[2], Rosa M.R. Pereira[3]. [1]University of Sao Paulo, Brazil, [2]Federal University of Sao Paulo, Brazil, [3]Rheumatology 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 Toro[1], Angela Delucchi[2], Rodrigo Alzamora[3], Victor Barrientos[3], Luis Michea[3], Andrea Lazcano[4], Veronica Mericq[5]. [1]Hospital Clinico Universidad de Chile, Chile, [2]Hospital Luis Calvo Mackenna, Chile, [3]Facultad de Medicina Universidad de Chile, Chile, [4]Hospital Roberto del Rio, Chile, [5]Institute 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 Whitney[1], Andrea Alford[1]. [1]University 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 Segato[1], Carolina Pucinelli[2], Lea Silva[2], Paulo Nelson-Filho[2], Lúcia Faccioli[3], Carlos Sorgi[3]. [1]School of Dentistry of Ribeirao Preto - University of Sao Paulo, Brazil, [2]School of Dentistry of Ribeirão Preto - University of São Paulo, Brazil, [3]Faculdade 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 Zhao[1], Makoto Ikeya[1]. [1]Center 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 Li[1], Fang Fang[1], Alessandra Esposito[1], Marissa Cruz[1], Xiaofei Li[1], Anna Spagnoli[1]. [1]University 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 Song[1]. [1]School of Stomatology, Shandong university, China
Disclosures: Hui Song, None

HORMONAL REGULATORS

LB MON-1006 PTH-induced phosphorylation of the transcriptional coregulator αNAC is required for optimal anabolic response

*Martin Pellicelli[1], René St-Arnaud[1]. [1]Shriners 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 Griffin[1], Cicilia Nelson[1], Shiging Qiu[2], Elizabeth Warner[2], Mahalakshmi Honasoge[2], Sudhaker Rao[2]. [1]California Polytechnic State University (Cal Poly), United States, [2]Henry 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 Babbs[1], Chris Materna[1], ffolliott Fisher[1], Catherine Evans[1], Jasbir Seehra[1], Jennifer Lachey[1]. [1]Keros 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 Shi[1], Jiangdong Ren[2], Lizhi He[3], Bin Zhou[4], Guojin Hou[5], Bin Zhou[6], Xianpeng Ge[7]. [1]Peking University School and Hospital of Stomatology, China, [2]First Affiliated Hospital of Xinjiang Medical University, China, [3]Harvard Medical School, United States, [4]Shanghai Institute of Biochemistry and Cell Biology, China, [5]Peking University Third Hospital, China, [6]Albert Einstein College of Medicine of Yeshiva University, United States, [7]Department 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 Scott[1], Arthur Sampaio[1], Michael Underhill[1]. [1]University 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 Lee[1], Ran Song[1], Hyung-In Yang[1], Sang-Hoon Lee[1]. [1]Division 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 Tian[1], Bojing Chi[1]. [1]North 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 Moon[1], Zhongkai Zhang[1], Jung Ryul Kim[1], Eun Ju Bae[2], Byung-Hyun Park[3]. [1]Department of Orthopaedic Surgery, Chonbuk National University Medical School, Republic of Korea, [2]College of Pharmacy, Woosuk University, Republic of Korea, [3]Department of Biochemistry and Molecular Biology, Republic of Korea

Disclosures: Young Jae Moon, None

LB MON-1039 miR-100 coordinates TGFβ and Wnt signaling in osteocyte mechanotransduction

*Neha Dole[1], David Monteiro[1], Courtney Mazur[1], Tamara Alliston[1], Jason Yang[2], Hikaru Miyazaki[2]. [1]University of California San Francisco, United States, [2]University 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 Schurman[1], Stefaan Verbruggen[2], Tamara Alliston[3]. [1]Department of Orthopaedic Surgery, University of California San Francisco. University of California Berkeley – University of California San Francisco Graduate Program in Bioengineering, United States, [2]Department of Biomedical Engineering, Columbia University, United States, [3]Department 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 Chen[1], Zulekha Khan[2], Nicholas Pocock[3]. [1]St Vincent's Hospital, Australia, [2]St Vincent's Clinic, Australia, [3]St 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 Kawano[1], Shoichi Ichimura[1], Masaichi Hasegawa[1], Shoichi Kurosaki[2], Yoshiki Ieda[2]. [1]Kyorin University, Japan, [2]Shirakawa 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 Ognjenovic[1], Warren Raymond[1], Helen Keen[1], David Preen[1], Charles Inderjeeth[2], Johannes Nossent[2]. [1]university of Western Australia, Australia, [2]University 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 Coursein Lebanese from a Large Laboratory Database

*Randa Saad[1], Ghada El-Hajj Fuleihan[1], Vanessa Akiki[2]. [1]Calcium Metabolism and Osteoporosis Program, WHO Collaborating Center for Metabolic Bone Disorders at the American University of Beirut-Medical Center, Beirut, Lebanon, Lebanon, [2]Endocrinology 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 Schousboe[1], Lisa Langsetmo[2], Brent Taylor[2], Allyson Kats[2], Tien Vo[2], Kristine Ensrud[2], Pawel Szulc[3], Joshua Lewis[4]. [1]Park Nicollet Clinic & HealthPartners Institute; University of Minnesota, United States, [2]University of Minnesota, United States, [3]INSERM, Univeristy of Lyon, France, [4]Edith 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 Tran[1], Dana Bliuc[2], Louise Hansen[3], Bo Abrahamsen[4], Joop van den Bergh[5], John A Eisman[6], Tineke van Geel[7], Piet Geusens[8], Peter Vestergaard[9], Tuan V Nguyen[10], Jacqueline R Center[11]. [1]Osteoporosis and Bone Biology, Garvan Institute of Medical Research; Faculty of Medicine, UNSW Sydney Australia, Australia, [2]Osteoporosis and Bone Biology, Garvan Institute of Medical Research; Faculty of Medicine, UNSW Sydney Australia, Australia, [3]Danish Center for Healthcare Improvements, Department of Business and Management, Aalborg University, Aalborg East, Denmark, [4]Department of Medicine, Holbæk Hospital, Holbæk; Department of Clinical Research, Odense Patient Data Explorative Network, University of Southern Denmark, 5000, Odense; Denmark, Denmark, [5]Maastricht 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, [6]Osteoporosis 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, [7]Maastricht University, Research School CAPHRI, Department of Family Medicine, Maastricht, The Netherlands, Netherlands, [8]Maastricht University Medical Center, Research School CAPHRI, Department of Internal Medicine, Subdivision of Rheumatology, The Netherlands; University Hasselt, Biomedical Research Institute, Hasselt, Belgium, Netherlands, [9]Department of Clinical Medicine, Aalborg University, Aalborg, Denmark; Department of Endocrinology, Aalborg University Hospital, Aalborg, Denmark; Steno Diabetes Center North Jutland, Denmark, [10]Osteoporosis 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, [11]Osteoporosis 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 Tran[1], Dana Bliuc[1], Seán O'Donoghue[2], Louise Hansen[3], Bo Abrahamsen[4], Joop van den Bergh[5], Tineke van Geel[6], Piet Geusens[7], Peter Vestergaard[8], Tuan V Nguyen[9], Jacqueline R Center[10]. [1]Bone Biology Division, Garvan Institute of Medical Research; Faculty of Medicine, UNSW Sydney, Australia, [2]Genomics 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, [3]Danish Center for Healthcare Improvements, Department of Business and Management, Aalborg University, Denmark, [4]Department of Medicine, Holbæk Hospital, Holbæk; Department of Clinical Research, Odense Patient Data Explorative Network, University of Southern Denmark, 5000, Odense, Denmark, [5]Maastricht 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, [6]Maastricht University, Research School CAPHRI, Department of Family Medicine, Netherlands, [7]Maastricht University Medical Center, Research School CAPHRI, Department of Internal Medicine, Subdivision of Rheumatology, The Netherlands; University Hasselt, Biomedical Research Institute, Hasselt, Belgium, Netherlands, [8]Department of Clinical Medicine, Aalborg University; Department of Endocrinology, Aalborg University Hospital; Steno Diabetes Center North Jutland, Denmark, [9]Osteoporosis and Bone Biology, Garvan Institute of Medical Research; 8Faculty of Medicine, UNSW; School of Biomedical Engineering, University of Technology Sydney, Australia, [10]Osteoporosis 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 Ximenez[1], Ariane Zamarioli[1], Fernando Barbosa Jr[1]. [1]University 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 Liew[1], Roland Chapurlat[2], Ego Seeman[3]. [1]School of Public Health and Preventive Medicine, Monash University, Australia, [2]INSERM UMR1033 and Université de Lyon, France, [3]Departments 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 Viceral Fat Levels.

*Deepti Sharma[1], Paul Anderson[1], Peter Clifton[1], Howard Morris[1]. [1]University of South Australia, Australia

Disclosures: Deepti Sharma, None

OSTEOPOROSIS - PATHOPHYSIOLOGY

LB MON-1067 Role of Progranulin in Lactation-Induced Bone Loss

*Liping Wang[1], Robert Nissenson[1]. [1]San 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 Ota[1], Yoshiaki Tsuboi[1], Atsushi Inada[1], Hiroki Yonezu[2], Jiro Kato[3]. [1]Department of Orthopaedic Surgery, Nagoya City West Medical Center, Japan, [2]Department of Orthopaedic Surgery, Nagoya City East Medical Center, Japan, [3]Department of Orthopaedic Surgery, Kasugai Municipal Hospital, Japan

Disclosures: Shusuke Ota, None

PARACRINE REGULATORS

LB MON-1076 Adipose-derived stem cells: differetiation to parathoid hormone secreting cells

*Eun Heui Kim[1], Yun Kyung Jeon[1], Sang Soo Kim[1], Wook Yi[1]. [1]Department 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 Lackington[1], Maria Antonia Gomez[1], Maria Hildebrand[1], Mauro Alini[1], Stephan Zeiter[1], Keith Thompson[1]. [1]AO 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 Sun[1], Yangli Xie[1], Lin Chen[1]. [1]Laboratory 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 FRI-558 PPARγ Regulation of Osteocyte Fuel Dependency and Capacity Contributes to the Balance of Systemic Energy Metabolism

*Sudipta Baroi[1], Amit Chougule[2], Beata Lecka-Czernik[2], Patrick Griffin[3]. [1]University of Toledo College of Medicine & Life Sciences, United States, [2]University of Toledo College of Medicine and Life Sciences, United States, [3]The Scripps Research Institute, United States

Disclosures: Sudipta Baroi, None

12:20 pm FRI-440 ASBMR 2019 Annual Meeting Young Investigator Award
Truncating Mutations in Recql4 Cause a Low Bone Mass Phenotype, but Not Osteosarcoma

*Wilson Castillo-Tandazo[1], Monique Smeets[1], Natalie Sims[1], Carl Walkley[2]. [1]St. Vincent's Institute; Department of Medicine, St. Vincent's Hospital, University of Melbourne, Australia, [2]St. 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-Benayed[1], Mitchell Schaffler[1], Jelena Basta-Plajkic[1], Robert J Majeska[1]. [1]The 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 Kitase[1], Alberto Smargiassi[1], Lynda Bonewald[1], Nuria Lara[2], Mark Johnson[3]. [1]Indiana University, United States, [2]University of Missouri at Kansas City, United States, [3]University 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 Samsa[1], Murali Mamidi[1], Lindsay Bashur[1], Guang Zhou[1]. [1]Case Western Reserve University, United States

Disclosures: William Samsa, None

12:40 pm FRI-833

Insights from Lexicon Pharmaceuticals' Genome5000™ Mouse Gene Knockout Campaign

*Robert Brommage[1], David R. Powell[1], Peter Vogel[2]. [1]Lexicon Pharmaceuticals, United States, [2]St 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 Kittaka[1], Tetsuya Yoshimoto[1], Yasuyoshi Ueki[1], Collin Schlosser[2], Mikihito Kajiya[3], Hidemi Kurihara[3], Ernst Reichenberger[4]. [1]Department of Biomedical Sciences and Comprehensive Care, Indiana University School of Dentistry, Indianapolis, United States, [2]Department of Orthodontics and Dentofacial Orthopedics, University of Missouri-Kansas City, School of Dentistry, United States, [3]Department of Periodontal Medicine, Applied Life Sciences, Institute of Biomedical & Health Sciences, Graduate School of Biomedical & Health Sciences, Hiroshima University, Japan, [4]Department 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-Gomez[1], Katerina Trajanoska[1], M. Carola Zillikens[1], Andre G. Uitterlinden[1], Fernando Rivadeneira[1], Chun Chieh Fan[2], Anders M. Dale[2], Tyler M. Seibert[2], Ole A. Andreassen[3]. [1]Department of Internal Medicine, Erasmus University Medical Centre, Netherlands, [2]Center for Multimodal Imaging and Genetics, University of California San Diego, United States, [3]NORMENT, 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 Sankar[1], Elsa Mevel[1], Justin Williams[1]. [1]Indiana 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 Zieba[1], Elda Munivez[1], Alexis Castellon[1], Brendan Lee[1]. [1]Baylor 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 Beavers[1], Lauren Fasth[1], Nancy Waltman[2], Kevin Kupzyk[2], Laura Flores[2], Laura Bilek[2], Joan Lappe[3]. [1]Wake Forest University, United States, [2]University of Nebraska Medical Center, United States, [3]Creighton 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-Steele[1]. [1]Eli 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 Dempster[1], Jeri W Nieves[1], Felicia Cosman[1], Peter W Butler[2], Li Chen[2], Rachel B Wagman[2], Mathias P Bostrom[3], Hua Zhou[4], Nicola Pannacciulli[5]. [1]Columbia University, United States, [2]Amgen Inc., United States, [3]Hospital for Special Surgery, United States, [4]Helen Hayes Hospital, United States, [5] Amgen 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 Flores[1], Sarah Nelson[1], Kevin Kupzyk[1], Nancy Waltman[1], Sophia Pankratz[1], Laura Bilek[1], Joan Lappe[2]. [1]University of Nebraska Medical Center, United States, [2]Creighton 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 Schini[1], Tatiane Vilaca[1], Richard Eastell[1], Susan Harnan[2], Anthea Sutton[2], Edith Poku[2], Steve Cummings[3]. [1]Academic Unit of Bone Metabolism, The University of Sheffield, UK, United Kingdom, [2]School of Health and Related Research, The University of Sheffield, UK, United Kingdom, [3]University 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 Lambert[1], Amy Harding[1], Steven Watson[1], Benjamin Weeks[1], Belinda Beck[2]. [1]School of Allied Health Sciences, Griffith University, Gold Coast, Australia, [2]Menzies 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 Betts[1], Charles Ledoux[1], Daniele Boaretti[1], Ralph Müller[1], Mauricio Aguilera[2], Najma Saleem[2], Mauricio Aguilera[3], Najma Saleem[3]. [1]Institute for Biomechanics, ETH Zurich, Switzerland, [2]Amgen Inc., Mexico, [3]Amgen 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 Qiu[1], George Divine[1], Elizabeth Warner[1], Sudhaker Rao[1]. [1]Henry Ford Health System, United States

Disclosures: Shijing Qiu, None

12:55 pm
FRI-776

Risk predictors for seniors at imminent risk of fracture

*Richard Sheer[1], Yawen Jiang[2], Lavanya Sudharshan[3], Margaret Pasquale[3]. [1]Humana Healthcare Research Inc., United States, [2]Amgen, United States, [3]Humana 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 Sugimoto[1], Masataka Shiraki[2], Hiroshi Hagino[3], Takeshi Yoshimura[4], Toshitaka Nakamura[5]. [1]Eikokai Ono Hospital, Japan, [2]Research Institute and Practice for Involutional Diseases, Japan, [3]School of Health Science, Tottori University, Japan, [4]Medical Affairs Department, Asahi Kasei Pharma Corporation, Japan, [5]Toto 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™ multiaxial 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 Ispen 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 HorizonTM 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 propetide 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 it 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 µCT 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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