

ASBMR[®] 2016

Annual Meeting

Preliminary Program

September 16–19, 2016
Georgia World Congress Center
Atlanta, Georgia, USA

Register Now at
www.asbmr2016.org!



Join us in Atlanta this September!

Attend the ASBMR 2016 Annual Meeting to discover the latest in bone, mineral and musculoskeletal research and learn about new opportunities for collaboration. Join over 3,000 basic and clinical scientists from 70 countries around the world for more than 100 education sessions and over 1,200 poster presentations on a variety of topics.

Learn what your peers like about the ASBMR Annual Meeting.



2016 Scientific Program Committee

ASBMR President

Douglas P. Kiel, M.D., M.P.H.,
Institute for Aging Research
(USA)

Program Co-Chairs

Serge Ferrari, M.D., Geneva
University Hospital and
Faculty of Medicine
(Switzerland)

Ernestina Schipani, M.D., Ph.D.
University of Michigan (USA)

Jennifer Westendorf, Ph.D.,
Mayo Clinic (USA)

Schedule-at-a-Glance (Official Scientific Program Overview)

Friday, September 16

8:00 am – 9:30 am	Gerald D. Aurbach Lecture & Award Presentations
9:30 am – 10:00 am	Break
10:00 am – 11:30 am	Highlights of the ASBMR 2016 Annual Meeting
10:30 am – 12:00 pm	Grant Writing Workshop
	Hands-on Workshop: How to Get the Most Out of the UCSC Genome Browser*
10:45 am – 11:45 am	Meet-the-Professor Sessions
11:30 am – 12:00 pm	Break
12:00 pm – 1:15 pm	Symposium – The Importance of Cortical Bone Through the Life Span
1:15 pm – 1:45 pm	Symposium – EPO in Bone Physiology and Disease
	Break
1:45 pm – 2:45 pm	Concurrent Orals
2:45 pm – 3:00 pm	Break
3:00 pm – 4:00 pm	Concurrent Orals
4:00 pm – 4:30 pm	Break
4:30 pm – 5:30 pm	ASBMR/ECTS Clinical Debate – Microdamage is Good for Bone
4:30 pm – 5:30 pm	Symposium – Matricellular Proteins
5:30 pm – 7:00 pm	Welcome Reception & Plenary Poster Session

Saturday, September 17

6:45 am – 8:00 am	ASBMR Networking Breakfast
8:00 am – 9:30 am	Louis V. Avioli Lecture & Award Presentations
9:30 am – 9:45 am	Break
9:45 am – 11:00 am	Plenary Orals
11:00 am – 12:00 pm	Meet-the-Professor Sessions
11:00 am – 12:30 pm	Fracture Risk Assessment to Target Treatment: Effectiveness and Cost-utility
	Hands-on Workshop: Interpreting the Influence of Genomics on Bone Mineral Density*
12:00 pm – 12:30 pm	Break
12:30 pm – 2:30 pm	Poster Session I & Poster Tours
2:30 pm – 4:00 pm	Odd: 12:30 pm – 1:30 pm
	Even: 1:30 pm – 2:30 pm
	Concurrent Orals
4:00 pm – 4:30 pm	Break
4:30 pm – 6:00 pm	Concurrent Orals
6:30 pm – 8:30 pm	Basic Science Evening – Brain Signaling to Bone
6:30 pm – 8:30 pm	Clinical Evening – Can We Close the Treatment Gap for Osteoporosis?
8:30 pm – 11:30 pm	Networking Event

*Requires a separate registration fee.

Schedule-at-a-Glance (Official Scientific Program Overview)

Sunday, September 18		Monday, September 19	
8:00 am – 9:30 am	Plenary Symposium – Gut Microbiome and Bone Homeostasis & Award Presentations	8:00 am – 9:30 am	Concurrent Orals
9:30 am – 9:45 am	Break	9:30 am – 9:45 am	Break
9:45 am – 11:00 am	Plenary Orals	9:45 am – 11:00 am	Plenary Orals
11:00 am – 12:00 pm	Meet-the-Professor Sessions	11:00 am – 12:00 pm	Meet-the-Professor Sessions
11:00 am – 12:30 pm	Publications Workshop: Increase Your Chances of Getting Published	11:00 am – 12:30 pm	Career Development Session: Negotiating for Success
	ASBMR Task Force Reports		Hands-on Workshop: Histomorphometry: An Introduction to Guidelines, Applications and Protocols*
	Hands-on Workshop: Computational Methods for RNA-Seq Data Analysis and Network Modeling*		
	Hands-on Workshop: Biomechanical Phenotyping: How to Get the Most Out of a Phenotype*	12:00 pm – 12:30 pm	Break
12:00 pm – 12:30 pm	Break	12:30 pm – 2:30 pm	Poster Session III & Poster Tours
12:30 pm – 2:30 pm	Poster Session II & Poster Tours	2:30 pm – 4:00 pm	Odd: 12:30 pm – 1:30 pm
2:30 pm – 4:00 pm	Odd: 12:30 pm – 1:30 pm		Even: 1:30 pm – 2:30 pm
	Even: 1:30 pm – 2:30 pm		Plenary Symposium – Determinants of Skeletal Aging
	Concurrent Orals	4:00 pm – 5:00 pm	Closing Reception
4:00 pm – 4:30 pm	Break		
4:30 pm – 5:45 pm	Symposium – BMPs in Development and Disease		
6:00 pm – 7:00 pm	Symposium – Greg Mundy Symposium: New Mechanisms on Cancer and Bone		
	ASBMR Town Hall Meeting		

*Requires a separate registration fee.

Plenary Lectures



Gerald D. Aurbach Lecture

Friday, September 16 | 8:00 am – 9:30 am

Personalized Medicine: Using omics Profiling and Big Data to Understand and Manage Health and Disease

Michael Snyder, Ph.D., Stanford University (USA)

Understanding health and disease requires a detailed analysis of both our DNA and the molecular events that determine human physiology. We performed an integrated Personal Omics Profiling (iPOP) on 70 healthy and prediabetic human subjects over periods of viral infection as well as during controlled weight gain and loss. Our iPOP integrates multiomics information from the host (genomics, epigenomics, transcriptomics, proteomics and metabolomics) and from the gut microbiome. Longitudinal multiomics profiling reveals extensive dynamic biomolecular changes occur during times of perturbation, and the different perturbations have distinct effects on different biomolecules in terms of the levels and duration of changes that occur. Overall, our results demonstrate a global and system-wide level of biochemical and cellular changes occur during environment exposures.

About Dr. Michael Snyder

Michael Snyder is the Stanford Ascherman Professor and Chair of Genetics and the Director of the Center of Genomics and Personalized Medicine. Dr. Snyder received his Ph.D. training at the California Institute of Technology and carried out postdoctoral training at Stanford University. He is a leader in the field of functional genomics and proteomics, and one of the major participants of the ENCODE project. His laboratory study was the first to perform a large-scale functional genomics project in any organism, and has developed many

technologies in genomics and proteomics. These include the development of proteome chips, high resolution tiling arrays for the entire human genome, methods for global mapping of transcription factor binding sites (ChIP-chip now replaced by ChIP-seq), paired end sequencing for mapping of structural variation in eukaryotes, de novo genome sequencing of genomes using high throughput technologies and RNA-Seq. These technologies have been used for characterizing genomes, proteomes and regulatory networks. Seminal findings from the Snyder laboratory include the discovery that much more of the human genome is transcribed and contains regulatory information than was previously appreciated, and a high diversity of transcription factor binding occurs both between and within species. He has also combined different state-of-the-art “omics” technologies to perform the first longitudinal detailed integrative personal “omics” profile (iPOP) of person and used this to assess disease risk and monitor disease states for personalized medicine. He is a cofounder of several biotechnology companies, including Protometrix (now part of Life Technologies), Affomix (now part of Illumina), Excelix, and Personalis, and he presently serves on the board of a number of companies.

Plenary Lectures



Louis V. Avioli Lecture

Saturday, September 17 | 8:00 am – 9:30 am

Sex Steroids, Coupling, and Age-Related Bone Loss

Sundeep Khosla, M.D., Mayo Clinic (USA)

This lecture will summarize a scientific journey that spans nearly 3 decades: it starts with classical clinical investigation and moves to mouse models and then to studying fundamental aging mechanisms in bone, driven at each stage by questions that could not be addressed by my group alone, requiring a true “team science” approach. My interest in sex steroid action on bone dates back to the early 1990s, when I first began working with Larry Riggs, who led one of the two groups (the other being Komm/O’Malley) to identify estrogen receptors in osteoblasts. It was around that time that the unique estrogen receptor mutant male was described with the remarkable finding of osteopenia despite normal testosterone levels. This led to a series of clinical investigative studies by my group and others dissecting the relative contributions of estrogen versus testosterone towards regulating bone metabolism in normal human males. The clinical models we developed to investigate this issue led fortuitously to observations, in humans, of an initial “uncoupling” and subsequent “re-coupling” of bone resorption to bone formation. To better understand the underlying mechanisms for our clinical observations, I developed a close partnership with Merry Jo Oursler. Using mouse and cellular models, we identified several osteoclast-osteoblast coupling factors (“clastokines”) along with evidence, in mice and in humans, that this coupling may be impaired with aging. With the recruitment of Jim Kirkland to Mayo Clinic to lead the Aging Center, my group moved further into studying fundamental aging mechanisms in bone, including recent

work identifying senescent cells in bone and subsequently eliminating these cells in aged mice. As the lecture will highlight, the true pleasure in this journey has come not only from the science, but also from the privilege of being able to work with close collaborators at Mayo over almost 30 years to tackle scientifically and clinically important questions using a combination of human, mouse, and cellular models.

About Dr. Sundeep Khosla

Dr. Sundeep Khosla is the Dr. Francis Chucker and Nathan Landow Research Professor of Medicine and Physiology, Mayo Foundation Distinguished Investigator, Director of the Center for Clinical and Translational Science, and Dean for Clinical and Translational Science at Mayo Clinic. Dr. Khosla received his M.D. from Harvard Medical School. He was subsequently a resident in Internal Medicine and a fellow in Endocrinology at the Massachusetts General Hospital. Dr. Khosla has served as Chair of the NIH SBDD Study Section, on the Council of NIA, and as President of ASBMR. He is currently serving on the Council of NIAMS. Dr. Khosla has received numerous awards and honors for his work, including the Frederic C. Bartter and the William F. Neuman awards from ASBMR, the Outstanding Clinical Investigator Award from the Endocrine Society, and election to the ASCI and AAP. Dr. Khosla has served as Associate Editor of the *Journal of Bone and Mineral Research* and currently serves as the Editor-in-Chief of *Bone*.

Symposia

Symposia are sessions that feature three to four invited talks covering basic and/or clinical topics.

Friday, September 16

Symposium – EPO in Bone Physiology and Disease

12:00 pm – 1:15 pm

Supported by an Educational Grant from Lilly

Co-Chairs:

Natalie Sims, M.D., St. Vincent's Institute on Medical Research (Australia)

Russel Taichman, D.M.D., University of Michigan, School of Dentistry (USA)

Overview of the Field

Carl Walkley, Ph.D., St. Vincent's Institute of Medical Research (Australia)

EPO and Osteoclast Regulation

Yankel Gabet, D.M.D., Ph.D., Sackler Faculty of Medicine, Tel Aviv University (Israel)

EPO and FGF23

Kenneth White, Ph.D., Indiana University – Purdue University Indianapolis (USA)

Symposium – The Importance of Cortical Bone through the Life Span

12:00 pm – 1:15 pm

Supported by an Educational Grant from Merck & Co., Inc.

Co-Chairs:

Shreyasee Amin, M.D., M.P.H., Mayo Clinic (USA)

Angela Cheung, M.D., Ph.D., University Health Network-University of Toronto (Canada)

QCT Evaluation of Hip Bone Fragility

Klaus Engelke, Ph.D., University of Erlangen (Germany)

Assessment and Role of Peripheral Cortical Porosity

Steven Boyd, Ph.D., University of Calgary (Canada)

Practical Clinical Relevance/Role of Cortical Bone in Growth

Mary Leonard, M.D., Stanford School of Medicine (USA)

Basic Science Session - Matricellular Proteins

4:30 pm – 5:30 pm

Co-Chairs:

Kurt Hankenson, D.V.M., Ph.D., Michigan State University (USA)

Anna Teti, Ph.D., University of L'Aquila (Italy)

Fibrillins and TGFbeta in the Bone and Bone Marrow Environments

Francesco (Checco) Ramirez, DSc, Icahn School of Medicine at Mount Sinai (USA)

Small Leucine-rich Proteoglycans in Bone Pathophysiology

Marian Young, Ph.D., National Institutes of Health (USA)



Symposia

Symposia are sessions that feature three to four invited talks covering basic and/or clinical topics.

Sunday, September 18

Plenary Symposium – Gut Microbiome and Bone Homeostasis

8:00 am – 9:30 am

Supported by an Educational Grant from Merck & Co., Inc.

Co-Chairs:

Laura McCabe, Ph.D., Michigan State University (USA)

Eric Orwoll, M.D., Oregon Health and Science University (USA)

Overview of the Field and Interaction between Human Genome and Gut Microbiome

Andre Uitterlinden, Ph.D., Erasmus University Medical Center (The Netherlands)

Interaction between Nutrition and Microbiome

Rene Rizzoli, M.D., Geneva University Hospital, University of Geneva (Switzerland)

Experimental Approach of Bone and the Microbiome

Roberto Pacifici, M.D., Emory University (USA)



Symposium – BMPs in Development and Disease

4:30 pm – 5:45 pm

Supported by an Educational Grant from Lilly

Co-Chairs:

Hari Reddi, Ph.D., University of California, Davis Medical Center (USA)

Eileen Shore, Ph.D., University of Pennsylvania (USA)

BMP Receptors and Bone Development

Karen Lyons, Ph.D., University of California Los Angeles (USA)

BMPs and Periosteal Bone Growth

Vicky Rosen, Ph.D., Harvard School of Dental Medicine (USA)

Activin and FOP

Aris Economides, Ph.D., Regeneron Pharmaceuticals, Inc. (USA)

Symposium – Greg Mundy Symposium: New Mechanisms on Cancer and Bone

4:30 pm – 5:45 pm

Co-Chairs:

Claire Edwards, Ph.D., University of Oxford (United Kingdom)

Robert Gagel, M.D., University of Texas, Anderson Cancer Center (USA)

Bone Metastasis in the Hypoxia

Amato Giaccia, Ph.D., Stanford Medicine (USA)

miRNAs and Cancer Metastasis in Bone

Phillipe Clezardin, Ph.D., DSc, INSERM and University of Lyon (France)

Chondroblastomas

Zhiguo Zhang, Ph.D., Columbia University (USA)

Symposia

Symposia are sessions that feature three to four invited talks covering basic and/or clinical topics.

Monday, September 19

Plenary Symposium – Determinants of Skeletal Aging

2:30 pm – 3:45 pm

Supported by an Educational Grant from Merck & Co., Inc.

Co-Chairs:

Robert Pignolo, M.D., Ph.D., University of Pennsylvania (USA)

Rivka Pollack-Dresner, M.D., Hadassah Medical Center (Israel)

The Role of Genetics in Aging

Simon Melov, Ph.D., Buck Institute for Research on Aging (USA)

Treatments to Delay Aging

Amy Wagers, Ph.D., Harvard Stem Cell Institute (USA)

Senescence and Aging

Ben Alman, M.D., Duke University School of Medicine (USA)

I always learn something new every year. It is always worth the effort and the expense.

– ASBMR 2015 Annual Meeting Attendee

The scientific program is outstanding, with a level of depth and breadth that no other conference manages.

– ASBMR 2015 Annual Meeting Attendee



Meet-the-Professor Sessions

The Meet-the-Professor Sessions are informal sessions designed to provide an opportunity for meeting attendees to interact with experts in an intimate setting and discuss specific clinical and research topics. The sessions will be held Friday through Monday. Be sure to purchase a Meet-the-Professor Handout Booklet that contains all the handouts supplied by the professors. The booklet can be purchased for \$20 USD when you register, to be picked up on site at the Convention Center. Handout booklets will also be available in PDF formation for download in advance of the meeting at no charge to members and meeting attendees.

Please Note: Tickets are not required for these sessions; however, space is extremely limited. Interested individuals are welcome to attend these sessions on a first-come, first-served basis. Room restrictions and professor preferences will dictate number of attendees.

Friday, September 16 | 10:45 am – 11:45 am

- B Advances in Osteoarthritis Imaging and Treatment**
Nancy Lane, M.D., University of California Davis Medical Center (USA) and Sharmila Majumdar, Ph.D., University of California, San Francisco (USA)
- C Updates on Nutritional Influences on the Musculoskeletal System**
Bess Dawson-Hughes, M.D., Tufts University (USA)
- C Using Medicare Claims Data to Study Fracture Epidemiology**
Sarah Berry, M.D., M.P.H., Hebrew Rehabilitation Center (USA) and Nicole Wright, Ph.D., M.P.H., University of Alabama at Birmingham (USA)
- T Genome Editing: From Patients to Mice with CRISPR/Cas**
Bart Williams, Ph.D., Van Andel Research Institute (USA)

B Basic Session **C** Clinical Session **T** Translational Session

Saturday, September 17 | 11:00 am – 12:00 pm

- B Matricellular Proteins in Bone Remodeling and Repair: Novel Insights**
Andrea Alford, Ph.D., University of Michigan (USA) and Kurt Hankenson, D.V.M., Ph.D, Michigan State University (USA)
- C Biomechanics Meets Bone Biology: The Ultimate in Multidisciplinary Translational Research**
Mary Bouxsein, Ph.D., Harvard Medical School (USA) and Clifford Rosen, M.D., Maine Medical Center Research Institute (USA)
- C Sequential and Combination Therapy for Osteoporosis: Where are We now?**
Supported by an Educational Grant from Lilly
Felicia Cosman, M.D., Helen Hayes Hospital (USA)
- T Finding Somatic Mutations**
Matthew Warman, M.D., Boston Children's Hospital (USA)
- C Utility and Limitations of TBS in Fracture Risk Assessment**
Bill Leslie, MD, MSc, FRCPC, University of Manitoba (Canada)
- C Progenitors for Bone Growth and Repair**
Hank Kronenberg, M.D., Massachusetts General Hospital (USA) and Noriaki Ono, D.D.S., Ph.D., University of Michigan School of Dentistry (USA)

Meet-the-Professor Sessions

Sunday, September 18 | 11:00 am – 12:00 pm

B Phosphate Sensing: Two Sensors – A Metabolic and an Endocrine One?

Clemens Bergwitz, M.D., Yale School of Medicine (USA)

B Pathogenesis and Treatment of Heterotopic Ossification

Benjamin Levi, M.D., University of Michigan (USA)

C A Guide to Basic Scientist and Clinician Collaboration

*Marie-Hélène LaFage-Proust, M.D., Université de Lyon (France) and
Larry Suva, Ph.D., Texas Veterinary Medical Center (USA)*

C What is the Optimal Dose and Administration of Vitamin D Supplements in Falls and Fractures Preventions?

*Supported by an Educational Grant from Lilly
Kerrie Sanders, Ph.D., Institute for Health and Aging (USA)*

C Hypophosphatasia

*Jose Luis Millan, Ph.D., Sanford Burnham Prebys Medical (USA) and
Michael Whyte, M.D., Shriners Hospital for Children (USA)*

C Fracture Risk of Osteoporosis Therapy

*Supported by an Educational Grant from Merck & Co., Inc.
Michael McClung, M.D., Oregon Osteoporosis Center (USA)*

T Bone Marrow Microenvironment and Myeloma

*Claire Edwards, Ph.D., University of Oxford (United Kingdom) and
David Roodman, M.D., Ph.D., Indiana University (USA)*

T Skeletal Development and Mineral Metabolism in the Fetus and Newborn: Insights from Animal Models and Limited Human Data

*Chris Kovacs, M.D., Memorial University of Newfoundland (Canada) and
Deborah Krakow, M.D., David Geffen School of Medicine at UCLA (USA)*

The ASBMR Annual Meeting provides a unique and unparalleled opportunity to foster my growth as a bone researcher by providing a wide breadth of educational bone lectures on topics ranging from basic bone research to more applied, therapy-based research.

– ASBMR 2015 Annual Meeting Attendee

B Basic Session

C Clinical Session

T Translational Session

Meet-the-Professor Sessions

Monday, September 19 | 11:00 am – 12:00 pm

B miRs and Bone Homeostasis

Anne Delaney, Ph.D., University of Connecticut (USA)

B Osteogenesis Imperfecta: Novel Therapeutic Approaches

Kenneth Kozloff, Ph.D., University of Michigan (USA) and Joan Marini, M.D., Ph.D., National Institute of Child Health and Human Development (USA)

It is one of the most productive meetings for me to interact with clinicians and scientists in bone outside of my field and to arrange cross-disciplinary collaboration. The meeting ALWAYS conflicts with several orthopedic meetings but I prioritize this meeting because of its quality, both educational and learning, even if I can only stay for a day.

– ASBMR 2015 Annual Meeting Attendee

The ASBMR meeting is a phenomenal opportunity to learn cutting-edge science, receive feedback on exciting new data, network with colleagues, and reconnect with old friends.

– ASBMR 2015 Annual Meeting Attendee

T Bone Marrow Adipose Tissue: Development and Detection

Mark Horowitz, Ph.D., Yale University School of Medicine (USA)

T Skeletal Regeneration and Fracture Repair

TBD

C How to Evaluate Sarcopenia a Risk Factor for Falls and Fractures?

TBD

C Following up GWAS Findings – From the Dry Lab to the Wet Lab

Matt Maurano, Ph.D., New York University (USA) and Brent Richards, M.D., M.Sc., McGill University (Canada)

Special Sessions

Friday, September 16

NEW! ASBMR Clinical Breakfast: How Discoveries Lead to Treatment of Rare Bone Diseases

6:30 am - 8:00 am

Supported by Educational Grants from Alexion Pharmaceuticals, Shire, and Ultragenyx Pharmaceuticals, Inc.

Chair:

Eileen M. Shore, Ph.D., Professor, University of Pennsylvania (USA)

Hypophosphatasia

Michael P. Whyte, M.D., Professor-Medicine, Pediatrics & Genetics, Shriners Hospital for Children (USA)

Hypoparathyroidism

Dolores Shoback, M.D., Professor of Medicine, VA Medical Center (USA)

XLH in Adults

Karl Insogna, M.D., Yale University (USA)

Highlights of the ASBMR 2016 Annual Meeting

10:00 am - 11:30 am

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.

Basic Science Meeting Overview

Roland Baron, D.D.S., Ph.D., Harvard School of Medicine and of Dental Medicine (USA)

Clinical Science Meeting Overview

John Bilezikian, M.D., Columbia University College of Physicians and Surgeons (USA)

Grant Writing Workshop: What to Choose and How to Fund It

10:00 am - 11:30 am

Sponsored by the ASBMR Membership Engagement and Education Committee

Join your fellow researchers and colleagues in this interactive session to discuss potential obstacles to grant writing and strategic ways to overcome them. The following topics will be covered in this unique, 90 minute session: New NIH Requirements, International Funding, and Choosing the Appropriate Grant Mechanism and/or Funding Agency. As an attendee, you'll have the opportunity to participate in one or all of these discussions, as you choose. This is a can't-miss opportunity for researchers at any career stage who want to gain valuable insight into getting their research funded.

Co-Chairs:

Melissa Kacena, Ph.D., Indiana University School of Medicine (USA), Membership Engagement Committee Chair

Stavroula Kousteni, Ph.D., Columbia University (USA), Membership Engagement and Education Committee Co-Chair

ASBMR/ECTS Clinical Debate – Microdamage Is Good for Bone

3:00 pm - 4:00 pm

Supported by an Educational Grant from Lilly

Co-Chairs:

Claus C. Glüer, Ph.D., Christian Albrechts Universitaet zu Kiel (Germany)

Mary Bouxsein, Ph.D., Harvard Medical School (USA)

Debaters:

For the Motion

Mitchell Schaffler, Ph.D., The City College of New York (USA)

Against the Motion

Ralph Mueller, Ph.D., ETH Zurich (Switzerland)

Special Sessions

Saturday, September 17

ASBMR/IOF Co-sponsored Session - Fracture Risk Assessment to Target Treatment: Effectiveness and Cost-utility

11:00 am – 12:00 pm

Co-Chairs:

Jane Cauley, PhD, University of Pittsburgh Graduate School of Public Health (USA)

John Kanis, MD, University of Sheffield (United Kingdom)

Innovations in Approach to Absolute Risk Assessment

Cyrus Cooper, OBE, FMedSci, University of Southampton and University of Oxford (United Kingdom)

Prospective RCTs to Evaluate Effectiveness of Such Strategies

Michael McClung, MD, Oregon Osteoporosis Center (USA)

Economic Consequences of Treatment on Basis of Fracture Risk Assessment TBD

Basic Evening – Brain Signaling to Bone

6:30 pm – 8:30 pm

Space is limited and available on a first-come, first-served basis. Attendees must be registered for the ASBMR 2016 Annual Meeting

Co-Chairs:

Patricia Ducey, Ph.D., Columbia University (USA)

Florent Elefteriou, Ph.D., Baylor College of Medicine (USA)

Vestibular Signals and Bone Remodeling

Florent Elefteriou, Ph.D., Baylor College of Medicine (USA)

The Sympathetic Nervous System and Bone

Clifford Rosen, M.D., Maine Medical Center (USA)

Energy Expenditure, Bone Formation and the Hypothalamus

Roland Baron, DDS, Ph.D., Harvard School of Medicine and of Dental Medicine (USA)



Clinical Evening – Can We Close the Treatment Gap for Osteoporosis?

6:30 pm – 8:30 pm

Supported by Educational Grants from Amgen, Inc., Merck & Co., Inc., Radius Health, and UCB Biosciences

Space is limited and available on a first-come, first-served basis. Attendees must be registered for the ASBMR 2016 Annual Meeting

Co-Chairs:

Felicia Cosman, M.D., Helen Hayes Hospital (USA)

Socrates Papapoulos, M.D., Leiden University Medical Center (The Netherlands)

Revisiting the Screening Recommendations for Osteoporosis in Men and Women

Juliet Compston, M.D., University of Cambridge (United Kingdom)

What are the Real Reductions with Treatments and What are the Risks: How do They Compare?

Dennis Black, Ph.D., University of California San Francisco Department of EPI and BioStat (USA)

What are the Outstanding Needs for Overcoming the Barriers to Treating Individuals with Osteoporosis, and How Does the Future Look?

Susan Greenspan, M.D., University of Pittsburgh (USA)

Special Sessions

Sunday, September 18

Publications Workshop: Increase Your Chances of Getting Published

11:30 am – 12:30 pm

Meet with *JBMR*® Editor-in-Chief Dr. Juliet Compston at this year's Publications Workshop. You'll learn how to improve the quality of your journal manuscripts, what *JBMR*® is looking for and how to increase your chances of getting published. Whether you're a new author considering submitting a paper or a seasoned journal contributor, don't miss this unique opportunity to hear directly from and interact with *JBMR*®'s editor!

ASBMR Task Force Reports

11:30 am – 12:30 pm

This session will feature presentations from the ASBMR-ORS Task Force on Cell Based Therapies and the ASBMR Task Force on the Long Term Safety and Efficacy of Vertebral Augmentation.

ASBMR-ORS Task Force on Cell Based Therapies

Co-Chairs:

Regis O'Keefe, M.D., Washington University in St. Louis (USA)

Rocky S. Tuan, Ph.D., University of Pittsburgh (USA)

ASBMR Task Force on the Long Term Safety and Efficacy of Vertebral Augmentation

Co-Chairs:

Mary Bouxsein, Ph.D., Beth Israel Deaconess Medical Center, Harvard Medical School (USA)

Peter Ebeling, M.D., FRACP, Monash University (Australia)

Monday, September 19

Career Development Session: Negotiating for Success

11:00 am – 12:30 pm

Sponsored by the ASBMR Membership Engagement and Education Committee and the Women in Bone and Mineral Research Committee

Investigators at any stage will eventually be faced with the opportunity for negotiation. This session will provide the chance to learn and understand strategies that can optimize effectiveness in negotiation settings, and to hear about the experiences described by other academic medical faculty regarding negotiation. Michael Silverman, the Chief Legal Officer at SmithBucklin, will offer his expertise in negotiation, along with tactics that will work in any given scenario: salary, promotion, research space, clinical load, etc. Participants will then have the opportunity to debrief and discuss negotiation strategies with experienced leaders in the field for a specific topic, along with a chance to practice these strategies with their neighbor.

Co-Chairs:

Roberta Faccio, Ph.D., Washington University in St. Louis School of Medicine (USA), Women in Bone and Mineral Research Committee Chair

Melissa Kacena, Ph.D., Indiana University School of Medicine (USA), Membership Engagement Committee Chair

Stavroula Kousteni, Ph.D., Columbia University (USA), Membership Engagement and Education Committee Co-Chair

Speakers:

Michael Silverman, Chief Legal Officer at SmithBucklin Corporation

NEW! Hands on Workshops

Learn new skills or refine existing ones at the ASBMR Annual Meeting. For the first time, the Annual Meeting will feature several interactive Hands-on Workshops taught by experts in the field. Using model datasets, our experts will teach the latest technologies and research tools, allowing you to gain practical insight and tips that you can immediately utilize in your own research.

Friday, September 16

How to Get the Most Out of the UCSC Genome Browser

10:30 am – 12:00 pm

Registration Fee: \$50

Chair: Robert Kuhn, Ph.D., University of California, Santa Cruz (USA)

The aim of this workshop is to show how the UCSC Genome Browser can be used to access genome-wide data in support of research efforts. The Browser displays annotations of a variety of types, including the location and function of genes, histone modification, transcription factor binding sites, known variation at all scales from a single nucleotide (SNPs) to large copy-number variants (CNVs) both with and without phenotypic association and many others, which can all be visualized together in a consistent format and interface. Users may upload their own experimental data, including RNA-seq and whole-exome sequencing data for display alongside resident data and can save and share Browser sessions with colleagues or export for publication. Finally, the Table Browser is used to perform intersections and data filtering, and can make fresh data tracks from the output.

Learning Objectives:

1. Learn basic navigation and the Genome Browser paradigm: The relationship between database tables and Browser visualization tracks.
2. Learn how to identify useful datasets and drill down to learn details about genes, SNPs and other annotations, including outlinks to external resources.
3. Load your own data onto the Genome Browser for co-display with Browser-resident data.
4. Save your screen sessions and share with colleagues.
5. Use the Table Browser to mine data with filters and intersections, including intersecting your data with Browser data.

Saturday, September 17

Interpreting the Influence of Genomics on Bone Mineral Density

11:00 am – 12:30 pm

Registration Fee: \$50

Co-Chairs: Emma Duncan, M.D., Ph.D., Royal Brisbane and Women's Hospital (Australia) and Paul Leo, Ph.D., University of Queensland Center for Clinical Genomics (Australia)

Bone mineral density is highly heritable with 60-90% of its variation predicted to be genetically determined. In the last 5 years considerable progress has been made in mapping genes that affect bone mineral density and fracture risk. This progress has been driven by Genome Wide Association Studies (GWAS) that have identified over 150 loci that contribute to this polygenic disease. In the genomic era how will this data inform diagnosis, risk prediction and pharmacogenomics? In this workshop we will demonstrate how these GWAS studies are conducted using real data.

Learning Objectives:

1. Learn how to account for covariates such as age, weight, and ethnicity in these genetic studies.
2. Use the genetic software routinely used in GWAS studies (PLINK and R).
3. Visualize results using Haploview.
4. Analyze the data to identify plausible candidate genes.
5. Calculate and interpret genetic risk scores.

NEW! Hands on Workshops

Sunday, September 18

Computational Methods for RNA-Seq Data Analysis and Network Modeling

11:00 am – 12:30 pm

Registration Fee: \$50

Co-Chairs: *Andre van Wijnen, Ph.D., Mayo Clinic (USA) and Jonathan Gordon, Ph.D., University of Vermont (USA)*

The aim of this workshop is provide hands-on training on the latest advanced data analysis methodologies. In this workshop we will give insight into how to design an effective RNA-seq experiment, quickly analyze the data, efficiently generate molecular and cellular network models and use the information to infer functionality in living systems. Attendees will use Galaxy, an open source, web-based platform to generate pipelines and workflows that are flexible and can be used as a framework for future analyses.

Learning Objectives:

1. Understand the basics of experimental design, statistical concerns and library construction strategies for RNA-based experiments.
2. Perform alignment and quantification of expression of a small-scale RNA-seq dataset using Galaxy workflows
3. Perform a gene set enrichment (GSEA) and network analysis on a differentially expressed gene set
4. Discuss integrative strategies for combining diverse types of NGS data.

I think this is the most important annual research meeting in the field. That is why I have not missed any year since 1998.

– ASBMR 2015 Annual Meeting Attendee

Biomechanical Phenotyping: How to Get the Most Out of a Phenotype

11:00 am – 12:30 pm

Registration Fee: \$50

Co-Chairs: *Karl Jepsen, Ph.D., University of Michigan (USA) and Ed Guo, Ph.D., Columbia University (USA)*

The aim of this workshop is providing hands-on training on practical guidelines for evaluating the biomechanical properties of mouse long bones. In this workshop we will present definitions of basic biomechanical terms, define “biomechanical mechanisms”, and provide step-by-step instructions on how to analyze bone morphological, compositional, and biomechanical data in a systematic manner using a sample data set provided by the organizers. These guidelines are intended to help researchers get the most out of their data by differentiating among biomechanical pathways arising from a genetic (or environmental) perturbation and that should provide additional clues to gene function and disease mechanism. Attendees are encouraged to bring their own data (body weights; morphological traits including total cross-sectional area, cortical area, marrow area, moments of inertia; tissue-mineral density; organic contents; whole bone mechanical properties including stiffness, maximum load, post-yield deflection and work-to-fracture; whole bone fracture mechanics test data including load and crack propagation data for fracture toughness measurement). A background in basic statistical analysis methods (regression analyses) is helpful but not required. Attendees are encouraged to bring laptops along with basic statistical software packages (e.g., Excel, GraphPad Prism, MiniTab, or SPSS) or share with others.

Learning Objectives:

1. Understand basic biomechanical terms and basic concepts of biomechanical mechanisms
2. Learn how to adjust data for body size effects.
3. Systematically evaluate morphological, compositional, and biomechanical data to arrive at a biomechanical mechanism.
4. Measure bone material properties using whole bone notched tests.
5. Discuss strengths, weaknesses, and nuances of these methods and how the systematic analysis may provide novel insight into gene function.

NEW! Hands on Workshops

Monday, September 19

Histomorphometry: An Introduction to Guidelines, Applications and Protocols

11:00 am – 12:30 pm

Registration Fee: \$50

Co-Chairs: Deb Novack, M.D., Ph.D., Washington University in St. Louis School of Medicine (USA) and Erica Scheller, Ph.D., DDS, University of Michigan (USA)

The aim of this workshop is to provide an interactive environment to teach qualitative and quantitative histological analysis of human and animal bone phenotypes. Learn histomorphometry experimental design, data collection, analyze samples, and discuss subjectivity in analysis through interactive group activities based on case studies and simulated experiments.

Learning Objectives

1. Learn the processes involved in the preparation of tissue sections and how they inform the type of analysis done
2. Use case studies distinguish the appearance of normal vs. pathological bone tissues in mice and human
3. Use case studies to learn how to count cells for histomorphometry
4. Analyze and interpret histomorphological data

Bone is the most active area of research in endocrinology these days. I attend ASBMR each year knowing that there is always something new to learn.

– ASBMR 2015 Annual Meeting Attendee

The ASBMR Annual Meeting provides a unique and unparalleled opportunity to foster my growth as a bone researcher by providing a wide breadth of educational bone lectures on topics ranging from basic bone research to more applied, therapy-based research.

– ASBMR 2015 Annual Meeting Attendee



Networking and Social Opportunities

Friday, September 16

Welcome Reception and Plenary Poster Session

5:30 pm – 7:00 pm

Attendees and registered guests are invited to meet and mingle during our Wine and Cheese 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.

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 ASBMR Networking Center 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)

Young Investigator, Diverse Member and New Member Lounge

All young investigators, diverse members and new member attendees are invited to visit the Lounge located in the ASBMR Networking Center in the Discovery Hall. Don't miss this opportunity to make new friends and expand your network of colleagues.

Young Investigator and New Member Reception

5:30 pm – 7:00 pm

Sponsored by the ASBMR Membership Engagement and Education Committee and Young Investigator Subcommittee

The ASBMR Membership Engagement and Education Committee and Young Investigator Subcommittee members will be in attendance for this meet-and-greet networking event. The reception has been organized to promote interactions among young investigators and ASBMR leadership so that they may begin building a network of career-long contacts. The reception will be held concurrently with the Welcome Reception and the Plenary Poster Session within the Young Investigator Lounge in the ASBMR Networking Center located in the Discovery Hall.

Young Investigator and Diverse Member Networking Hour

7:15 pm – 8:00 pm

Sponsored by the ASBMR Membership Engagement and Education Committee, Diversity in Bone and Mineral Research Subcommittee and Young Investigator Subcommittee

Young Investigators and diverse members who wish to continue building connections with peers in a fun and informal setting are invited to attend this event. Sign up to attend when you register for the meeting.

Women's Committee Networking Reception

8:00 pm – 9:30 pm

Supported by UCB Biosciences and a donation from Paula H. Stern, Ph.D.

Join the ASBMR Women in Bone and Mineral Research Committee and Past ASBMR President, Sylvia Christakos, Ph.D. for a reception and discussion on navigating the "Imposter Syndrome" through your career. Don't miss this opportunity to network with your fellow colleagues!

Networking and Social Opportunities

Saturday, September 17

ASBMR Networking Breakfast

6:45 am – 8:00 am

Sponsored by the ASBMR Membership Engagement and Education Committee
New Investigators (early-career stage), new ASBMR members and young and diverse investigators are invited to join ASBMR leadership, senior investigators and NIH Representatives for an informal networking breakfast. New Investigators and first-time attendees will have the opportunity to network with multiple senior investigators at tables assigned by topic. Breakfast will be provided.

ASBMR Networking Event

8:30 pm – 11:30 pm

Supported in part by a donation from Lilly

Join us for an evening of food, drinks and dancing at the ASBMR Networking Event! Enjoy the company of colleagues, both old and new, while reveling in a fun and relaxed atmosphere. We'll be announcing the event's theme soon so be on the lookout for additional details in the coming weeks. Admission is included with Annual Meeting registration.

ASBMR is the premier annual meeting for research in the bone and mineral fields. The annual program is crucial for keeping up to date on the latest in this area.

– ASBMR 2015 Annual Meeting Attendee

Sunday, September 18

ASBMR Annual Town Hall Meeting and Reception

6:00 pm – 7:00 pm

You are invited to attend the ASBMR Town Hall Meeting and Reception at which you will learn about the Society, including the year in review, planned activities, strategic directions and leadership opportunities. The ASBMR Town Hall Meeting will be held at the Convention Center. Come learn more about ASBMR, meet with ASBMR leadership, ask questions during an “open-mic” time and enjoy a wine and cheese reception.

Diversity Reception

7:30 – 8:30 pm

Sponsored by the ASBMR Membership Engagement and Education Committee and Diversity Subcommittee ; Supported in part by a donation from Paula H. Stern, Ph.D.

The ASBMR Diversity Subcommittee looks forward to connecting with attendees and members to celebrate racial and ethnic diversity within the Society. Food and drink will be provided.



Networking and Social Opportunities

Ongoing Opportunities

ASBMR Networking Center

Located in the ASBMR Discovery Hall, the ASBMR Networking Center is a central spot to meet-up with old colleagues and to discover new collaborators and friends. It's also a great place to meet our friendly ASBMR staff, to hold discussions with NIH representatives and enjoy free Wi-Fi for online networking.

Meet-the-Professor Sessions

The Meet-the-Professor Sessions are informal sessions designed to provide an opportunity to interact with experts in an intimate setting and discuss specific clinical and research topics. The sessions will be held Friday through Monday. Be sure to purchase a Meet-the-Professor Handout Booklet that contains all the handouts supplied by the professors. The booklet can be purchased when you register for \$20 USD, to be picked up on site at the Convention Center. Handout booklets will also be available in PDF formation for download in advance of the meeting at no charge to members and meeting attendees.

Poster Tours

Sponsored by the ASBMR Membership Engagement and Education Committee
Back by popular demand, the Annual Meeting Poster Session Tours will take place during each of the three poster sessions on Saturday, September 17, Sunday, September 18 and Monday, September 19. These poster tours will be guided by a prominent scientist in the bone field to assist attendees in navigating the science within the poster hall. The tours will begin at the ASBMR Networking Center located in Discovery Hall in the Convention Center and will last approximately 60 minutes. Please visit the ASBMR website in mid-July to sign up to attend one of these exciting poster tours.



Working Groups

Working Groups are small interactive evening sessions organized around focused topics of special interest to you and others in your specific area of study. They are part of the ASBMR Ancillary Program and are organized by members independent of the Official ASBMR Program. Additional tickets are required. See [page 26](#) for topics and speakers.

The Epicenter of Science and Technology: the ASBMR Discovery Hall

Join us in the ASBMR Discovery Hall, a truly unique experience beyond the traditional exhibit hall.



The Latest Science

Browse through 1,200 poster presentations and learn about the new discoveries your colleagues are making. Take part in a 60-minute guided Poster Tour with prominent scientists in the bone fields and explore the latest science.

The Latest Opportunities

Connect with your colleagues in the ASBMR Networking Center to find new opportunities for collaboration and to learn more about what other attendees are working on.

The Latest Solutions

Find the newest products and services that can provide assistance to your lab or clinic. Our exhibitors are bringing their hottest solutions and can't wait to share them with you! Make sure you get your raffle card signed for a daily chance to win an Apple Watch!

Basic research presented at the ASBMR Annual Meeting is of higher quality than those presented in other bone metabolism societies.

– ASBMR 2015 Annual Meeting Attendee

Find everything you need in the ASBMR Discovery Hall!

ASBMR Symposium Bone-omics: Translating Genomic Discoveries into Clinical Applications

September 15, 2016 | Georgia World Congress Center | Atlanta, Georgia

Supported by educational grants from LGC and UCB Biosciences

The ASBMR Symposium: Bone-omics: Translating Genomic Discoveries into Clinical Applications will be held one day prior to the ASBMR 2016 Annual Meeting. This special one-day symposium has been organized to bring thought leaders together to appraise the latest contributions of the field of genomics to the understanding of skeletal disease mechanisms, ranging from basic molecular biology to animal models and bidirectional translation to humans, particularly within the scope of precision medicine and targeted treatments. This symposium will provide a re-energizing of the bone community in regards to skeletal genetics, discuss whole genome sequencing of large numbers of individuals with skeletal phenotypes creating exciting opportunities to identify new drug targets, and consider the bone community has not fully leveraged the developments in the understanding of gene regulation and the availability of transcriptomic and epigenetic resources.

The Bone-omics Revolution in Molecular Medicine

9:00 am – 10:30 am

Co-Chairs:

Eric Orwoll, M.D., Ph.D., Oregon Health & Science University (USA)

Joan McGowan, Ph.D., National Institute of Arthritis, Musculoskeletal & Skin Disease (USA)

25 years Since the Human Genome Project: New Tools and Technologies to Lessen the Burden of Disease

Eric Boerwinkle, Ph.D., University of Texas Health Science Center (USA)

Integrating -omics Platforms: A Glimpse into the Future of Clinical Practice

Nicholas J. Schork, Ph.D., J. Craig Venter Institute (USA)

Integrating -omics and Phenomics: Elucidating Molecular Mechanisms Influencing Therapeutic Decision Making

Greg Gibson, Ph.D., Georgia Institute of Technology (USA)

Model Cells and Organisms to Understand Genome Biology

11:30 am – 1:00 pm

Co-Chairs:

Cheryl Ackert-Bicknell, Ph.D., University of Rochester (USA)

Peter Croucher, Ph.D., Garvan Institute of Medical Research (Australia)

Induced Pluripotent Stem Cells (iPSCs) for the Understanding of Human Musculoskeletal Disease

Pamela G. Robey, Ph.D., National Institute of Dental and Craniofacial Research (USA)

International Mouse Phenotyping Consortium: Past, Present and Future... Making Mouse Models for All Protein Coding Genes

Steve Brown, Ph.D., Medical Research Council Harwell (United Kingdom)

Systems Biology: Gene and Networks Underlying the Molecular Basis of Musculoskeletal Disease

Charles Farber, Ph.D., University of Virginia (USA)

ASBMR Symposium *(continued)*

Big Data and Networks

2:00 pm – 3:30 pm

Co-Chairs:

Fernando Rivadeneira, M.D., Ph.D., Erasmus MC Rotterdam (The Netherlands)

Lynda Bonewald, Ph.D., University of Missouri, Kansas City (USA)

Model Cells and Organisms: BIG DATA in Musculoskeletal Research

André G. Uitterlinden, Ph.D., Erasmus Medical Center Rotterdam (The Netherlands)

Integration of Large-scale Functional and Comparative Genomics Datasets

Manolis Kellis, Ph.D., Massachusetts Institute of Technology (USA)

Methods for Integrating Data to Uncover Genotype-phenotype Interactions

Marilyn D. Ritchie, Ph.D., Pennsylvania State University (USA)

Genomics Applied in Therapeutics

3:45 pm – 5:15 pm

Co-Chairs:

Emma Duncan, Ph.D., Royal Brisbane and Women's Hospital (Australia)

Douglas Kiel, M.D., M.P.H., Hebrew SeniorLife, Harvard University (USA)

Promoters and Enhancers: DNA Regulatory Elements as Drug Targets

Matthew Maurano, Ph.D., New York University (USA)

Genomic Discoveries for the Development of New Medications

Matthew Nelson, M.D., Ph.D., Glaxo SmithKline (USA)

The Translational Landscape of Genomic Research: From Cells and Model Organisms to Human Treatments

Robert Plenge, M.D., Ph.D., Merck Sharp & Dohme (USA)

Poster Award & Closing Remarks

5:15 pm – 5:30 pm

Poster Award Competition

The organizing committee will designate faculty (session chairs and speakers) to visit the poster presentations of Young Investigators to engage and critique their work. The faculty will score the presentations and the scores will be tallied during the afternoon sessions. The winner will be announced at the end of the symposium and presented with a certificate.

This is the go-to meeting for bone research. The excellent science gives me ideas to apply to my research in a related area.

– ASBMR 2015 Annual Meeting Attendee

2016 Ancillary Programs

ASBMR Expectation of Authors and Presenters

The 2016 Ancillary Program is not part of the ASBMR Official Scientific Program. However, ASBMR expects that all authors and presenters affiliated with the ASBMR 2016 Annual Meeting and the 2016 Ancillary Program will provide informative and fully accurate content that reflects the highest level of scientific rigor and integrity. This includes the presentations at the 2016 Ancillary Meetings.

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. Please review further expectations regarding speaker disclosures and presentation guidelines.

Working Groups

To round out and attendees educational experience, Working Groups are interactive meetings related to a focused topic not specifically addressed in the ASBMR Official Program. These meetings are organized by ASBMR members and not initiated by industry. Please note that Working Groups are not part of the ASBMR Official Program and have been organized by the parties indicated.

Working Group Registration Procedures

Tickets for all Working Groups are available on a first-come, first-served basis through pre-registration and during on-site registration hours, space permitting. We strongly encourage you to pre-register online. Waiting lists are not maintained for Working Groups that have met their attendance limit.

Friday, September 16

7:15 pm – 9:45 pm

Rare Bone Disease Working Group

7:15 pm – 9:45 pm

Muscle and Bone Working Group

7:15 pm – 9:10 pm

Working Group on Aging

7:15 pm – 9:30 pm

Nutrition and Bone Working Group

7:30 pm – 9:30 pm

Bone Turnover Markers Working Group

Sunday, September 18

6:00 am – 7:45 am

Industry-Supported Symposium

New Horizons in Osteoporosis: Building a Strong Foundation for Evidence-based Diagnosis and Treatment

7:15 pm – 9:30 pm

Bone Strength Working Group

7:15 pm – 9:30 pm

Pediatric Bone and Mineral Working Group

7:15 pm – 10:00 pm

Adult Bone and Mineral Working Group

2016 Ancillary Programs

Friday, September 16

Rare Bone Disease Working Group

7:15 pm – 9:45 pm

Registration Fee: \$50

Supported by Educational Grants from Alexion Pharmaceuticals, Clementia Pharmaceuticals, Regeneron Pharmaceuticals and Ultragenyx Pharmaceutical, Inc.

Fibrodysplasia Ossificans Progressiva (FOP) – A Success Story: Collaboration between Science and Industry

There will also be presentations on the following rare bone diseases: Fibrous dysplasia, Gorham's disease, Hypophosphatasia (HPP), Melorheostosis, Multiple Hereditary Exostoses (MHE), Osteopetrosis, Osteogenesis Imperfecta and X-Linked Hypophosphatemia. The meeting will conclude with a panel discussion answering questions from the audience, discussing opportunities for new collaboration between academic scientists and industry, and ways in which the NIH can stimulate additional research on rare bone diseases. Panelists will include the speakers and a representative from the NIH. There will be ample time for questions and answers and discussion.

Dinner will precede the program.

For further information, please contact:

Charlene Waldman, Consultant to the Osteogenesis Imperfecta Foundation (USA)
Email: waldmancharlene@yahoo.com

Muscle and Bone Working Group

7:15 pm – 9:45 pm

Registration Fee: \$35

Supported by Stratec Medizintechnik and Novotec Medical GmbH

The Importance of Muscle Formation for the Skeletal System

The Mechanostat theorem of the functional muscle and bone unit underlines the importance of muscle function, especially maximum physiological forces, for the skeletal system. Recent research on muscle properties like geometry, mass and density showed that muscle mass alone is a poor surrogate for the resulting

function especially in the aging population. Therefore diagnostic methods like pQCT allowing quantification of muscle and bone properties different than just mass especially when combined with functional measurements like Mechanography are of significant importance for diagnostics not only in the field of Osteoporosis. The same diagnostics methods can be used in the fields of Frailty, Dynapenia and Sarcopenia where muscle power is essential. For all the fields mentioned above, the concept of the functional muscle and bone unit also offers a non-pharmaceutical therapy concept focusing on the increase of muscle function. Very efficient examples for this therapy concept are methods like Whole Body Vibration Training. The diagnostic methods as mentioned before can be used to document and validate the effects of such therapy and training concepts.

For further information, please contact:

Johannes Willnecker, Stratec Medizintechnik GmbH (Germany)

Email: j.willnecker@stratec-med.com

Working Group on Aging

7:15 pm – 9:10 pm

Registration Fee: \$50

Supported by an educational grant from the National Institute on Aging

Understanding Mechanisms of Age-Related Bone Loss in the Context of Generalized Aging in Multiple Tissues

There is considerable interest in understanding skeletal aging in the context of overall aging. The session will consist of three 20-minute talks with 20 minutes for discussion after each talk. The first talk will present a broad overview of age related bone loss, followed by a clinical talk placing fractures in the context of multiple aging co-morbidities. The final talk will discuss novel therapeutic approaches, including "senolytic" drugs, to treat multiple aging conditions, including osteoporosis.

For further information, please contact:

Sundeep Khosla, M.D., Kogod Center on Aging, Mayo Clinic (USA)

E-mail: khosla.sundeep@mayo.edu

2016 Ancillary Programs

Friday, September 16 (continued)

This is the best meeting to learn about new basic, transitional and clinical research for Metabolic bone disorders.

– ASBMR 2015 Annual Meeting Attendee

Nutrition and Bone Working Group

7:15 pm – 9:30 pm

Registration Fee: \$37

Supported by an educational grant from the National Dairy Council

Update on Dietary Phosphorus, Bone and Non-skeletal Tissues

Phosphorus in the diet plays an important role in the bone-endocrine response in healthy adults and those with specific disease states. There will be 25-minute expert talks about the dietary concerns for excess and deficiency, metabolism and conditions that influence bone health. Ample time will be allocated for questions and answers and a short summation. A plated dinner will be served during the program.

For further information, please contact:

Organizer Name: Sue Shapses, Rutgers University (USA)

E-mail: shapses@rutgers.edu

Bone Turnover Markers Working Group

7:30 pm – 9:30 pm

Registration Fee: \$30

Novelties in Skeletal Biomarkers Including Bone and Muscle Markers

This year, the Working Group Meeting will address the use of bone turnover markers in monitoring osteoporosis treatment, including cut-points and treatment targets. Also, novel markers of bone metabolism such as periostin, and myokines including myostatin, irisin and agrin, will be discussed.

For further information, please contact:

Organizer Name: Núria Guañabens

E-mail: NGUANA@clinic.cat

This is the main bone congress in the world – best lectures and best speakers at the same time, in the same place.

– ASBMR 2015 Annual Meeting Attendee

2016 Ancillary Programs

Industry-Supported Symposia (ISS)

ASBMR Disclaimer

Please note that Industry-Supported Symposia (ISS) are not part of the ASBMR Official Program. ISS are held in conjunction with the ASBMR Annual Meeting. The Sponsor of each ISS is responsible for the organization and scientific content of the educational activity in accordance with the Essential Areas and Policies of the ACCME as well as with Food and Drug Administration (FDA) guidelines. Please note the following definitions: "Supporter" refers to the supporting company and "Sponsor" refers to the managing or organizing party and/or the CME provider.

Sunday, September 18

NEW HORIZONS IN OSTEOPOROSIS: Building a Strong Foundation for Evidence-based Diagnosis and Treatment

6:00 am – 7:45 am

Jointly provided by Potomac Center for Medical Education and Rockpointe

Supported by an educational grant from Radius Health, Inc.

80% of those at high risk or who have had at least one osteoporotic fracture are not identified or treated. Widespread misinformation contributes to this, including articles on risks of radiation exposure from DXA scans and serious but rare adverse effects. In May 2016, the American Society for Bone and Mineral Research (ASBMR), National Osteoporosis Foundation (NOF), and National Bone Health Alliance (NBHA) sent an urgent call for doctors to be more aggressive treating patients at high risk of fractures, and for patients to be more aware of the need for treatment. Newer treatment options with potential for remarkable therapeutic outcomes may become available to help reach these goals.

The proposed education will clarify misperceptions and misinformation related to osteoporosis diagnosis and management. It will summarize strategies to identify patients who have sustained hip fractures and set treatment goals. It will also update clinicians on new and emerging therapies.

Accreditation/Credit Designation Statement

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical

Education through the joint providership of the Potomac Center for Medical Education and Rockpointe. The Potomac Center for Medical Education is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The Potomac Center for Medical Education designates this live activity for a maximum of 1.75 *AMA PRA Category 1 Credits*[™]. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Registration Information

To save your seat for this program, please register at www.rockpointe.com/osteohorizons by September 4, 2016. After the deadline, seats will only be available on a first-come, first-served basis.

*The most complete international bone meeting –
indispensable for a bone researcher.*

– ASBMR 2015 Annual Meeting Attendee

2016 Ancillary Programs

Sunday, September 18 (continued)

Bone Strength Working Group

7:15 pm – 9:30 pm

Registration Fee: \$35

Supported by the Canadian Bone Strength Working Group

The program will consist of short oral presentations followed by a keynote lecture. The top five abstracts related to bone strength will be selected from the ASBMR Poster program for oral presentation and discussion. The topic of the keynote lectures will be: "The Science of Skeletal Self-Repair". After the lecture, there will be time set aside for questions and discussion. A plated dinner will precede the program.

For further information, please contact:

Angela Cheung, M.D., Ph.D., University of Toronto (Canada)

Email: angela.m.cheung@gmail.com

OR

Richard Kremer, M.D., Ph.D., McGill University Health Center (Canada)

Email: richard.kremer@mcgill.ca

Pediatric Bone and Mineral Working Group

7:15 pm – 9:30 pm

Registration Fee: \$35

The Pediatric Bone and Mineral Working Group will convene its 33rd annual meeting to hear scientific presentations and engage in discussion regarding discoveries relevant to pediatric bone and mineral diseases, healthy skeletal development, and advances in diagnostic and therapeutic modalities. Our keynote speakers will be Dr. Leanne Ward who will share her knowledge of management of osteoporosis in children with muscular dystrophy, and Dr. Eric Hoffman who will talk about a potential bone sparing glucocorticoid for use in children with muscular dystrophy. In addition to our keynote speakers, we will be accepting abstracts for presentation. Four abstracts will be chosen, each to

deliver a 10-minute oral presentation. Abstracts submitted to the main ASBMR program can also be submitted to the Pediatric Bone and Mineral Working Group. Abstracts should be submitted via email to one of the program co-chairs noted below.

For further information or to submit abstracts please contact:

Madhu Misra, M.D., M.P.H., Massachusetts General Hospital (USA)

Email: mmisra@mgh.harvard.edu

OR

Clemens Bergwitz, M.D., Yale University School of Medicine (USA)

Email: cwhb2002@yahoo.com

Phone: 203-737-5450

Adult Bone and Mineral Working Group

7:15 pm – 10:00 pm

Registration Fee: \$45

The ABMWG is one of the oldest working groups of the ASBMR. The ABMWG meeting presents an historical vignette, and is followed by a didactic forum in which several peer reviewed oral abstracts dedicated to clinical metabolic bone and mineral disorders are presented and scrutinized by rigorous attendee dialogue. ABMWG attendees/discussants are internationally revered clinical bone scientists, clinical bone educators and trainees in diseases related to bone and mineral metabolism. The ABMWG also bestows the coveted Boy Frame Award for "Excellence in Clinical Research" at its annual meeting.

A buffet dinner will precede the program.

For further information please contact:

Natalie Cusano, M.D., M.S., Columbia University Medical Center (USA)

Email: asbmrabmwg@gmail.com

General Information

Intended Audience

The ASBMR 2016 Official Scientific Program is designed for researchers, physicians and other health and allied health professionals with interests in:

- Biomechanics
- Cell biology
- Dentistry
- Endocrinology
- Epidemiology
- Genetics
- Metabolism and musculoskeletal research
- Molecular biology
- Nephrology
- Pathology
- Pharmacology
- Physiology
- Rheumatology

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.

Continuing Medical Education (CME)

Accreditation Statement



This activity has been planned and implemented by Creighton University Health Sciences Continuing Education (HSCE) and The American Society of 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 27.75 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity. ACPA accepts AMA Category 1 credit for the PRA from organizations accredited by ACCME.

Online CME

The CME online evaluation will be available beginning Thursday, September 22. Please Note: There will be a \$50 fee per application. This fee can be paid when you register for the Annual Meeting. Please check the Continuing Medical Education Credits (CME) box under Optional Events and Products. Should you have questions, contact the ASBMR Business Office at asbmr@asbmr.org or (202) 367-1161.

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

General Information

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 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: 1) Grant/Research Support; 2) Consultant; 3) Speakers' Bureau; 4) Major Stock Shareholder; 5) Other Financial or Material Support.

ASBMR Expectation 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 2016 Annual Meeting and the 2016 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 Annual Meeting sessions, including the 2016 Ancillary Program.

ASBMR 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 ASBMR 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.

General Information

Annual Meeting Resource Materials

2016 Abstracts Book

The 2016 Abstracts book is published as a supplement of the *Journal of Bone and Mineral Research (JBMR®)*.

A limited number of the 2016 Abstracts Books will be printed and available for purchase and pick-up on site in Atlanta. To obtain a copy, you must order it in advance through the registration form by August 13, 2016. The price of the book is \$50 USD. The 2016 Abstracts book will also be available in PDF formation for download in advance of the meeting at no charge to members and meeting attendees.

2016 Abstracts Online Program

Only members and pre-registered Annual Meeting attendees will be able to access the 2016 Abstracts Online Program before the Annual Meeting. 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 at www.asbmr2016.org starting mid-August 2016.



Meet-the-Professor Handout Booklet

The Meet-the-Professor Handout Booklet contains all the handouts supplied by the professors in one convenient booklet. The booklet can be purchased in advance through the registration form for \$20 USD to be picked up on site at the Convention Center. Handout booklets will also be available in PDF formation for download in advance of the meeting at no charge to members and meeting attendees.

On-Site Program

Supported by AMGEN, Inc. and UCB Biosciences

As a registered meeting attendee you will receive an On-Site Program along with other meeting materials once you arrive at the Convention Center and check in at the registration counter. This book contains a detailed schedule and description of the events for the entire meeting, including the Ancillary Program.

ASBMR Mobile App

This free smartphone application is a mobile version of the On-Site Program and includes the meeting abstracts. The app also features general meeting information, exhibitor listings and detailed maps of the convention center. The app will be available to download in mid-August.

Ancillary Meetings

If you are looking to connect with colleagues on a special topic or reconnect with former classmates for a mini reunion, we have a process that might help you. Applications need to be submitted on or before July 31, 2016 and space is limited. For more information, visit www.asbmr2016.org.

2016 Supporters

ASBMR would like to thank our 2016 Supporters for their participation in the ASBMR Annual Meeting.

As of June 24, 2016.

Silver Level

Merck & Co., Inc.

Bronze Level

Lilly

Shire

Radius Health

UCB Biosciences

Friend Level

Alexion Pharmaceuticals

AMGEN, Inc.

ProStrakan, Inc.

LGC

Ultragenyx Pharmaceuticals, Inc.

The ASBMR scientific program is developed by the Society's Annual Meeting Program Committee prior to, and independent of, educational grant support. In accordance with the standards of ACCME and Creighton CME, the commercial supporters of this meeting have no influence regarding topics or speakers.

Registration Information

Register by **August 4** for best rates!

ASBMR 2016 Annual Meeting Registration Fees	Annual Meeting Only		Annual Meeting with Bone-omics Symposium		Bone-omics Symposium Only
	On/Before August 4	August 5 – Sept 15	On/Before August 4	August 5 – Sept 15	
Member	\$415	\$540	\$540	\$665	\$275
Non-Member	\$775	\$900	\$900	\$1,025	\$275
Student/Resident/Fellow Member	\$265	\$315	\$315	\$365	\$175
Student/Resident/Fellow Non Member	\$365	\$415	\$415	\$465	\$175
Allied Health Professional	\$365	\$415	\$415	\$465	\$175

Please note: a \$50 on-site registration fee applies after September 16

Extra Events and Resources

Hands-on Workshops	\$50 per workshop
Working Groups	Fees vary from \$20 – \$50 per ticket
2016 Abstracts Book	\$50 per print copy*
Meet-the-Professor Handout Book	\$20 per print copy*
Continuing Medical Education Credits	\$50 application fee

* PDF will be available online free of charge to attendees

Group Registration

Tour leaders and other group organizers may register online using the same system as individuals. The system allows you to enter a list of delegates and enter the payment information only once at the end of the process. Once payment is complete, confirmations will be immediately sent to the confirmation

email address you provide. Your confirmation will include instructions on how to log in and request changes or additional receipts. To register a group of 10 or more, email asbmr@compusystems.com for instructions.

What's included with registration fees?

Annual Meeting registration fees entitle the registrant to:

- Admission to all sessions, which includes over 30 hours of educational content
- Admission to ASBMR Discovery Hall, which includes over 1,500 scientific posters
- Friday's Welcome Reception
- All coffee breaks
- Digital copy of the 2016 Abstracts book and Meet-the-Professor Handout booklet
- Access to the abstracts online and itinerary builder
- Unlimited networking opportunities to collaborate with other leaders in the field

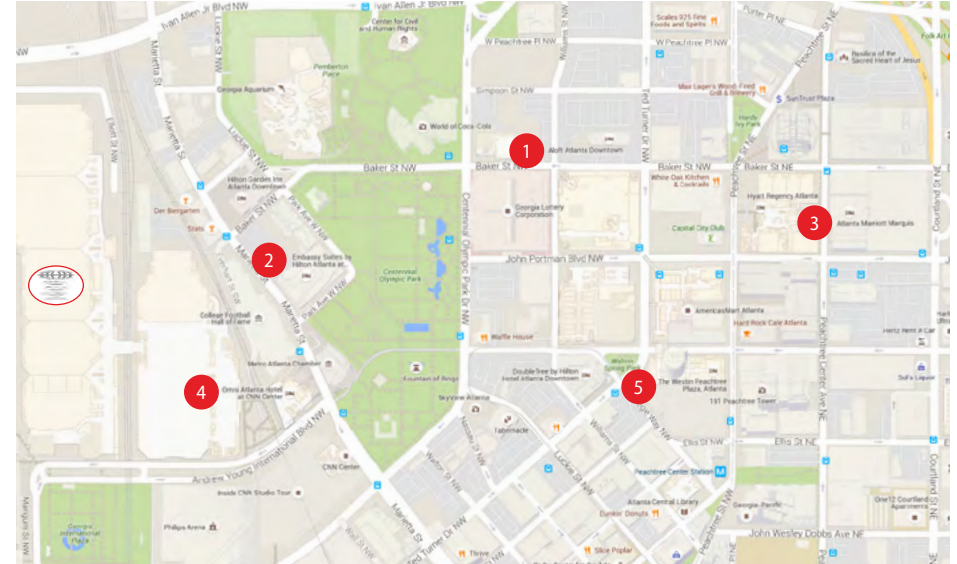
Hotel Information

ASBMR has secured rates at five hotels located within five blocks of the Convention Center. Rates range from \$159 USD - \$209 USD. [Click here](#) for more information about all of our hotel options. We encourage you to support ASBMR by using our official housing service. By doing so, we are able to effectively document the economic impact that the ASBMR Annual Meeting has on the city we are hosting in. This is critical to negotiating rates with the city's meeting facilities, allowing us to keep costs low in other areas for our attendees.

Book Your Room

[Click here](#) for more information about international group housing, or email us at ASBMRgrouphousing@asbmr-igd.com. For information about housing for US-based groups, please email us at housing@asbmr.org.

Want to learn more about this year's host city, Atlanta, Georgia? [Click here!](#)



- | | | |
|-------------------|---------------------|-------------------|
| 1. Aloft Atlanta | 3. Marriott Marquis | 5. Westin Atlanta |
| 2. Embassy Suites | 4. Omni CNN Center | |

