Detailed Agenda

Monday, September 23, 2019	
4:00pm	Guest Arrival and Check-in at Sheraton Lake Buena Vista *(Hotel check-in is at 3pm.)*
5:00pm–8:00pm	Registration Open
5:00pm–7:00pm	Poster Presenters and Exhibitors Set Up Displays
7:00pm–8:00pm	Welcome Reception at the Poolside Firepit *(In the event of rain, the Welcome Reception will be moved to the Ballroom Foyer)*
8:00pm–9:00pm	**Keynote Address** ***Majestic Palm ABC*** ***Roland Baron***, *Harvard Medical School and Harvard School of Dental Medicine, Boston, MA, USA* Osteocytic Osteolysis Revisited: Does It Happen, What Does It Do, and How to Measure It?

Dr. Roland Baron

Keynote Speaker
Professor and Chair, Department of Oral Biology, Infection, and Immunity
School of Dental Medicine
Department of Medicine
Medical School, Harvard University,
Boston, MA, USA

Dr. Roland Baron received his DDS and his PhD in oral biology at the University of Paris (France). Upon receiving his degrees, Dr. Baron remained at the University of Paris, where he went on to become a member of the dental faculty. He was first appointed as an assistant professor in physiology, was soon promoted to an associate professor of physiology, and became chief of the Physiology Section. Dr. Baron has taken office as the new president of the American Society for Bone and Mineral Research (ASBMR), the world's leading scientific organization for bone health research. Dr. Baron will serve as President of ASBMR until October 2015.

In 1975, Dr. Baron began a long career at Yale University School of Medicine. He held several positions at Yale, beginning as an assistant professor in pathology. He soon moved to the Department of Internal Medicine and Cell Biology and climbed through the ranks to eventually become a tenured full professor. In 2008, he left Yale to become the chair of the Department of Oral Medicine, Infection, and Immunity at Harvard School of Dental Medicine. In addition to being chair, Dr. Baron is also a professor of oral medicine, infection, and immunity and a professor of internal medicine at Harvard Medical School and at the Endocrine Unit at Massachusetts General Hospital.

Dr. Baron is the founder and current editor-in-chief of Bone, the Official Journal of the International Bone and Mineral Society. Between 1994 and 2002, he also held the position of vice president and head of the Bone Diseases Group at Hoechst Marion Roussel and then Aventis. In 2002 he founded ProSkelia, a small pharmaceutical company devoted to the discovery and development of new drugs for bone and hormonal dependent diseases. He held the positions of president and chief scientific officer of ProSkelia and then ProStrakan, a merger between ProSkelia and Strakan, until April 2006.

Dr. Baron has published more than 250 scientific papers in the field of bone cell and molecular biology. He has also received numerous awards during his career, including the Thesis Prize, Silver Medal, Laureate of Paris V University for the PhD Thesis in 1972; MERIT Award, National Institutes of Health, NIDR, NIH, in 1993; Seymour J. Kreshover Lecture Award, NIDR, NIH, in 1997; Japan Society for the Promotion of Science travel grant in 2002; Louis V. Avioli Founders Award, American Society for Bone and Mineral Research, in 2002; Doctor Honoris Causa, University René Descartes, Paris, France, also in 2002; and D. Harold Copp Award in Basic Research, International Bone and Mineral Society, Geneva, Switzerland, in 2005. He was a member of the Council of the American Society for Bone and Mineral Research from 1991 to 1994 and has been a member of the Board of Directors of the International Bone and Mineral Society since 1995. Dr. Baron was elected president of the European Calcified Tissue Society in 2007.

Fields of Interest

Dr. Baron is internationally known for his groundbreaking advances in bone biology. His research is the basis for the development of novel therapies to prevent bone loss such as that in arthritis and osteoporosis. The Baron Laboratory is focused on signal transduction and the ways in which it controls cell differentiation and function. For this purpose, the researchers primarily study skeletal development and remodeling as a model system.

Tuesday, September 24, 2019	
7:30am–8:30am	**Morning Refreshments in *Majestic Palm EFG***
7:30am–5:30pm	Registration Open
7:30am–5:00pm	Posters on Display
	Session 1 [8:30am–10:00am]
Location	***Majestic Palm ABC***
Session Title	**Bone Remodeling: Coupling of Bone Resorption and Formation**
Moderator	***D. Rick Sumner,*** *Rush University Medical Center, Chicago, IL, USA*
8:30am	***Thomas L. Andersen,*** *University of Southern Denmark, Odense, Denmark* Bone Remodeling and Bone Loss During Aging: New Lessons from Cortical Bone
9:00am	***Christina M. Andreasen,*** *University of Southern Denmark, Odense, Denmark* Assessment of the Intracortical Vascular Network and its Modulation Within Intracortical BMUs in Human Bone
9:15am	***Jean-Marie Delaisse,*** *University of Southern Denmark, Odense, Denmark* Proper Evaluation of Bone Remodeling Requires Attention for the Reversal Phase
9:30am	***Lara Sattgast,*** *Oregon State University, Corvallis, OR, USA* Effects of Ethanol Consumption on Intracortical Bone Remodeling and Biochemical Markers of Bone Turnover in Young Adult Male Cynomolgus Macaques
9:45am	***Brittany M. Wilson,*** *Rush University Medical Center, Chicago, IL, USA* Remote Bone Loss After Implant Surgery in a Rat Model
10:00am–10:30am	**Refreshment Break and Networking in *Majestic Palm EFG***
	Session 2 [10:30am–12:00pm]
Location	***Majestic Palm ABC***
Session Title	**Influence of Biomechanics on Bone Development and Regeneration**
Moderator	***Sara H. Windahl,*** *Karolinska Institutet, Huddinge, Sweden*
10:30am	***Joel D. Boerckel,*** *University of Pennsylvania, Philadelphia, PA, USA* Recapitulating Bone Development for Regeneration
11:00am	***Ariane C. Scheuren,*** *ETH, Zurich, Switzerland* Loading Frequency Affects Bone Adaptation in Mouse Caudal Vertebrae as Assessed by Longitudinal Micro-CT and Dynamic In Vivo Morphometry
11:15am	***Lei Zhao,*** *Hokkaido University, Sapporo, Japan* Mineral-Tissue Mechanical Relationship in Biomimetically Remineralized Bovine Bone Tissue
11:30am	***Francesca Salamanna,*** *IRCCS-Istituto Ortopedico Rizzoli, Bologna, Italy* Natural Wood Transformed Into Large 3-D Hydroxyapatite (HA) Biomimetic Scaffold for Segmental Bone Reconstruction
11:45am	***Maria Sartori,*** *IRCCS-Instituto Ortopedico Rizzoli, Bologna, Italy* Evaluation of Bone Regeneration of a Critical Bone Defect Treated with a Magnetic Scaffold and Local Delivery of Vascular Endothelial Growth Factor
12:00pm–1:30pm	**Lunch and Poster Viewing in *Majestic Palm EFG*** *(Poster Presenters are to be stationed at their poster displays from 12:45pm - 1:30pm)*

Tuesday, September 24, 2019 (continued)	
	Session 3 [1:30pm–3:00pm]
Location	***Majestic Palm ABC***
Session Title	**Marrow Fat and Bone Function**
Moderator	***Urszula T. Iwaniec,*** *Oregon State University, Corvallis, OR, USA*
1:30pm	***William P. Cawthorn,*** *University of Edinburgh, Edinburgh, Scotland, UK* Endocrine and Metabolic Functions of Bone Marrow Adipose Tissue
2:00pm	***Urszula T. Iwaniec,*** *Oregon State University, Corvallis, OR, USA* Voluntary Alcohol Consumption in Male Rhesus Macaques Suppresses Cancellous Bone Formation and Increases Bone Marrow Adiposity
2:15pm	***Samantha Costa,*** *Maine Medical Center Research Institute, Scarborough, ME, USA* Sclerostin Antibody Normalizes Decreased Trabecular Bone and Increased Bone Marrow Adipose Tissue Caused by Whole-Body Irradiation in Mice
2:30pm	***Urszula T. Iwaniec,*** *Oregon State University, Corvallis, OR, USA* Propranolol Antagonizes the Adaptive Response of Bone Marrow Adipose Tissue to Cold Temperature Stress Induced by Room Temperature Housing
2:45pm	***Danielle E. Whittier,*** *University of Calgary, Calgary, AB, Canada* Heterogeneous Bone Loss Measured as Void Space in the Metaphyseal Region Alters Which Microarchitectural Predictors are Associated With Hip Fracture Risk
3:00pm–3:30pm	**Refreshment Break and Networking in *Majestic Palm EFG***
	Session 4 [3:30pm–5:00pm]
Location	***Majestic Palm ABC***
Session Title	**Single Cell and Subcellular Imaging in Bone**
Moderator	***Jillian Cornish,*** *University of Auckland, Auckland, New Zealand*
3:30pm	***Erica L. Scheller,*** *Washington University School of Medicine, Saint Louis, MO, USA* Single Cell Imaging of Nerves and Fat From Bone to Brain
4:00pm	***Sarah L. Dallas,*** *University of Missouri Kansas City, Kansas City, MO, USA* Live Cell and Intravital Imaging of Osteoclasts and the Fate of Osteocytes Following Osteoclast Resorption
4:15pm	***Leeann Louis*****,** *University of California, Berkeley, CA, USA* Reproductive Behavior Leads to Massive Restructuring of Bird Bone
4:30pm	***Adriana L. Carvalho,*** *Maine Medical Center Research Institute, Scarborough, ME, USA* Morphine Treatment Reduces Trabecular Bone Volume Fraction and Impairs Cortical Bone Expansion in Male Mice
4:45pm	***Frank C. Ko,*** *Rush University Medical Center, Chicago, IL, USA* Contribution of Trabecular Bone Properties to Implant Fixation Strength in Rats
5:00pm	**Sessions Conclude for the Day; Dinner on your own** (Disney Springs Excursion -- shuttle provided)
6:00pm–6:30pm	Buses depart from Hotel to Disney Springs *(Meet at Convention Center Entrance. Bus #1 departs at 6:00pm, Bus #2 departs at 6:30pm)*
9:00pm–9:30pm	Buses depart from Disney Springs to Hotel *(Bus #1 departs at 9:00pm, Bus #2 departs at 9:30pm)*

Wednesday, September 25, 2019	
7:30am–8:30am	**Morning Refreshments in *Majestic Palm EFG***
7:30am–5:30pm	Registration Open
7:30am–3:00pm	Posters on Display
	Session 5 [8:30am–10:00am]
Location	***Majestic Palm ABC***
Session Title	**Osteoporosis Drugs: Morphometry to Mechanism**
Moderator	***Matthew R. Allen,*** *Indiana University School of Medicine, Indianapolis, IN, USA*
8:30am	***David W. Dempster,*** *Helen Hayes Hospital, West Haverstraw, NY, USA* Cellular and Tissue Level Actions of Osteoporosis Medicines
9:00am	***Joshua F. Yarrow,*** *Malcolm Randall VA Medical Center, Gainesville, FL, USA* Bodyweight-Supported Treadmill Training and Passive Cycle Training Produce Differential Effects on Cancellous Bone Loss in Spinal Cord Injured Rats
9:15am	***Samantha Costa,*** *Maine Medical Center Research Institute, Scarborough, ME, USA* Inverse Correlation Between Trabecular Bone Volume and Bone Marrow Adipose Tissue in Rats Treated with Osteoanabolic Agents
9:30am	***Elizabeth A. Swallow,*** *Indiana University School of Medicine, Indianapolis, IN, USA* Treatment-Induced Cortical Porosity Infilling in an Animal Model of Progressive Chronic Kidney Disease
9:45am	***Kelsey Carpenter,*** *Rush University Medical Center, Chicago, IL, USA* Sclerostin Antibody Rescues Hypophosphatemia and Increases Bone Mass in *Hyp* Mouse Model
10:00am–10:30am	**Refreshment Break and Networking in *Majestic Palm EFG***
	Session 6 [10:30am–12:00pm]
Location	***Majestic Palm ABC***
Session Title	**Osteocyte Morphometry in Physiology, Pathology, and Intervention**
Moderator	***Sarah L. Dallas,*** *University of Missouri Kansas City, Kansas City, MO, USA*
10:30am	***Richard Weinkamer,*** *Max Planck Institute of Colloids and Interfaces, Potsdam, Germany* Quantitative Description of the Osteocyte Lacunocanalicular Network and Beyond
11:00am	***Natalie A. Sims,*** *St. Vincent's Institute of Medical Research, Melbourne, Australia* MicroCT OTSU-Thresholding During Cortical Bone Development and the Role of Osteocyte-Derived GP130 and SOCS3
11:15am	***Elliott Goff,*** *ETH, Zurich, Switzerland* Ultra-High-Resolution Micro-CT Imaging and High-Throughput Phenotyping of Individual Osteocyte Lacunae in Human Bone
11:30am	***Jennifer C. Coulombe,*** *University of Colorado, Boulder, CO, USA* 3D Peri-Lacunar Bone Mineral Density Changes with Oblateness
11:45am	***Xiao-Hua Qin,*** *ETH, Zurich, Switzerland* 3D-Printed Mini Bone Organs: An In Vitro Model to Study and Manipulate Osteocyte Morphology in Three Dimensions
12:00pm–1:30pm	**Lunch and Poster Viewing in *Majestic Palm EFG*** *(Poster Presenters are to be stationed at their poster displays from 12:45pm - 1:30pm)*

Wednesday, September 25, 2019 (continued)	
	Session 7 [1:30pm–3:00pm]
Location	***Majestic Palm ABC***
Session Title	**Intravital Imaging of Bone and Bone Cancer**
Moderator	***Ralph Mueller,*** *ETH, Zurich, Switzerland*
1:30pm	***Michelle M. McDonald,*** *Garvan Institute of Medical Research, Sydney, Australia* Intravital Imaging of the Tumour Bone Niche Reveals Novel Cell Behavior: Implications for Microenvironmental Regulation of Tumour Cell Dormancy
2:00pm	***Donald B. Kimmel,*** *University of Florida, Gainesville, FL, USA* Inhibition of Vascular Endothelial Growth Factor Causes Low Bone Blood Flow, Bone Strength, and Bone Hydration With No Effect on Bone Mass and Microarchitecture
2:15pm	***J. Ignacio Aguirre,*** *University of Florida, Gainesville, FL, USA* Vascular Endothelial Growth Factor Antibody (Anti-VEGF) Monotherapy Causes Destructive Advanced Periodontitis but Not Osteonecrosis of the Jaw in Rice Rats *(Oryzomys palustris)*
2:30pm	***Evelyn J. Castillo,*** *University of Florida, Gainesville, FL, USA* Preventing Periodontitis or Controlling its Progression Dramatically Reduces the Development of Bisphosphonate-Related Osteonecrosis of the Jaw in Rice Rats *(Oryzomys palustris)*
2:45pm	***Katherine R. Barratt,*** *University of South Australia, Adelaide, Australia* Raising Serum 25-Hydroxyvitamin D Levels Improves Bone Volume and Mineral Density in *Hyp* Mice
3:00pm–3:30pm	**Refreshment Break in *Majestic Palm EFG* — Poster Presenters and Sponsors to Remove Displays**
	Session 8 [3:30pm–5:00pm]
Location	***Majestic Palm ABC***
Session Title	**Lineage Tracing of Bone Cells**
Moderator	***Natalie A. Sims,*** *St. Vincent's Institute of Medical Research, Melbourne, Australia*
3:30pm	***Ivo Kalajzic,*** *University of Connecticut Health Center, Farmington, CT, USA* Lineage Tracing in Bone
4:00pm	***Sara H. Windahl,*** *Karolinska Institutet, Huddinge, Sweden* αSMA Osteoprogenitor Cells Contribute to the Increase in Osteoblast Numbers in Response to Mechanical Loading
4:15pm	***Reinhold G. Erben,*** *University of Veterinary Medicine, Vienna, Austria* Harnessing the Power of Laser Capture Microdissection for *In Situ* Gene Expression Analysis in Bone Cells
4:30pm	***Anders Palmquist,*** *University of Gothenburg, Gothenburg, Sweden* The Hierarchical Nature of Osseointegration: Multiscale and Multimodal Assessment of the Bone-Implant Interface
4:45pm	***Phil Salmon,*** *Bruker MicroCT, Kontich, Belgium* The Linear Decline of Cross-Sectional Trabecular Fractal Dimension Downstream of the Growth Plate Indicates Uniform Modeling Dynamics in the Murine Metaphysis and Provides New Morphometric Indices Linked to Emergent Pattern
5:00pm	**Sessions Conclude for the Day**
5:45pm	Buses begin boarding at Convention Center Entrance at 5:45PM and depart promptly at 6:00PM for SeaWorld Orlando
6:30pm–9:30pm	**Dinner Banquet at Sharks Underwater Grill SeaWorld Orlando**

Thursday, September 26, 2019	
7:30am–8:30am	Morning Refreshments in ***Ballrooom Foyer***
7:30am–11:30am	Registration Open
	Session 9 [8:30am–11:30am]
Session Title	**Practical Training in Bone Methodology**
8:30am–9:30am	**General Session: Practical Bone Histomorphometry in Rodents -** ***Majestic ABC*** ***Thomas J. Wronski and Reinhold G. Erben***
9:30am–11:30am	Groups will rotate between four, 30-minute sessions. A schedule will be provided the morning of. **Room ABC:** Identification of Bone Cells in Histologic Sections ***Tom Wronski***, University of Florida **Room E:** MicroCT Imaging of Bone Samples I ***Phil Salmon***, Bruker MicroCT, and ***Raj Manoharan***, Micro Photonics, Inc. **Room F:** Sectioning Undecalcified Bone Samples with a Microtome ***Jessica Jirons*** *and* ***Evelyn Castillo***, University of Florida **Room G:** MicroCT Imaging of Bone Samples II ***Rasesh Kapadia***, Scanco Medical
11:30am	Congress Concludes

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- Reduced registration fees for the ISBM Congresses
- Access to the Members Only section of the ISBM website, which provides documents for state-of-the-art methods in bone morphometry and an Image Gallery with photos of bone cellular and structural features.

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