



# ELEVENTH INTERNATIONAL CONFERENCE ON THE CHEMISTRY AND BIOLOGY OF MINERALIZED TISSUES

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Welcome!

We are honored to have co-organized the 11<sup>th</sup> ICCBMT. It has been our goal to maintain the legacy that was carefully nurtured by the founding fathers of the ICCBMT, Arthur Veis, Melvin Glimcher and William Butler. This meeting has succeeded once again in attracting a group of scientists and their trainees from many different research disciplines with the common goal of understanding the chemistry and biology of mineralized tissues. While the program is indeed full, our conference location in beautiful southern Wisconsin is ideal to promote the high level of professional and social interaction that has been a hallmark of previous conferences.

Enclosed in this packet contains your nametag, program schedule, and a memory stick that includes the full ICCBMT program and abstracts.

We hope you find the 11<sup>th</sup> ICCBMT as memorable as its predecessors.

Sincerely,

Jeffrey Gorski, PhD  
Co-Chair 11<sup>th</sup> ICCBMT

Eve Donnelly, PhD  
Co-Chair 11<sup>th</sup> ICCBMT

Charles Sfeir, DDS, PhD  
Co-Chair 11<sup>th</sup> ICCBMT

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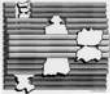
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## **Poster and Oral Presentation Guidelines**

### Poster Presentations

Poster boards are 4X8 ft. Push pins will be supplied.

Posters should be displayed from Sunday evening to Thursday evening.

There will be 2 separate evening poster sessions with assignments to specific sessions listed in the Program-Schedule.

Refreshments will be provided at the poster sessions.

The presenters are asked to stand by their posters on the assigned days and times as noted in the Schedule.

### Oral Presentations

Speakers should ensure that their oral presentations be downloaded either during Registration on Sunday, or prior to their individual sessions. Both PC and Mac laptops will be available. Prior to the sessions, the Speakers should introduce themselves to the Chairpersons. Oral presentations should be 15 minutes and 5 minutes for discussion.

**Time limits will be strictly enforced by the Chairs.**

## **ICCBMT Meeting Regulations**

Cell phones must be turned off during sessions. No photography or recording of any session including posters will be allowed without prior permission.

## **ICCBMT Keynote Speaker**



David Eyre (Burgess Chair of Orthopaedic Investigation) graduated from the Univ. of Leeds with an honors degree in Biochemistry in 1966, continued in postgraduate research on dental enamel proteins for a PhD in Biochemistry in 1969. After a post-doctoral fellowship with Melvin Glimcher at Harvard (Mass. General Hospital and Children's Hospital) working on bone collagen, he joined the Kennedy Institute of Rheumatology in London as a staff scientist to work with Helen Muir on cartilage in osteoarthritis.

Recruited as a faculty member at Harvard/Children's Hospital in 1976, Dr. Eyre focused his research on protein defects underlying heritable skeletal disease. Appointed in 1985 as first holder of the Ernest M. Burgess chair at the Univ. of Washington in Seattle, his basic collagen studies led to the development of novel biomarkers of bone resorption based on collagen peptides in urine and serum, which have become a standard in clinical studies on bone metabolism and osteoporosis drug development trials.

Dr. Eyre is a recognized expert in the fields of collagen and extracellular matrix biology with fundamental contributions to our knowledge of collagen cross-linking mechanisms, bone and cartilage biomarker development and molecular mechanisms that underlie heritable skeletal disorders. An author of over 200 peer-reviewed publications and the inventor on over 40 US patents, his research has been funded continuously by competitive NIH grants for over 25 years.



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**Schedule**

<b>SUNDAY, October 27, 2013</b>		
<b>12-4:00pm</b>	<b>Hotel check in</b> <b>Pick up registration packet and name tag from front desk</b>	
<b>2-5:00pm</b>	<b>Welcome reception (beer and wine available)</b> <b>Download Monday oral presentations (Gorski Suite)</b> <b>Posters (Salon ABC: posters should be displayed from Sunday evening to Thursday evening)</b>	<b>Gorski Suite</b>
<b>5:30-7:00pm</b>	<b>Dinner</b>	<b>Evergreen 1-2</b>
<b>Sunday Session 1</b>	<b>New Approaches to Investigation of Cell Lineage and Mineral Phase of Calcified Tissues</b> Session Co-chairs: Graeme Hunter and Michael Morris	<b>Salon ABC</b>
<b>Chairs</b>	<b>Eve Donnelly, Jeff Gorski, Charles Sfeir – 11<sup>th</sup> ICCBMT Organizers</b>	
<b>7-7:15pm</b>	<b>Opening Remarks</b>	<b>Organizers</b>
7:15	Pulp Cell Tracking by Nuclear Imaging for Dental Tissue Engineering	Sibylle Opsahl Vital
7:35	Mineral Association Changes the Secondary Structure and Dynamic Properties of Amelogenin	Wendy Shaw
7:55	Multiscale Phenotypic Analysis of Osteogenesis Imperfecta in Murine Bone	Joseph M. Wallace
8:15	Heterotopic Ossification and Raman Spectroscopy: Early Diagnosis, Age, and Burn Injuries	Katherine E. Cilwa
<b>8:35pm</b>	<b>Summary and Discussion</b>	



<b>MONDAY, October 28, 2013</b>		
<b>7-8:30am</b>	<b>Breakfast</b>	<b>Evergreen 1-2</b>
<b>Monday Session 2</b>	<b>Amelogenesis- Gene Expression and Proteins</b> Session Co-chairs: Janet Oldak and Michel Goldberg	<b>Salon ABC</b>
<b>8:30 -8:40am</b>	<b>Opening Remarks</b>	<b>Organizers</b>
8:40	Regulation of Calcium Phosphate Formation by Native Amelogenins in vitro.	Henry C. Margolis
9:00	Transcriptional Regulation of Amelotin gene by Proinflammatory Cytokines in Gingival Fibroblasts	Yohei Nakayama
9:20	Ameloblast Transcriptome Changes from Secretory to Maturation Stages	James P. Simmer
9:40	Moonlighting Enamel Proteins - The Systemic Expression of Amelogenin and Ameloblastin	Jamie Jacques
10:00	Uncoupling Protein-2 is an Antioxidant that is Upregulated in the Enamel Organ of Fluoride-Treated Rats	Maiko Suzuki
<b>10:20am</b>	<b>Break: Coffee and tea</b>	<b>Ballroom Foyer</b>
<b>Monday Session 3</b>	<b>Structure and Function of Dentinal Proteins</b> Session Co-chairs: Marc McKee and Jim Simmer	<b>Salon ABC</b>
10:40	Identifying Protein-Protein Interactions at the Dentogingival Attachment Site	Bernhard Ganss
11:00	Characterization of Peritubular Dentin: An Enigmatic, Non-collagenous Mineralized Tissue	Jason R. Dorvee
11:20	Ultrastructural Organization of Dentin in Mice Lacking Dentin Sialoprophosphoprotein	Elia Beniash
11:40	Matrix Metalloproteinase-20 is Enriched in the Dentin-enamel Junction of Mature Teeth Where it Could Play a Role in Enamel Delamination Following Radiotherapy	Ahmad Mousa
<b>12-1:00pm</b>	<b>Lunch</b>	<b>Evergreen 1-2</b>
<b>1-2:15pm</b>	<b>Funding Opportunities for Young Investigators</b> <b>Jason Wan, NIH/NIDCR</b> <b>Panel Discussion and Q&amp;A</b>	<b>Salon ABC</b>
<b>Monday Session 4</b>	<b>Functional Dynamics of Dental Pulp Cells</b> Session Co-chairs: Elia Beniash and Antonio Nanci	<b>Salon ABC</b>
2:30	Quantification of Clonal Heterogeneity of Mesenchymal Progenitor Cells in Dental Pulp and Bone Marrow	Rachel Waddington
2:50	Variations in Dental Pulp Stem Cell Ageing and Response to Oxidative Stress Influence Regenerative Potential	Alastair J Sloan
3:10	Insights into the Effects of Fibroblast Growth Factor (FGF) Signaling on Odontoprogenitors in the Dental Pulp	Karen Sagomonyants
<b>3:30pm</b>	<b>Break: Coffee and tea</b>	<b>Ballroom Foyer</b>
3:50	Gain of Function MDA5 Mutation Affects Cell Survival and Collagen Expression in Human Dental Cells	Changming Lu
4:10	Structural and Molecular Basis for Control of Mineralization at the Periodontal Ligament-Cementum Junction	Eli D. Sone
4:30	Characterization of the Bone Sialoprotein (Bsp)-null Phenotype: Role in Periodontal Tissue Integrity	Harvey A. Goldberg
<b>4:50-5:00pm</b>	<b>Summary and Discussion</b>	
<b>5-6:30pm</b>	<b>Free time</b>	
<b>6:30pm</b>	<b>Dinner</b>	<b>Evergreen 1-2</b>



<b>TUESDAY, October 29, 2013</b>		
<b>7-8:30am</b>	<b>Breakfast</b>	<b>Evergreen 1-2</b>
<b>Tuesday Session 5</b>	<b>Microstructural Characterization and Molecular Analysis of Mineralized Tissues</b> Session Co-chairs: Lara Estroff and Peter Fratzl	<b>Salon ABC</b>
<b>8:30-8:40am</b>	<b>Opening Remarks</b>	<b>Organizers</b>
8:40	Gain of Mineral and Loss of Non-mineral Material in Enamel Depend on Ameloblastin.	Yong-Hee P Chun (Patricia)
9:00	Shedding Light on the Chemical Diversity of Ectopic Calcifications in Kidney Tissues: Diagnostic and Research Aspects	Arnaud Dessombz
9:20	The Role of Phosphorylation in Dentin Phosphoprotein Peptide Absorption to Hydroxyapatite Surfaces: A Molecular Dynamics Study	Eduardo Villarreal-Ramirez
9:40	Dark-field Transmission Electron Microscopy of Cortical Bone Reveals Further Hierarchical Detail	Henry P. Schwarz
10:00	Correlative Microscopy and Spectroscopy of Buried Interfaces in Tooth Enamel	Michael J. Cohen
<b>10:20am</b>	<b>Break: Coffee and tea</b>	<b>Ballroom Foyer</b>
<b>Tuesday Session 6</b>	<b>Animal and Disease Models of Mineralization</b> Session Co-chairs: Jerry Feng and Larry Fisher	<b>Salon ABC</b>
10:40	MEPE-derived ASARM Peptide Impairs Mineralization in Tooth Models of X-linked Hypophosphatemia	Catherine Chaussain
11:00	Osterix Deficiency Disrupts Ameloblast and Odontoblast Maturation but Not Tooth Morphogenesis	Amjad Javed
11:20	Osterix is Essential for Stability and Function of Runx2 Protein During Bone Formation	Harunur Rashid
11:40	Dental Tissue Phenotype and Ultrastructural Changes in Mouse Brtl/+ Teeth	Kostas Verdelis
<b>12-1:00pm</b>	<b>Lunch</b>	<b>Evergreen 1-2</b>
<b>1- 2:00pm</b>	<b>Free time for discussion</b>	
<b>Tuesday Session 6</b>	<b>Animal and Disease Models of Mineralization</b> Session Co-chairs: Jerry Feng and Larry Fisher	<b>Salon ABC</b>
2:00	Cortical Bone Matrix Composition in Cynomolgus Monkeys Treated with Sclerostin Antibody	Ryan Ross
2:20	Inactivation of Gnas Alters Postnatal Bone Quality	Eileen Shore
2:40	Bone-Specific DMP1 Overexpression: Implications on Endochondral Ossification	Joshua D. Padovano
<b>3:00pm</b>	<b>Break: Coffee and tea</b>	<b>Ballroom Foyer</b>
3:20	Regulatory Circuitry of Msx 1 and Msx2 Homeogenes in Bone	Ariane Berdal
3:40	Characterization of DSPP-Cerulean/DMP1-Cherry Reporter Mice	Mina Mina
4:00	An Essential Role of Bmp Receptor1A (ALK3) in Postnatal Skeleton Formation	Jerry Feng
<b>4:20-4:30pm</b>	<b>Summary and Discussion</b>	
<b>4:30-6:30pm</b>	<b>Free time</b>	
<b>6:30pm</b>	<b>Dinner</b>	<b>Evergreen 1-2</b>
<b>7:30-9:30pm</b>	<b>Poster Session-1</b> <b>Refreshments: (beer and wine will be available)</b>	<b>Salon C</b>



<b>WEDNESDAY, October 30, 2013</b>		
<b>7-8:30am</b>	<b>Breakfast</b>	<b>Evergreen 1-2</b>
<b>Wednesday Session 7</b>	<b>Osteoblasts and Osteocytes</b> Session Co-chairs: Lynda Bonewald and Harvey Goldberg	<b>Salon ABC</b>
<b>8:30-8:40am</b>	<b>Opening Remarks</b>	<b>Organizers</b>
8:40	Postnatal Osteoblast Function and Skeletal Homeostasis is Dependent on Runx2	Mitra Adhami
9:00	Transcriptional Regulation of Dentin Matrix Protein 1 by TCF11 during Osteoblast and Odontoblast Differentiation	Anne George
9:20	Hedgehog Regulated Matrix Metalloproteinases Expressed in Bone-Invasive KCOTs	Hope M. Amm
9:40	Endothelin Signaling Promotes Osteogenesis via Wnt Signaling Derepression and Induction of IGF-1 and PGE2	Michael G. Johnson
10:00	The Rapid $1\alpha,25(\text{OH})_2\text{D}_3$ -Mediated Activation of Phospholipase A2 is Modulated by $\text{Ca}^{2+}$ /CaM-Dependent Protein Kinase II in Osteoblasts	Maryam Doroudi
10:20	Osteocytes are Key to the Formation and Maintenance of Mineralized Bone	Yinshi (Rene) Ren
<b>10:40am</b>	<b>Break: Coffee and tea</b>	<b>Ballroom Foyer</b>
<b>Wednesday Session 8</b>	<b>Clinical Translation Studies</b> Session Co-chairs: Adele Boskey and Ariane Berdal	<b>Salon ABC</b>
11:00	Examining if Nanoscale Mineral Properties in Bone Formed in Response to Loading is Altered by Aging	Marta Aido
11:20	Enamel Defects Reflect Perinatal Exposure to Bisphenol A	Katia Jedeon
11:40	Raman Spectroscopic Analysis of Combat-related Heterotopic Ossification Development	Nicole J. Crane
12:00	The Character of Gene Expression of Human Periosteum Used to Form New Tissue in Allograft Bone	William Landis
<b>12:20-12:30pm</b>	<b>Summary and Discussion</b>	
<b>12:30-1:30pm</b>	<b>Lunch</b>	<b>Evergreen 1-2</b>
<b>1:00-2:30pm</b>	<b>Free time for discussion</b>	
<b>Wednesday Session 9</b>	<b>Mineralization Mechanisms in Non-Mammalian Systems</b> Session Co-chairs: Keith Alvares and Bill Landis	<b>Salon ABC</b>
2:30	Proteomic Analysis of Skeletal Organic Matrix from the Stony Coral <i>Stylophora Pistillata</i>	Jean L. Drake
2:50	Crystal-Modulating Protein Films from Molluscan Nacre that form Mesocrystalline Calcite Assemblies	Eric P. Chang
3:10	Meso-to-Nanoscale Structure and Mechanical Properties of Biogenic Crystals from Mollusks	Lara A. Estroff
<b>3:30pm</b>	<b>Break: Coffee and tea</b>	<b>Ballroom Foyer</b>
4:05	Microstructures, Phylogeny and Biomineralization Across the Regular Sea Urchins	Stuart R. Stock
4:25	Sea Urchin Embryo Spicules: Buried Interfaces, Phase Transformations, and Mechanical Properties	Derk Joester
4:45	Influence of Genetic Selection and Physical Activity on Bone Properties of Laying Hens	Alejandro B. Rodriguez-Navarro
<b>5:05-5:15pm</b>	<b>Summary Discussion</b>	
<b>5:15-6:30pm</b>	<b>Free time</b>	
<b>6:30pm</b>	<b>DINNER</b>	<b>Evergreen 1-2</b>
<b>7:30-9:30pm</b>	<b>Poster Session-2</b> <b>Refreshments: (beer and wine will be available)</b>	<b>Salon C</b>





Thursday, October 31, 2013		
7-8:30am	Breakfast	Evergreen 1-2
Thursday Session 10	<b>Role of Non-collagenous Proteins in Mineralization</b> Session Co-chairs: Mary McDougall and Eileen Shore	Salon ABC
8:30-8:40am	<b>Opening Remarks</b>	
8:40	Tensile Force in Collagen Induced by Osmotic Pressure	Peter Fratzl
9:00	The High Resolution Xray Crystal Structure of Bovine 3 Glu Osteocalcin	Terry L. Dowd
9:20	Osteopontin as a Novel Substrate for Proprotein Convertase 5/6 (PCSK5) in Bone	Betty Hoac
9:40	IPV-like Motif in Secreted Acidic Proteins of Many Species Enables Rapid Exit from the Ca <sup>2+</sup> -rich ER	Larry W. Fisher
10:00am	<b>Break: Coffee and tea</b>	<b>Ballroom Foyer</b>
10:20	Bones and Stones- Why are Inhibitory Proteins Involved in Both?	Laurie Gower
10:40	Dentin Phosphoprotein Binds Annexin 2 and is Involved in Calcium Transport in Rat Kidney Ureteric Bud Cells	Keith Alvares
11:00	Binding Affinity and Effect on Hydroxyapatite Mineralization of the Enamel Protein Amelotin	Nastaran Abbarin
11:20	DSP-PP Precursor Protein Cleavage	Helena H. Ritchie
11:40	Phosphorylation-dependent Incorporation of Osteopontin Peptides into Calcium Oxalate Crystals	Graeme K. Hunter
12:00	FAM20C Plays Critical Roles in Biomineralization	Xiaofang Wang
12:20-12:30	<b>Summary and Discussion</b>	
12:30-1:30pm	<b>Lunch</b>	<b>Evergreen 1-2</b>
1:30-2:30pm	<b>Free time for discussion</b>	<b>Salon ABC</b>
Thursday Session 11	<b>Tissue Engineering</b> Session Co-chairs: Barbara Boyan and Charles Sfeir	Salon ABC
2:30	Mineralization of Dense Collagen Hydrogel Scaffolds Regulated by Human Dental Pulp Stem Cells	Benjamin R. Coyac
2:50	Intracellular Mechanism of Osteogenic Effect of Magnesium Ion on Bone Marrow Stromal Cells	Sayuri Yoshizawa
3:10	Dual Functioning Peptides Encourage Human Bone Marrow Cell Specific Attachment to Mineralized Biomaterials	Harsha Ramaraju
3:30	Amelogenin-chitosan Matrix forms an Organized Mineralized Layer with a Dense Interface with Enamel	Qichao Ruan
3:50	Plithotaxis, a Collective Cell Migration, Regulates the Sliding of Proliferating Pulp Cells Located in the Root Apical Papilla Niche	Michel Goldberg
4:10	Differential Responses of Osteoblast Lineage Cells to Nanotopographically-modified, Microroughened Titanium-aluminum-vanadium (TiAlV) Alloy Surfaces	Rolando A. Gittens
4:30-4:40pm	<b>Summary and Discussion</b>	
4:40 -5:30	<b>Free time</b>	
5:30-7:00pm	<b>Banquet</b>	<b>Evergreen 1-2</b>
7-8:15pm	<b>The Eve and Arthur Veis Keynote Speaker: David Eyre, PhD</b> University of Washington Director of Burgess Chair Research Program <b>Collagen Cross-linking and Mineralization: Insights from Rare OI Variants</b>	Salon ABC
8:15pm	<b>Awards Presentation and Acknowledgements</b> <b>Concluding Remarks</b>	Salon ABC

## FRIDAY, November 1, 2013

7-8:30	Breakfast /Departure	Evergreen 1-2
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Poster Presentations – TUESDAY (posters should be displayed from Sunday evening to Thursday evening)	
T-1	<b>Bond Strength of Dentin and Bleach-treated Enamel from Two Different AI Mouse Models</b> Megan K. Pugach, Fusun Ozer, Rajappa Mulmadgi, Yong Li, Cynthia Suggs, Ashok B. Kulkarni, John D. Bartlett, J. Timothy Wright, Carolyn W. Gibson, Rochelle G. Lindemeyer
T-2	<b>Aggregatibacter Actinomycetemcomitans Lipopolysaccharide Regulates Bone Sialoprotein Gene Transcription</b> Yorimasa Ogata, Liming Zhou, Hideki Takai, Masaru Mezawa, Xinyue Li
T-3	<b>Variations in the Bone Mineral Composition in Mouse Models of Osteogenesis Imperfecta: An FTIRI Study</b> Adele Boskey, Lyudmila Spevak, Cathleen Raggio, Marco Masci, Rhima Colema
T-4	<b>Remineralization of Dentin Lesions via the Polymer-Induced Liquid-Precursor (PILP) Process</b> Neha S. Saxena, Anora K. Burwell, Taili Thula-Mata, Michael Kurylo, Sunita P. Ho, Yung-Ching Chien, Jing Cheng, Nancy F. Cheng, Stuart A. Gansky, Sally J. Marshall, Stefan Habeliz, Grayson W. Marshall, Laurie B. Gower
T-5	<b>Asporin in Epithelial and Mesenchymal Mineralized Tissues</b> Sophia Houari, Tillman Wurtz, Didier Ferbus, Danielle Chateau, Ariane Berald, Sylvie Babajko
T-6	<b>Self-Assembled Recombinant Elastic-Like Polypeptides Based Hydrogel: A Novel Approach for Calcium Phosphate Mineralization with Complex Morphology</b> Y.P. Li, X. Chen, J.C. Rodriguez-Cabello, C. Aparicio
T-7	<b>NanoCrystallite Models for Amorphous Calcium Carbonate</b> Sourabh Sinha and Peter Rez
T-8	<b>Investigating Bone Mineral Precursors in Osteoblastic Cells</b> Dongbo Wang, Wojtek Tutak, Ming Tung, Alex Fernandez-Martinez, Adam Wallace, Carl Simon, Marcus Cicerone, Sheng Lin-Gibson, Young Lee
T-9	<b>Evaluation of Bone Mass, Osteoblast Function and Treatment Results in Murine Models of Rett Syndrome</b> Mary E. Blue, Charlotte Eyring, Adele Boskey, Steven Doty, Neal S. Fedarko, Mir Ahamed Hossain, Ludmilla Lukashova, Jay R. Shapiro
T-10	<b>“Biomimetic” Randall’s Plaque to Develop an In-Vitro Model System for Studying the Role of Acidic Proteins in Renal Stone Formation</b> Archana Chidambaram, Laurie Gower, Saeed Khan
T-11	<b>Collagen Structure Controls Water Diffusion within Intra-Fibrillar Space: Implications for Ca<sup>2+</sup> and HPO<sub>4</sub><sup>2-</sup> Ion Transport and Calcium Phosphate Nucleation in Bone Biomineralization</b> Zhijun Xu, Weilong Zhao, Yang Yang, Qiang Cui, Nita Sahai
T-12	<b>Primary Cilia and Cartilage Development in Hypothyroidism</b> Jessica Kemppainen, Robin Jacquet, Dennis Weiner, William Landis
T-13	<b>Freshwater Acidic Inputs on the Coastal Ocean Alter the Chemical Composition of Marine Bivalves Periostracum</b> Laura Ramajo, Alejandro Rodriguez-Navarro, Nazaret Dominguez-Gasca, Luis Prado, Rodrigo Torres, Nelson Lagos
T-14	<b>The Search for the IPV Motif-Binding ER Cargo Receptor used to Traffic Acidic Proteins</b> Ying Yin and Larry W. Fisher
T-15	<b>Three-dimensional Structure of the Collagenous Network of Human Lamellar Bone: A New Understanding of the Hierarchical Organization</b> Natalie Reznikov, Ron Shahar, Steve Weiner
T-16	<b>Lentiviral Overexpression of Bone Sialoprotein Does Not Influence the Osteogenic Outcome of MC3T3-E1 Cells</b> Rima M. Wazen, Patricia Adachi, Thomas Dognac-Galant, Marianne Ariganello, Antonio Nanci
T-17	<b>Quantitative Amelogenin-Enamelin Co-localization in Developing Mouse Enamel</b> Victoria Gallon, Lisha Chen, Janet Moradian-Oldak
T-18	<b>X-ray Absorption Spectroscopy at the Oxygen K-edge in Forming Sea Urchin Spicules</b> Ross T. DeVol, Rebecca A. Metzler, Alejandro Fernandez-Martinez, Assaf Gal, Boaz Pokroy, Catherine Jenkins, Ian C. Olson, Christopher E. Killian, P.U.P.A. Gilbert
T-19	<b>The Osteoinductive Property of Calcium Phosphate is Mediated by Connexin 43</b> Fatima N Syed-Picard, Samer Zaky, Thottala Jayaraman, Raymond S Lam, Elia Beniash, Charles Sfeir
T-20	<b>Context-Dependent Function of Trps1 in the Mineralization Process</b> Maria Kuzynski, Callie Mobley, Tony Winters, Manisha Yadav, Anne Poliard, Odile Kellermann, Jose Luis Millan, Dobrawa Napierala



## Poster Presentations- WEDNESDAY (posters should be displayed from Sunday evening to Thursday evening)

W-1	<b>Identification of Membrane Proteins in the Spicule Deposition Vesicles (SDV) of Sea Urchin Primary Mesenchyme Cells (PMCs)</b> Huey-Ming Mak, Regina Knapp, Derk Joester
W-2	<b>In Vitro Studies of the Migratory Behavior of Sea Urchin PMC in VEGF Gradients</b> Irene Y. Chang, Regina Knapp, Ching-Hsuan Wu, Derk Joester
W-3	<b>Vascular Endothelial Growth Factor (VEGF) Directs Single Crystal Growth In Vitro</b> Regina T. Knapp, Ching-Hsuan Wu, Kellen C. Mobilia, Derk Joester
W-4	<b>Location and Orientation of Charged Amino Acid Sidechains in Collagen Hole and Overlap Zones Direct Intrafibrillar Calcium Phosphate (Ca-Pi) Nucleation in Skeletal Biomineralization</b> Zhijun Xu, Yang Yang, Qiang Cui, William J. Landis, Nita Sahai
W-5	<b>Are Exogenous Polyphosphates Utilized for In Vitro Mineralization?</b> Marianne B. Ariganello, Sidney Omelon, Rima Wazen, Fabio Variola, Antonio Nanci
W-6	<b>Regional Identity Controls Osteogenesis in the Embryonic Skull</b> Heather Szabo Rogers, Sabrina Schulze, Brian J. Cusack, Jacqui Tabler, Wills Barrell, Karen Liu
W-7	<b>Synthesis and Characterization of Biologically Relevant Hydrated Calcium Pyrophosphate Phases</b> Pierre Gras, Nicolas Ratel-Ramond, Pierre Lecante, Christian Rey, Stéphanie Sarda, Christèle Combes
W-8	<b>Osteogenic Induction Medium Affect Wnt and BMP Molecules in a Micro-Nanostructure In Vitro Osteogenesis Model</b> R. Olivares-Navarrete, C.A. Cundiff, S.L. Hyzy, Z.Schwartz, B.D. Boyan
W-9	<b>X-Ray and Infrared Imaging as Tools to Chemically and Spatially Characterize Matrix-Mineral Deposition in Osteoblasts</b> Lisa M. Miller, Meghan E. Faillace, Alvin S. Acerbo, Roger J. Phipps Presenter: Ryan Ross
W-10	<b>Mechanical Vibration Inhibits Osteoclast Formation by Reducing DC-STAMP Receptor Expression in Osteoclast Precursor Cells</b> R.N. Kulkarni, P.A. Vogelwede, D. Liu
W-11	<b>Influence of VEGF on the Gene Regulatory Network of <i>Strongylocentrotus Purpuratus</i></b> Darcie Patterson, Regina Knapp, Derk Joester
W-12	<b>Amorphous-Crystalline Transitions of Biomimetic Ca, Sr, and Ba Carbonates Grown Inside Liposomes</b> Michael L. Whittaker, Chantel C. Tester, Derk Joester
W-13	<b>Adverse Effects of BMP2 on Bone Formation and Osseointegration</b> Sharon L. Hyzy, Rene Olivares-Navarrete, Barbara D. Boyan, Zvi Schwartz
W-14	<b>24R,25-dihydroxyvitamin D3 Protects Rat Articular Chondrocytes from IL-1<math>\beta</math> Induced Degradation in vitro</b> Qingfen Pan, Barbara Boyan, Zvi Schwartz
W-15	<b>Post-translational Modification is Critical for Biomineralization</b> C. Sfeir, J. Thottala, E. Beniash
W-16	<b>In Situ Zymography Assay to Evidence Gelatinolytic Activity in Decalcified and Undecalcified Human Dentin</b> Thiago Stape, Wander J da Silva, Luis Roberto M. Martins, Leo Tjäderhane, Sergio R Line, Marcelo R Marques
T-17	<b>Formation and Growth of Randall's Plaques in Human Kidneys</b> Archana Chidambaram, Douglas E. Rodriguez, Laurie B. Gower, Saeed R. Khan
W-18	<b>Estrogen Receptor E36 Mediates the Anti-apoptotic Effect of Estradiol in vitro and Associates with Clinical Outcome in vivo</b> Reyhaan A. Chaudhri, Agreen Hadadi, Barbara D. Boyan, Zvi Schwartz
W-19	<b>Cell Morphology and Proliferation of MG-63 Osteoblasts on the (100), (101), and (001) Faces of Mineral Apatite</b> Marzena Z. Suder and Katarzyna M. Stadnicka



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