

## FINAL PROGRAM

**Sunday Oct. 20** Arrival Day Afternoon Registration Desk Open 16:00 - 19:00 (*Main Lobby*)

**Welcome Reception 19:30 - 22:00** (*Canada Room*)

**Monday Oct. 21** Conference Day Registration Desk Open 08:00 - 09:00 (*Outaouais Conference Room Foyer*)

Monday Morning October 21

Oral Session 1 – **Biom mineralization: Structure-function** (*Outaouais Conference Room*)

Time		Speaker	Presentation Title	Institution
09:00		Marc McKee Dobrawa Napierala Steve Weiner	Welcome Address from Conference Co-organizers	
09:10	1.1	Lia Addadi <i>Session Keynote and Chair</i>	Mapping the first mineral deposition stages in the growth plate of mouse tibiae at nano-meter resolution and under hydrated conditions	Weizmann Institute of Science, Rehovot, Israel
09:40	1.2	Mahdi Ayoubi	Spatial correlation between mineralization foci and the osteocyte network in calcifying osteoid	Max Planck Institute of Colloids and Interfaces, Potsdam, Germany
10:00	1.3	Daniel Buss	Nanoscale 3D structure of the bone mineralization front and osteocyte lacuno-canalicular network in normal and Hyp mouse bone using dual-beam FIBSEM microscopy	McGill University, Montreal, Canada
10:20	1.4	Elena Macias-Sanchez <i>Session Co-chair</i>	Ultrastructure of calcifying avian tendon	Max Planck Institute of Colloids and Interfaces, Potsdam, Germany
10:40	1.5	Bryan Lee	Visualization of <i>in vivo</i> mineralization using atom probe tomography	McMaster University, Hamilton, Canada
11:00		<i>COFFEE BREAK</i>		
11:30	1.6	Wendy Shaw	Solid state NMR studies of amelogenin provide insight into structural contributions to enamel formation	Pacific Northwest National Laboratory, Richland, USA
11:50	1.7	Jeff Gorski	Model of how ameloblasts and odontoblasts pre-engineer dentin-enamel junction's stability yet facilitate sensitivity to cancer radiotherapy and caries	University of Missouri-Kansas City, Kansas City, MO
12:10	1.8	Rebecca Metzler	Amphibalanus amphitrite begins exoskeleton mineralization within 48 hours of metamorphosis	Colgate University, Hamilton, USA
12:30	1.9	Philippe Ganot	The red coral as a comparative model for cnidarian biomineralization	Centre Scientifique de Monaco, Monaco
12:50		<i>LUNCH BUFFET</i>		<i>Rest. Chantignoles</i>
POSTER SET-UP (after lunch)		All posters	All posters on display until Thursday afternoon	<i>Canada Room</i>

Monday Afternoon October 21

Oral Session 2 – **Tooth and bone formation and structure** (*Otaouais Conference Room*)

Time	Speaker	Presentation Title	Institution
15:00	2.1 <b>Derk Joester</b> <i>Session Keynote and Chair</i>	Chemical gradients in human enamel crystallites: Implications for amelogenesis, caries resistance, and mechanical properties	Northwestern University, Chicago, USA
15:30	2.2 Henry Margolis	Amelogenin phosphorylation is essential for enamel formation and ameloblast integrity	University of Pittsburgh, Pittsburgh, USA
15:50	2.3 James Simmer	Odontogenesis-associated phosphoprotein knockout mice (Odaph <sup>-/-</sup> ) phenotype and pattern of expression in developing teeth	University of Michigan, Ann Arbor, USA
16:10	2.4 Yuanyuan Hu	The acid phosphatase 4 (Acp4) defective mouse phenotype shows amelogenesis requires a functional system of protein turnover	University of Michigan, Ann Arbor, USA
16:30	<i>COFFEE BREAK</i>		
17:00	2.5 Niels Asmussen	Matrix vesicle microRNAs regulate growth plate chondrocyte proliferation and maturation	Virginia Commonwealth University, Richmond, USA
17:20	2.6 Heather Szabo-Rogers <i>Session Co-chair</i>	Chondrocyte polarity requires protein-protein interactions between Prickle1 and Dishevelled 2 and 3 during endochondral ossification	University of Pittsburgh, Pittsburgh, USA
17:40	2.7 Ron Shahar	New insights into the process of osteogenesis of anosteocytic bone	The Hebrew University, Rehovot, Israel
18:00	2.8 Dakota Binkley	Exploration of plasma focused ion beam (PFIB) tomography as a tool to understand the hierarchical structure of human bone	McMaster University, Hamilton, Canada
18:20	<i>DINNER BUFFET</i>		
20:00	FLASH ORAL POSTER PRESENTATIONS	P6F, P8F, P9F, P11F, P15F, P19F, P20F, P21F, P24F	<i>Otaouais Conference Room</i>
20:30	POSTER SESSION	All Posters P1 - P89 ( P1 - P28 presenting )	<i>Canada Room</i>
22:00 - 24:00	BONeFIRE BY THE RIVER	River's edge, Cash Bar (rain date Tuesday evening)	<i>Riverbank bonfire site</i>

Tuesday Morning October 22

Oral Session 3 – **Regulation of cell function in mineralized tissues** (*Otaouais Conference Room*)

Title	Speaker	Presentation Title	Institution
09:00	3.1 <b>Pamela Robey</b> <i>Session Keynote and Chair</i>	The biological basis of bone marrow stromal cell heterogeneity	NIDCR, NIH, Bethesda, USA
09:30	3.2 Fiona Roberts	Osteoblast-specific Enpp1 deficiency engenders increased bone mass, bone mineral density and insulin resistance	University of Edinburgh, Midlothian, UK
09:50	3.3 Hadla Hariri	Usp53, a PTH target regulating bone turnover and mesenchymal stem cell differentiation	McGill University, Montreal, Canada

10:10	3.4	Carole Le Henaff	Deletion of PKA Regulatory Subunit1A in osteoblasts causes dramatic bone turnover with an expansion of trabecular area at the expense of cortical bone	New York University, New York, USA
10:30	3.5	Dobrawa Napierala	Deciphering molecular pathway of phosphate-induced mineralization	University of Pittsburgh, Pittsburgh, USA
10:50		<i>COFFEE BREAK</i>		
11:10	3.6	Claire Bardet <i>Session Co-chair</i>	Impaired ameloblast tight junction due to Claudin-16 disruption alters acid transcellular pathway during enamel formation	University Paris Descartes, Paris, France
11:30	3.7	Xiaofang Wang	FAM20B-catalyzed glycosaminoglycans determine the monophyodont phenotype in mice by restricting FGFR2B signaling	Texas A&M University, Dallas, USA
11:50	3.8	Jingtan Su	Ameloblastin-cell interaction is mediated by an evolutionary conserved amphipathic helix encoded by exon 5	University of Southern California, Los Angeles, USA
12:10	3.9	Lynda Bonewald	Role and function of the D and L enantiomers of beta-aminioisobutyric acid, BAIBA, in the musculoskeletal system	Indiana University, Indianapolis, USA
12:30		GROUP PHOTO	All conference participants (outdoors, in front of Outaouais Conference Room)	
12:50		<i>LUNCH BUFFET</i>	ICCBMT Board of Directors Meeting (private lunch Newfoundland/PEI room)	<i>Rest. Chantignoles</i>

Tuesday Afternoon October 22

**Funding Information Session (optional) – Outaouais Conference Room**

Time	Speaker	Presentation Title	Institution
14:00 <i>Outaouais Conference Room</i>	1 <b>Martha Somerman</b> <i>Director NIDCR (of NIH)</i>	Research advancing health: Opportunities at NIDCR/NIH <i>National Institute of Dental and Craniofacial Research</i>	NIDCR (of National Institutes of Health), Bethesda, USA
14:30 <i>Outaouais Conference Room</i>	2 <b>Karim Khan</b> <i>Scientific Director IMHA (of CIHR)</i>	Structure, vision and funding opportunities at IMHA/CIHR <i>Institute of Musculoskeletal Health and Arthritis</i>	IMHA (of Canadian Institutes of Health Research), Ottawa, Canada
15:00	Question Period		
15:15 - 15:45	Breakout Discussion Sessions	Group 1 with Martha Somerman ( <i>Montebello Room</i> ) Group 2 with Karim Khan ( <i>Le Club Room</i> )	

**FREE AFTERNOON** Sign-up and fee required for this organized group activity (exact cost depends on the # of participants)  
**Onsite Curling (16:00 - 18:00), with instructor**  
 ~\$CAN30/person/2h (cash only, there is an ATM onsite), 4 ice sheets, 8 players per sheet, teams of 4.  
Other Individual Activities (see concierge) (C = cost)  
 Tennis indoor and outdoor (C, racquets), Squash (C, racquets), Bicycles (C), Basketball, Running path 4 km, Swimming pool, Hot tubs, Sauna, Spa (C), Golf (C), Off-road Land Rover experience (C), Skeet disc shooting (C), Montebello town centre (20-minute walk, Quebec cheese and chocolate shops)

18:30		<i>DINNER BUFFET</i>		
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20:00		FLASH ORAL POSTER PRESENTATIONS	P29F, P30F, P41F, P42F, P56F, P57F, P61F, P63F, P68F	<i>Outaouais Conference Room</i>
20:30		POSTER SESSION	All Posters P1 - P89 ( P29 - P68 presenting)	<i>Canada Room</i>

Wednesday Morning October 23

Oral Session 4 – **Proteins and mineral** (*Outaouais Conference Room*)

Time		Speaker	Presentation Title	Institution
09:00	4.1	<b>Nico Sommerdijk</b> <i>Session Keynote and Chair</i>	Understanding biomineralization in bone: The mechanism of collagen mineralization	Radboud Institute, Radboud University Medical Center, Nijmegen, Netherlands
09:30	4.2	Tengteng Tang <i>Session Co-chair</i>	Mineral and organic matrix interaction in calcifying avian leg tendons: a focused ion beam - scanning electron microscopy study	Max Planck Institute of Colloids and Interfaces, Potsdam, Germany
09:50	4.3	Showan Nazhat	Multiscale structural evolution of citrate-induced biomineralization in 3D printable dense collagen gels	McGill University, Montreal, Canada
10:10	4.4	Peter Bell	Proteomic analysis of human bone for the identification of missing proteins and characterisation of the bone N-terminome	University of British Columbia, Vancouver, Canada
10:30		<i>COFFEE BREAK</i>		
11:00	4.5	Henrik Birkedal	Bone biomineral properties vary across human osteonal bone	Aarhus University, Aarhus, Denmark
11:20	4.6	Svetlana Komarova	Mathematical model connecting physical chemistry and biological processes of bone mineralization	McGill University, Montreal, Canada
11:40	4.7	Sina Koeppert	Cellular clearance and biological activity of calciprotein particles depend on their maturation state and crystallinity	RWTH Aachen University Hospital, Aachen, Germany
12:00	4.8	Frédéric Marin	Protein repertoires in fresh, archaeological and fossil mollusk shells: Some case studies	University of Bourgogne, Dijon, France
12:20	4.9	Alejandro Rodriguez-Navarro	Influence of organic matter on Guinea fowl eggshell mineralization, structural organization and mechanical properties	University of Granada, Granada, Spain
12:40		<i>LUNCH BUFFET</i>		<i>Rest. Chantignoles</i>

Wednesday Afternoon October 23

Oral Session 5 – **Mineralization diseases** (*Outaouais Conference Room*)

Time		Speaker	Presentation Title	Institution
15:00	5.1	<b>Brian Foster</b> <i>Session Keynote and Chair</i>	Disparate manifestations of hereditary rachitic disorders in dentoalveolar mineralized tissues	The Ohio State University, Columbus, USA
15:30	5.2	Shih-Kai Wang	Human matrix metalloproteinase 20 (MMP20) disease-causing mutations and their phenotypes in enamel and dentin	National Taiwan University School of Dentistry, Taipei City, Taiwan

15:50	5.3	Betty Hoac	Genetic ablation of osteopontin in osteomalacic Hyp mice partially rescues the deficient mineralization without correcting hypophosphatemia	McGill University, Montreal, Canada
16:10	5.4	Marian Young	OPG-Fc treatment partially rescues low bone mass phenotype of Bgn/Fmod deficient mice	NIDCR, NIH, Bethesda, USA
16:30		<i>COFFEE BREAK</i>		
17:00	5.5	Samantha Robinson	Exploring the role of BRIL in the pathogenesis of atypical type VI osteogenesis imperfecta	Shriners Hospital for Children, Montreal, Canada
17:20	5.6	Priyam Jani <i>Session Co-chair</i>	Loeys-Deitz Syndrome: Craniofacial complex involvement in mice and men	NIH, Bethesda, USA
17:40	5.7	Abhinav Parashar	Prevention of ectopic calcification by MGP: The role of its conserved residues	McGill University, Montreal, Canada
18:00	5.8	Maximilian Rummeler	Examining bone composition and nanoscale mineral properties in a mouse model of multiple myeloma	McGill University, Montreal, Canada
18:20		<i>DINNER BUFFET</i>		<i>Rest. Chantignoles</i>
20:00		FLASH ORAL POSTER PRESENTATIONS	P69F, P70F, P71F, P72F, P73F, P75F, P77F, P78F, P84F	<i>Outaouais Conference Room</i>
20:30		POSTER SESSION	All Posters P1 - P89 ( P69 - P89 presenting )	<i>Canada Room</i>

Thursday Morning October 24

Oral Session 6 – **Tissue engineering and biomechanics of mineralized tissues** (*Outaouais Conf. Room*)

Time		Speaker	Presentation Title	Institution
09:00	6.1	<b>Luiz Bertassoni</b> <i>Session Keynote and Chair</i>	Intrafibrillar mineralization of vascularized and innervated stem cell-laden collagen hydrogels for rapid fabrication of humanized bone models	Oregon Health & Science University, Portland, USA
09:30	6.2	Francesca Kim	Developing synthetic DNA nanostructures as models for investigating biomineralization	University of Toronto, Toronto, Canada
09:50	6.3	Paul Zaslansky	In situ hydrostatic compression and diffraction reveal increased stiffness of ashed dentine apatite mineral	Charité University, Berlin, Germany
10:10	6.4	Emeline Raguin <i>Session Co-chair</i>	Bone adaptation to unusually high mechanical loads: An unexpected three-dimensional structure at the bone-tooth interface in a mollusk eating fish ( <i>Pogonias cromis</i> )	The Weizmann Institute of Science, Rehovot, Israel
10:30		<i>COFFEE BREAK</i>		
10:50	6.5	Hila Tzipora Chase	Bird to the bone: trabecular structure in the wing varies across flight modes	University of Montana, Missoula, USA
11:10	6.6	Alexander van Tol	The role of the lacunocanalicular network and vascular porosity in the mechanoresponsiveness of bone	Max Planck Institute of Colloids and Interfaces, Potsdam, Germany
11:30	6.7	Victoria Schemenz	Correlations between the lacuno-canalicular network and its surrounding matrix after mechanical stimulation in murine tibiae	Max Planck Institute of Colloids and Interfaces, Potsdam, Germany
11:50	6.8	David Kohn	Correlations between composition, mechanics and age in human bone	University of Michigan, Ann Arbor, USA

12:10	6.9	Fabio Nudelman	Hard brachiopod shells can be folded when wet	University of Edinburgh, Edinburgh, UK
12:30	6.10	Marta Cerruti	A material science approach to understand cardiovascular calcification	McGill University, Montreal, Canada
12:50		EVALUATION FORMS	Complete conference evaluation forms	<i>Otaouais Conf. Room</i>
13:00		LUNCH BUFFET	ICCBMT Board of Directors Meeting (private lunch Newfoundland/PEI room)	<i>Rest. Chantignoles</i>
Afternoon		POSTER TAKE-DOWN	All posters to be removed from Canada Room	<i>Canada Room</i>

**FREE AFTERNOON** *Sign-up & fee required for these two organized group activities* (exact cost depends on the # of participants)  
**Onsite Curling (15:00 - 17:00) with instructor**, ~\$CAN30/person/2h (cash only, there is an ATM onsite), 4 ice sheets, 8 players per sheet, teams of 4.  
**Offsite Nature Safari Parc Omega (14:00 - 17:30)**, ~\$CAN40 (cash only, there is an ATM onsite), with shuttle bus, <https://www.parcomega.ca/en/>  
*Other Individual Activities (see concierge) (C = cost)*  
Tennis indoor and outdoor (C, racquets), Squash (C, racquets), Bicycles (C), Basketball, Running path 4 km, Swimming pool, Hot tubs, Sauna, Spa (C), Golf (C), Off-road Land Rover experience (C), Skeet disc shooting (C), Montebello town centre (20-minute walk, Quebec cheese and chocolate shops).

### Thursday Evening October 24 (*Otaouais Conference Room*)

Time	Speaker	Presentation title	Institution
<b>18:00</b> <i>Otaouais Conference Room</i>	<b>Bjorn R. Olsen</b> MD, PhD <i>Eve and Arthur Veis Plenary Speaker</i>	<b>Cellular and molecular mechanisms in biomineralized tissue formation - lessons from genetic studies in humans and mice</b>	Harvard University, Boston, USA
19:00	<b>CONFERENCE BANQUET DINNER and Travel Award Presentations</b>		<i>Otaouais Conference Room</i>
21:00	<b>Dance Night (Cash Bar)</b>		<i>Bistro La Seigneurie</i>

*Neither the organizers nor the ICCBMT will accept any responsibility for accidents to conference delegates while at the meeting, or for damage to, or loss of, their personal property.*

### POSTER LIST

F = Flash Poster Presentation (3-minute oral presentation and regular poster display)

#	Presenter	Poster Title	Institution
P1	Eli Sone	Collagen biomineralization: Interplay of matrix and solution molecules	University of Toronto, Toronto, Canada
P2	Genevieve Romanowicz	Collagen cross-link inhibition differentially alters mineral between craniofacial and axial bones	University of Michigan, Canton, USA
P3	Sana Ansari	Correlation of collagen mineralization and non-collagenous proteins during osteoblast differentiation process	Eindhoven University of Technology, Eindhoven, Netherlands
P4	Anat Akiva	Developing a living <i>in vitro</i> model system for studying bone-cells communication and collagen mineralization	Radboud Institute, Radboud University Medical Center, Nijmegen, Netherlands
P5	Gayathri Visakan	Amelogenin-derived peptide promotes collagen mineralization and dentin remineralization	University of Southern California, Los Angeles, USA

P6-F	Harvey Goldberg	Thrombin cleaves within the collagen-binding sequence of bone sialoprotein	University of Western Ontario, London, Canada
P7	Roland Kroeger	Combining <i>in situ</i> and <i>ex situ</i> studies of hydroxyapatite formation in collagen to study mineralization dynamics	University of York, York, UK
P8-F	Jim De Yoreo	The impact of additives on crystallization of amorphous calcium carbonate	Pacific Northwest National Laboratory, Richland, USA
P9-F	Jonas Palle	Element distributions and crystallographic properties of human bone at <140 nm resolution in 2D and 3D	INANO, Aarhus University, Aarhus C, Denmark
P10	Gil Goobes	Apatite prepared with osteopontin forms platelets covered with layers of disordered calcium phosphate through strong organic-inorganic interaction	Bar Ilan University, Ramat Gan, Israel
P11-F	Erik Taylor	Raman and FTIR bone mineral crystallinity and carbonate content differentially relate to analytical physical chemical measures	Cornell University, Ithaca, USA
P12	Alejandro Rodriguez-Navarro	Factors controlling bone mineralization and bone quality in chickens	Universidad de Granada, Granada, Spain
P13	Marcos Cruz	The role of phospholipids from matrix vesicles on calcium phosphate nucleation, growth and collagen biomineralization	University of Sao Paulo, Ribeirão Preto, Brazil
P14	Scott Dillon	A tale of two phosphatases: how do matrix vesicles generate phosphate for bone mineralization?	The Roslin Institute & R(D)SVS, University of Edinburgh, Edinburgh, Scotland
P15-F	Rachel Waddington	Harvesting the osteogenic potential of dentally derived extracellular vesicles	Cardiff University, Cardiff, UK
P16	Sana Khalid	The role of ROS in Pi signaling and Pi-induced mineralization	University of Pittsburgh, Pittsburgh, USA
P17	Yinghua Chen	Deletion of the ER Ca <sup>2+</sup> sensor STIM1 in osteoblasts attenuates p38 MAPK signaling resulting in impaired bone and dentin formation	University of Illinois at Chicago, Chicago, USA
P18	Catherine Julien	Circadian clock regulation of molecular mechanisms underlying load-induced bone formation	Shriners Hospital for Children - Canada, Montréal, Canada
P19-F	Harunur Rashid	Deletion of Runx2 gene in hypertrophic chondrocytes disrupts cartilage resorption	University of Alabama at Birmingham, Birmingham, USA
P20-F	Alena Zelinka	Chondrocytes obtained from different regions of articular cartilage deep zone form tissues <i>in vitro</i> that vary in their time to mineralization	University of Toronto, Toronto, Canada
P21-F	Mairobys Socorro	Stress response protein SerpinB2 is implicated in the mineralization of skeletal and dental tissues	University of Pittsburgh, Pittsburgh, USA
P22	Annette Merkel	ER stress activates GRP78 and facilitates the internalization of DMP1 to promote matrix mineralization	University of Illinois at Chicago, Chicago, USA
P23	Catherine Julien	Gene expression response to swim training in anosteocytic and osteocytic teleost fish	Shriners Hospital for Children - Canada, Montreal, Canada
P24-F	Coralee Tye	Effect of lncRNAs on osteogenic differentiation of human mesenchymal stromal cells	University of Vermont, Burlington, USA
P25	Barbara Boyan	Microstructured and hydrophilic titanium surfaces mediate semaphorin3A production to enhance the differentiation of mesenchymal stem cells	Virginia Commonwealth University, Richmond, USA
P26	Alastair Sloan	Effect of calcium hydroxide on mandibular bone and bone marrow stem cells	Cardiff University, School of Dentistry, Cardiff, UK

P27	Charles Sfeir	Beyond growth factors: inorganic magnesium as drivers of bone differentiation	University of Pittsburgh, Pittsburgh, USA
P28	Yukiko Nakano	The function of miRNA derived from amelogenin exon4 in bone formation	University of California, San Francisco, USA
P29-F	Keith Alvares	Effect of VEGF on spiculogenesis in <i>S. purpuratus</i> PMCs <i>in vitro</i> : A transcriptomics approach	Northwestern University, Evanston, USA
P30-F	Rodrigo Lacruz	Multiple effects of calcium in oral health	New York University, New York, USA
P31	Aurélien Fouillen	Periodontopathogens degrade the epithelial derived extracellular matrix that attaches the gingiva to teeth	Université de Montréal, Montreal, Canada
P32	Charline Mary	Characterization of the antibacterial potential of the protein SCPPPQ1	Université de Montréal, Montreal, Canada
P33	Shahrazad Nouri	A novel model system to study the matrix-mediated attachment of epithelial cells to mineralized tooth surfaces	University of Toronto, Toronto, Canada
P34	Yong-Hee Chun	Secreted calcium-binding phosphoproteins (SCPP) genes expressed in the development of teeth and junctional epithelium	UT Health San Antonio, San Antonio, USA
P35	Megan Pugach	Investigating potential roles of ameloblastin and enamelin in enamel development	The Forsyth Institute, Cambridge, USA
P36	Rucha Bapat	Enamel matrix protein Ameloblastin interacts with Amelogenin <i>in vivo</i> and <i>in vitro</i>	Center for Craniofacial Molecular Biology, Ostrow School of Dentistry, Los Angeles, USA
P37	Garry Buchko	Residue-specific tracking of the pH-induced self-assembly of murine amelogenin using solution-state NMR spectroscopy	Pacific Northwest National Laboratory, Richland, USA
P38	Charles E. Smith	Similarities and differences in mineral phase development in Mmp20 null and Amelx null mice enamel as characterized by focused ion beam SEM	McGill University, Montreal, Canada
P39	John Bartlett	Matrix metalloproteinase-20 (MMP20) overexpression induces CCN2/CTGF mediated fibrosis that precludes enamel formation in mouse incisors	Ohio State University, College of Dentistry, Columbus, USA
P40	Catherine Chaussain	The absence of claudin-10 in ameloblasts impairs amelogenesis	Université Paris Descartes, Montrouge, France
P41-F	Veronica Costiniti	Mitochondrial function in enamel development through calcium-redox interplay	NYU College of Dentistry, New York, USA
P42-F	Amjad Javed	Sp7 differentially regulates dentin and enamel synthesis during tooth development	University of Alabama at Birmingham, Birmingham, USA
P43	Baptiste Depalle	Evolution of mineral density in secretory prismatic and inter-prismatic enamel	The Forsyth Institute, Cambridge, USA
P44	Kostas Verdelis	Mineral characterization during enamel maturation by raman confocal microscopy	University of Pittsburgh, Pittsburgh, USA
P45	Maisoon Al-Jawad	2D synchrotron XRD of human dental enamel reveals more highly aligned nanocrystals are linked to lower demineralization rates in an acidic environment	School of Dentistry, University of Leeds, Leeds, UK
P46	Derk Joester	Assessing enamel remineralization at the nanoscale - an <i>in vitro</i> platform	Northwestern University, Chicago, USA
P47	Garry Buchko	Energetics of amelogenin binding to hydroxyapatite - Insights into the potential origins of Amelogenesis Imperfecta	Pacific Northwest National Laboratory, Richland, USA



P48	Elia Beniash	Effects of leucine-rich amelogenin peptide on calcium phosphate mineralization at low pH	University of Pittsburgh, Pittsburgh, USA
P49	Yushi Bai	Amelogenin ribbon guided mineralization process via the liquid precursor pathway	University of California, San Francisco, USA
P50	Alexander Danesi	Guided mineral growth on self-assembled amelogenin scaffolds	University of Toronto, Faculty of Dentistry, Toronto, Canada
P51	Susrut Akkineni	Apatite mineralizes at amyloid-solution interfaces found during enamel biomineralization	Pacific Northwest National Laboratory, Richland, USA
P52	Javier Medina-Sanchez	A biomineral thermometer that not always works: the influence of proteins and complex hydrography	University of Stirling, Stirling, UK
P53	Tian Liang	Dentin sialophosphoprotein (DSPP) function and role in inherited dentin defects discerned by comparing Dspp <sup>-/-</sup> , Dspp-1fs, and Dspp-2fs mice	University of Michigan School of Dentistry, Ann Arbor, USA
P54	Claire Bardet	Effects of X-Linked Hypophosphatemia standard treatment on osteoarticular lesions in the Hyp mouse	Université Paris Descartes, Montrouge, France
P55	Elizabeth Guirado	New insights into the structure of the extracellular matrix of XLH dentin and periodontal ligament	University of Illinois at Chicago College of Dentistry, Chicago, USA
P56-F	Nan Hatch	Phenotype severity modulators of craniofacial skeletal abnormalities in the FGFR2-C342Y/+ mouse model of Crouzon craniosynostosis syndrome	University of Michigan, Ann Arbor, USA
P57-F	Olivier Duverger	New insights into enamel rod decussation: lessons from Loey-Dietz Syndrome	National Institute of Dental and Craniofacial Research (NIH), Bethesda, USA
P58	Philippe Campeau	HSP90AA1 as a candidate gene for Camurati-Engelmann disease	Université de Montréal, Montreal, Canada
P59	Céline Gaucher	NGS analysis for isolated dentin and enamel structure anomalies: relevance of a panel approach and contributions of WGS for undiagnosed patients	Université Paris Descartes, Montrouge, France
P60	Faleh Tamimi	Dental phenotype in different OI types	McGill University, Montreal, Canada
P61-F	Mariana Reis	A preliminary investigation of the role of aging on the dentin matrix	Restorative Dentistry, College of Dentistry, Chicago, USA
P62	Maiko Suzuki	Fluoride activates histone acetyltransferase (HAT) to promote fluoride toxicity in LS8 cells	The Dental College of Georgia, Augusta University, Augusta, USA
P63-F	Elizabeth Zimmermann	Examining tissue composition, whole-bone morphology and mechanical behavior in Marfan Syndrome	Shriners Hospital for Children Canada, Montreal, Canada
P64	Olivier Le Saux	The molecular and physiological roles of ABCC6: more than meets the eyes	John A. Burns School of Medicine, Honolulu, USA
P65	Andrea Buescher	Cellular calcification triggered by blood-borne calciprotein particles	Helmholtz-Institute for Biomedical Engineering, RWTH Aachen University Hospital, Aachen, Germany
P66	Vicky MacRae	Autophagy a novel link between matrix vesicles and vascular calcification	University of Edinburgh, Peebles, UK
P67	Pierre-Marie Andrault	Elastolytic activity of cysteine cathepsins K, S and V promotes vascular calcification	University of British Columbia, Vancouver, Canada
P68-F	Thomas Robinson	The use of hexametaphosphate to prevent and treat pathological calcification	University of Birmingham, Birmingham, UK

P69-F	Aaron Chiou	Multiscale characterization of bone matrix changes in a pre-metastatic mouse model of breast cancer	Cornell University, Ithaca, USA
P70-F	Minjee Kang	Evaluating malignancy-dependent adhesion of breast cancer-derived extracellular vesicles to bone-mimetic scaffolds as a model for bone metastasis	Cornell University, Ithaca, USA
P71-F	Matthew Whitman	Model systems to study interactions of breast cancer cells and mineralized bone matrix	Cornell University, Ithaca, USA
P72-F	Zheng Wang	Astonishing overlooked roles of tendons in normal bone formation, remodeling and trauma repair	Texas A&M University College of Dentistry, Dallas, USA
P73-F	Lara Estroff	Development and evaluation of bone-derived scaffolds with mineral gradients for enthesis tissue engineering	Cornell University, Ithaca, USA
P74	Juan Taboas	Hydrogel composition alone regulates chondrogenesis and endochondral ossification	University of Pittsburgh, Pittsburgh, USA
P75-F	Michael Chavez	Defective alveolar bone healing in mice genetically ablated for bone sialoprotein	Ohio State University, Columbus, USA
P76	Anne-Margaux Collignon	Dental pulp stem cells to understand the mechanisms underlying the repair of critical-sized cranio-facial defects	Université Paris Descartes, Montrouge, France
P77-F	Anushree Vijaykumar	The effects of Wnt3a on $\alpha$ SMA+ perivascular cells during reparative dentinogenesis <i>in vivo</i>	UConn Health Center, Farmington, USA
P78-F	Ammar Alsheghri	Optimization of porous scaffolds inspired by trabecular bone topology	McGill University, Montreal, Canada
P79	Rizhi Wang	Hypermineralization compromises bone quality in the elderly hips	University of British Columbia, Vancouver, Canada
P80	Sidney Omelon	Changing ex vivo cortical bone mineral surface chemistry affects mechanical properties and fracture surface	McGill University, Montreal, Canada
P81	Dainelys Guadarrama Bello	Surface nanocavitation of titanium modulates macrophage activity	Université de Montréal, Montreal, Canada
P82	Laurie Gower	Unraveling osteoclast activity versus resorption with a biomimetic bone matrix	University of Florida, Gainesville, USA
P83	Antonio Nanci	System for application of controlled forces on dental implants in rat maxillae: influence of the number of load cycles on bone healing	Universite de Montreal, Montreal, Canada
P84-F	S. Prakash Parthiban	Bone as a novel bioink for 3D bioprinting	Oregon Health & Science University, Portland, USA
P85	Faleh Tamimi	High strength bioceramics by selective regulation with chiral biomolecules	McGill University, Montreal, Canada
P86	Fatemeh Mohabatpour	Novel approaches for enamel regeneration using dental epithelial stem cells, specialized gene delivery systems and 3D-printed scaffolds	University of Saskatchewan, Saskatoon, Canada
P87	Mehrnoosh Neshatian	Enamel protein amelotin and nano-hydroxyapatite for accelerated dentin remineralization	University of Toronto, Toronto, Canada
P88	Sophia Smith	Titanium-containing silicate based bioactive glass for enamel remineralization	McGill University, Montreal, Canada
P89	James Weaver	New scanning electron microscopy imaging techniques for the large-scale high-throughput characterization of hierarchical biological materials and synthetic constructs	Harvard University, Cambridge, USA