33rd Annual Meeting of the Canadian Biomaterials Society

May 24-27, 2017

University of Manitoba

Full Program

Thursday May 25

8:30-9:30am: Keynote Speaker

Biomaterials for Regenerative Engineering Applications

Guillermo Ameer, Sc.D.

Professor of Biomedical Engineering, McCormick School of Engineering
Professor of Surgery, Feinberg School of Medicine
Northwest University

Dr. Ameer is a professor in the Biomedical Engineering Department at the McCormick School of Engineering and the Department of Surgery at the Feinberg School of Medicine, Northwestern University. He is also a resident faculty member at the Simpson-Querrey Institute for BioNanotechnology, a member of the Chemistry of Life Processes Institute, and the International Institute for Nanotechnology. Dr. Ameer received his Bachelor's degree in Chemical Engineering from the University of Texas at Austin, and his doctoral degree in Chemical and Biomedical Engineering from the Massachusetts Institute of Technology. His research interests include biomaterials, tissue engineering, regenerative engineering, on demand, patient-specific medical devices, controlled drug delivery and bio/nanotechnology for improved therapeutics and diagnostics. Specifically, Dr. Ameer's laboratory pioneered the development and applications of citric acid-based biomaterials. He has co-authored over 250 peer-reviewed journal publications and conference abstracts, several book chapters, and over 40 patents issued and pending in 9 countries, several of which have been licensed to develop innovative medical products. Dr. Ameer has received numerous awards, including election to Technology Review Magazine's top 100 Young Innovators in the world, the NSF CAREER award, and the American Heart Association's Established Investigator Award, and the American Institute of Chemical Engineers' MAC Eminent Chemical Engineer Award. He has served on several national and international scientific review committees for funding research. He was elected Fellow of the American Institute of Medical and Biological Engineering and of the Biomedical Engineering Society. Dr. Ameer is currently a member of the Board of Directors of the Biomedical Engineering Society and co-chair of the Diversity Committee. Dr. Ameer is an Associate Editor for the journal Regenerative Engineering and Translational Medicine and he is on the editorial boards of the Journal of Biomedical Materials Research: Part A and Organogenesis. He is a member of the Scientific Advisory Board of Acuitive Technologies, Inc. and was the co-founder of several medical device companies in the areas of dialysis, vascular surgery, and orthopedic surgery.

8:15-8:30am Opening Remarks

10:00am-12:00pm Oral Presentation (Three parallel sessions S1/S2/S3)

S1: Cell - Biomaterial Interactions		
10:00am	114049	Toll-like receptor 2-mediated NF-ÎºB activation by damage-associated molecular patterns on biomaterial surfaces **McKiel, Laura A.; Fitzpatrick, Lindsay E.**
10:15am	114162	Hybrid crosslinking of gelatin methacrylate hydrogel with highly tunable stiffness and degradation **Rizwan, Muhammad; Yim, Evelyn K.F.**
10:30am	114074	Layer-by-layer single-cell encapsulation protects cells from apoptotic factors **Li, Wenyan; Kong, Jiming**
10:45am	114064	Development of a Superior Decellularized Human Dermal Product for Advanced Wound Care: From Basic Science to Clinical Application **Paul F. Gratzer; Mark Glazebrook**
11:00am	114227	Effect of Residual Stress Caused by Nanosecond Laser Pulses on Cell-behavior of Mammalian Fibroblast Cells **Amirkianoosh Kiani**
11:15am	114086	Polymeric Delivery of siRNA against Integrin-Î²1 (CD29) to Reduce Attachment and Migration of Breast Cancer Cells **Meenakshi Sundaram, Daniel Nisakar; Uludag, Hasan**
11:30am	114182	Electrochemical Corrosion Study on Novel Biodegradable Metals for Ureteral Stent Applications **Champagne, Sébastien; Hermawan, Hendra.**
11:45am	114202	Single-step loading of cells into nanofibrous hydrogel scaffolds via reactive electrospinning **Fei Xu; Todd Hoare**

S2: Cardiovascular Biomaterials		
10:00am	114181	Comparing the Vascular Smooth Muscle Cell Differentiation Potential of Freshly-isolated vs. Cryopreserved Adipose Stromal Cells **Zhang, Xiaoqing; Santerre, J. Paul**
10:15am	114106	Effect of cell seeding density on the mechanical and structural maturation of collagen gel-based tubular scaffolds for vascular tissue engineering **Camasao, Dimitria B; Mantovani, Diego**
10:30am	114110	Pleiotrophin/heparin-Modified Type 1 Collagen Gels for Improved Re-Endothelialisation **Copes Francesco; Mantovani Diego**

10:45am	114165	Differentiation of Mononuclear Cells From Cord Blood in Endothelial Cells Forming Colony Onto Bioactive Poly(ethylene terephthalate) Film for In Situ Endothelialization **Caroline Royer; Gaétan Laroche**
11:00am	114125	Development of a Biocompatible Upconversion Nanoparticle Model for Theranostic Applications in Anti-angiogenesis **Tse, Wai Hei; Zhang, Jin**
11:15am	114260	Variable Expressions of Pro-Fibrotic Markers Observed in Primary Human Mesenchymal Cells Seeded in Decellularized Human Cardiac Extracellular Matrix **Alison L Müller; Darren H Freed**
11:30am	114247	Mesenchymal progenitor cell differentiation on electrospun poly (ester amide) fibres for vascular tissue engineering **Sarah Kiros; Kibret Mequanint**

S3: Orthopedic Biomaterials I		
10:00am	114242	Strength and Biocompatibility of Polycaprolactone-Borophosphosilicate Hybrid Biomaterials for Bone Tissue Engineering **Mondal, Dibakar; Mequanint, Kibret**
10:15am	114115	Bioactive glass foams as bone graft substitutes **Charbonneau, Cindy; Davies, John**
10:30am	114070	BMP-2 and PDGF Gene Delivery to Rat Skull Periosteum and Bone-Derived Cells by PEI Non-Viral Carriers **Tsekoura, Eleni; Uludag, Hasan**
10:45am	114236	A Novel Nanosilver/Nanosilica Hydrogel for Bone Regeneration in Infected Bone Defects **Xingying Zhang; Malcolm Xing**
11:00am	114195	Effects of Metal Ion-induced Oxidative Stress on Interleukin-1beta Production in Macrophages In Vitro **Maxime-Alexandre Ferko; Catelas, Isabelle**
11:15am	114177	Evaporation-induced surface crystallization of calcium phosphate and osteoclast activity **Sijia Chen; Rizhi Wang**
11:30am	114249	The interaction of threads and implant microtopography on implant resistance to reverse torque **Liddell, Robert S; Davies, John E**

2:00-3:00pm: Keynote Speak

Conductive Biomaterial Enhanced Electrical Propagation of Left Ventricular Scar to Attenuate Ventricular Arrhythmia

Ren-Ke Li, MD, PhD. FCAHS

Professor of Surgery, University of Toronto
Senior Scientist, University Health Network

Dr. Ren-Ke Li, MD, PhD is a *Professor* of Medicine in the Department of Surgery, Division of Cardiac Surgery at the University of Toronto. Dr. Li is also a *Senior Scientist* at the Toronto General Research Institute, University Health Network working in the field of stem cell transplantation and tissue engineering. He is the recipient of the *Canada Research Chair* in Cardiac Regeneration (Tier 1) of the Canadian Institutes of Health Research and was a *Career Investigator* of the Heart and Stroke Foundation of Canada.

Dr. Li has been on the forefront in the field of cell transplantation and tissue engineering. In 1996, he published the first demonstration that cells transplanted into myocardial scar tissue survived, differentiated into muscle tissue, and improved heart function. Over 25 years his research group has defined muscle cell transplantation for Cardiac Repair, followed by stem cell transplantation for Cardiac Regeneration. Both cell repair and regeneration technologies have been translated to clinical application at Phase I and II levels. Since the patients with heart failure are aged population, currently, his research group is attempting to determine the mechanisms by which transplanted cells exert their beneficial effects by Rejuvenation of aged stem cells and aged recipients. Clarifying these mechanisms of Repair, Regeneration and Rejuvenation will allow them to develop the "next generation" of cell therapy for restoration of heart function of aged patients.

Because of his contribution to cardiovascular science, Dr. Ren-Ke Li was an elected Fellow of the Canadian Academy of Health Sciences, the International Academy of Cardiovascular Science and the Canadian Cardiovascular Society. He has received several national and international awards, including **Scientific Award**, Chinese American Medical Society; **Clemson Award for Applied Research**, Society for Biomaterials; **Professional Achievement Award**, Chinese Professionals Association of Canada; **The Queen Elizabeth II Diamond Jubilee Medal**, The Governor General of Canada; **Premier's Research Excellence Award**, Ontario Ministry of Energy, Science and Technology; **Lister Prize**, University of Toronto; **Mel Silverman Mentorship Award**, University of Toronto. Dr. Li has published **232** peer-reviewed papers in very good Journals. He has been invited to contribute several commentaries and viewpoint articles and is an international opinion leader in his field.

3:00-4:00 Oral Presentation (Three parallel sessions S4/S5/S6)

S4: Biomaterials for wound care		
3:00pm	114194	Investigating Infrared Photomodulation on Increased Cell Growth Rate of Human Corneal Epithelial Cells **Smith, Corinna; Gorbet, Maud**
3:15pm	114231	In-Situ-Generated Vasoactive Intestinal Peptide Loaded Microspheres in Mussel-Inspired Polycaprolactone Nanosheets Creating Spatiotemporal Releasing Microenvironment to Promote Wound Healing **Gurankit Singh; Malcolm Xing**
3:30pm	114253	A Novel Nano-silver Coated and Hydrogel-impregnated Polyurethane Nanofibrous Mesh for Ventral Hernia Repair **Xu, Kaige, Malcolm Xing**

S5: Biomaterials for Diagnostics		
3:00pm	114108	Well-defined hyaluronic acid based hydrogels for studying primary lymphoma tumours **Baker, Alexander E.G.; Shoichet, Molly S.**
3:15pm	114147	Development of a Zebrafish-based platform for evaluating the Inflammatory Response to Implanted Biomaterials **Chaplin, William T.; Fitzpatrick, Lindsay E**
3:30pm	114201	The development of an in vitro co-culture device for bacterial infection studies **Siddiqui, Sanya; Moraes, Christopher**

S6: Soft Biomaterials		
3:00pm	114107	Human decellularized adipose tissue-derived bead foams enhance the survival and angiogenic response of fibroblasts isolated from human chronic wounds in an in vitro chronic wound model **Morissette Martin, Pascal; Flynn, Lauren E.**
3:15pm	114145	Layer-by-layer paper-stacking nano fibrous membranes to deliver adipose-derived stem cells for bone regeneration **Hui Xu; Wen Zhong**
3:30pm	114160	Optimization of a Tissue-adhesive Gel with Rapid Gelation and Strong Mechanical Properties for Cell Therapy and Tissue Engineering **Samaei, Sepideh; Lerouge, Sophie**
3:45pm	114161	Injectable mussel-inspired immobilization of platelet-rich plasma on microspheres bridging adipose micro-tissues to improve autologous fat transplantation **Qiang Chang; Malcolm Xing**

Friday May 26

8:30-9:30am: Keynote Speaker

Functional Hydrogels for Biomedical Applications

Jason A. Burdick, PhD

Professor
Department of Bioengineering
University of Pennsylvania

Jason A. Burdick, PhD is a Professor of Bioengineering at the University of Pennsylvania. Dr. Burdick's research involves the development of hydrogels for various biological applications and his laboratory is specifically interested in understanding and controlling polymers on a molecular level to control overall macroscopic properties. The applications of his research range from controlling stem cell differentiation through material cues to fabricating scaffolding for regenerative medicine and tissue repair. Jason currently has over 200 peer-reviewed publications and has been awarded a K22 Scholar Development and Career Transition Award through the National Institutes of Health, an Early Career Award through the Coulter Foundation, a National Science Foundation CAREER award, a Packard Fellowship in Science and Engineering, and an American Heart Association Established Investigator Award. He is on the editorial boards of *Tissue Engineering, Biomacromolecules, Biofabrication, and Journal of Biomedical Materials Research A*, and is an Associate Editor for *ACS Biomaterials Science & Engineering*.

10:00-11:00 Oral Presentation (Three parallel sessions S7/S8/S9)

S7: Polymeric Biomaterials		
10:00am	114254	Injectable and Degradable Poly(Oligoethylene glycol methacrylate) Hydrogels With Tunable Charge Densities: Adhesive Peptide-Free Cell Scaffolds for Ophthalmic Applications **Bakaic, Emilia; Hoare, Todd**
10:15am	114174	Influence of Fluorinated Divinyl Urethane Monomers on Resin Composite Chemical Biostability and Physical Properties **Lagowski, Michael; Santerre, J. Paul**
10:30am	114257	Anticoagulation and anticalcification properties of sulfonated chitosan grafted Surfaces **Campelo, Clayton S.; Mantovani, Diego**
10:45am	114252	PLA surface functionalization: a first step toward targeted bioconjugation for biomedical applications **Rodríguez Durán, Iván; Laroche, Gaétan**

S8: 3D printing in Biomaterials		
10:00am	114198	Bioprinting of Alginate/Gelatin as Tunable Composite Hydrogels Directing Multicellular Tumor Spheroid Formation **Tao Jiang; Antonio De Leon-Rodriguez**
10:15am	114262	Skin-Inspired Multifunctional Autonomic-Intrinsic Conductive Self-Healing Hydrogels with Pressure Sensitivity, Stretchability and 3D Printability **Mohammad Ali Darabi; Malcolm Xing**
10:30am		Human Tissues on Demand with Next Generation 3D Bioprinting **Tamer Mohamed**

S9: Soft Biomaterials I		
10:00am	114259	Identification and characterization of adhesive proteins in freshwater mussels for the development of novel bioadhesives **Ng, Judith; Sone, Eli D.**
10:15am	114095	Injectable chitosan hydrogels as embolizing and doxycycline delivery system for the treatment of abdominal aortic aneurysm **Zehtabi Fatemeh; Lerouge Sophie**
10:30am	114105	Injectable Thermosensitive Chitosan/Chondroitin Sulfate Hydrogels for Cell Therapy **Alinejad, Yasaman; Lerouge, Sophie**
10:45am	114100	The Modification of the Viscoelastic Mechanical Properties of Collagen Hydrogels by Creep **Drouin, Bernard; Mantovani, Diego**

11:00am-12:00pm: Clinician Keynote Speakers

11:00am -11:30am Session 1

Biomaterial Translational Medicine in China- From Lab Science to the Measures of Wound Care

Jun Wu, MD

Professor of Department of Burns
Southwest Hospital, The Third Military Medical University
The First Affiliated Hospital, Sun Yat-Sen University, China
Editor-in-Chief of Burns and Trauma
Regional Representative Southeast Asia, International Society for Burn Injury (ISBI)

Dr. Wu is Director of the Institute of Burn Research, Southwest Hospital, Third Military Medical University and the Director of Chongqing Key Lab for Diseases Proteomics. He is the Elected-president of Chinese Burn Association, the President of Chinese Burn Rehabilitation Association, President of Biophysics and Regeneration Medicine Association, and a member of the standing committee of Chinese Biomaterial Society.

11:30am -12:00pm Session 2

Richard Keijzer, MD, MSc, PhD

Thorlakson Chair in Surgical Research
Associate Professor of Surgery,
Pediatrics & Child Health and Physiology & Pathophysiology
Pediatric Surgeon-Scientist
HSC Children's Hospital and Children's Hospital Research Institute of Manitoba

Dr. Kiejzer's clinical interest concentrates on minimally invasive Pediatric Surgery and his research focuses on congenital anomalies in general and congenital diaphragmatic hernia and pulmonary hypoplasia in particular. He has expertise in mechanisms of normal and abnormal lung development associated with congenital diaphragmatic hernia (CDH).

12:15-1:15pm Industrial/clinician Lunch Workshop

1:15-2:15pm: Keynote Speak

Development of Bioinspired Multifunctional Materials Based on Controllable Intermolecular and surface interactions

Hongbo Zeng, PhD

Professor
Department of Chemical and Materials Engineering
University of Alberta

Hongbo Zeng is a Professor in the Department of Chemical and Materials Engineering at the University of Alberta, and holds a Canada Research Chair (Tier 1) in intermolecular forces and interfacial science. He received his BSc and MSc degrees in chemical engineering and polymer materials at Tsinghua University in 2001 and 2003, respectively, and obtained his PhD in chemical engineering at the University of California, Santa Barbara in 2007 under the supervision of Prof. Jacob Israelachvili and Prof. Matthew Tirrell. Prof. Zeng's research interests are in colloid and interface science, functional materials & nanotechnology, with a special focus on intermolecular and surface interactions in soft matter (e.g., polymers, biopolymers, biological systems, surfactants, and emulsions) and engineering processes. He has published over 150 peer-reviewed research articles in top journals, 11 conference papers, 7 book chapters on the related topics, coauthored/edited a book "Polymer Adhesion, Friction and Lubrication" (Wiley), and holds 9 patents. He was a recipient of the Materials Research Society (MRS) Graduate Research Award (Silver Medal) (2007), the Petro-Canada Young Innovator Award (2013), Martha Cook Piper Research Prize (2016), and The Canadian Journal of Chemical Engineering Lectureship Award (2016).

2:15-3:15: Oral Presentation (Three parallel sessions S10/S11/S12)

S10: Biomechanics		
2:15pm	114172	The effects of fluid viscosity on stress shielding in uniformly textured UHMWPE during the dwell phase of SDS motion **Ippolito, Christina M.; Bryant, Tim**
2:30pm	114210	Cellular Microarray Platform for Analyzing the Response of Cells in Three-Dimensional Matrix to Mechanical Stimuli **Sakthivel, Kabilan; Kim, Keekyoung**
2:45pm	114122	A contact mechanics model for lumbar implant-natural frequency and damping ratio **Mohammad Hodaei; Nan Wu**
3:00pm	114209	Measurement of the Mechanical Properties of Native Type I Collagen Fibrils Using Atomic Force Microscopy **Bao, Guangyu; Mongeau, Luc**

S11: Biosensing and imaging		
2:15pm	114085	Design and Analysis of a piezoelectric nano-composite paint **Osho, Samuel; Wu, Nan**
2:30pm	114204	Highly flexible and resilient elastin hybrid cryogels with shape memory, injectability, conductivity and magnetic responsive properties **Yuqing Liu; Malcolm Xing**
2:45pm	114139	Nanostructured Biosensor for Detecting Tear Glucose **Longyi Chen; Jin Zhang**
3:00pm	114216	Laser-Generated Silica Nanofibers Embedded with Electrospun Gold Nanoparticles: A Novel Platform for Biocompatible Sensing Devices **Amirkianoosh Kiani**

S12: Soft Tissue Engineering		
2:15pm	114136	Injectable Chitosan hydrogels with high Mechanical Properties for IVD Regeneration **Adoungotchodo, Atma-Luseck G; Alinejad, Yasaman; Lerouge, Sophie**
2:30pm	114097	Engineering personalized neural tissue using the novel functionalized transcription factor IASCL1 **Meghan Robinson; Stephanie Willerth**
2:45pm	114186	Comparison of loading methods of an antimicrobial agent in electrospun PLGA fibers **Emily Buck; Marta Cerruti**
3:00pm	114112	Electrically conductive membrane promoted human keratinocyte proliferation and keratin's expressions **Hyun Jin Park; Ze Zhang; Mahmoud Rouabhia**

Saturday May 27

8:30-9:30am: Keynote Speaker

BIOENGINEERING FUNCTIONAL TISSUES FOR DRUG DISCOVERY AND THERAPY

Milica Radisic, PhD

Professor (IBBME, ChemE)
Chemical Engineering & Applied Chemistry
University of Toronto

Drugs are routinely withdrawn from the market due to serious toxicities and adverse cardiovascular effects. In this presentation, we will discuss advances in developing mature human cardiac tissues, termed Biowires, starting from induced pluripotent stem cells for drug discovery and modelling of disease. Biowires capture the physiological hallmarks of the adult human myocardium, are situated in inert plastic and enable on-line non-destructive readouts of contractile force and Ca2 transients, as well as the collective ion channel behavior. For probing of more complex physiological questions, dependent on the flow of culture media or blood, we developed a vascularized tissue platform termed AngioChip that provides mechanically stable yet permeable blood vessels. AngioChip supported engineering of liver and heart-on-a-chip as well as direct surgical implantation of the tissues into the vasculature of animals. Finally, to enable minimally invasive delivery of engineered tissues into the body, a new shape-memory scaffold was developed that enables delivery of fully functional tissues on the heart, liver and aorta through a keyhole surgery. Next steps include long term in vivo studies for both AngioChips and injectable tissues to prove they are suitable for therapeutic applications.

10:00-12:15am Oral Presentation (Three parallel sessions S13/S14/S15)

S13: Polymeric Biomaterials		
10:00am	114178	A PEG-Peptide Conjugate Can Controllably Polymerize in Blood to Increase Clot Adhesion **Chan, Karen Y. T.; Kastrup, Christian J.**
10:15am	114130	Influence of argon dielectric barrier discharges on degradable ethyl lactate plasma **Laurent, Morgane; Laroche, Gaétan**
10:30am	114134	High-throughput Fabrication of Cell-laden Gelatin Methacrylate Microgels for Tissue Engineering **Mohamed G. A. Mohamed; Keekyoung Kim**
10:45am	114258	Electrospun Polyurethane-Gelatin Scaffolds for Manufacturing Skin Substitutes **Mohammadali Sheikholeslam; Saeid Amini-Nik**
11:00am	114089	Self-assembling Peptide Matrix for Localized Stimulation of Tissue Resident Human Mast Cells in Skin **Lu, Lei; Unsworth, Larry D**
11:15am	114256	Development of Chitosan Coatings by Plasma-Grafting for Prevention of Contamination for Medical Devices **Vaz, Juliana M.; Mantovani, Diego**
11:30am	114059	Adsorption of Protein on an Au Surface Studied by All-Atom Atomistic Simulations **Aoran Wei**

S14: Drug Delivery		
10:00am	114093	A Blended Hydrogel Scaffold for Vascular Endothelial Growth Factor Delivery **Huaifa Zhang; Catelas, Isabelle**
10:15am	114152	pH-responsive, Antimicrobial-loaded Dressing for Recognition and Eradication of Bacterial Infection in Epidermal Wounds **Mirani, Bahram; Akbari, Mohsen**
10:30am	114143	Cytokine loaded layer-by-layer ultrathin matrices to deliver single dermal papilla cells for spot-by-spot Hair follicle regeneration **Yang, Rui-jia; Xing, Malcolm**
10:45am	114087	Microfluidic Platform for The Synthesis of Nano-sized Liposomes Using Hydrodynamic Flow Focusing for Drug Delivery **Amrani, Selya; Tabrizian, Maryam**
11:00am	114197	Effect of the Synthesis Process on the Physicochemical Properties of PLA-PEG Nanoparticles and their Drug Loading **Rode García , Teresita; Banquy Xavier**
11:15am	114127	Influence of linking arm hydrophilicity and binding sites on the bioactivity of surface-immobilized fibronectin **Vanslambrouck, Stéphanie; Laroche, Gaétan**

11:30am	114169	Development of a Thermoresponsive Homopolymer for Biomedical Applications **Brissenden, Amanda J; Amsden, Brian**
11:45am	114188	Immunomodulatory hydrogel microspheres as a sustained release sy for angiogenic growth factors **Tawagi, Eric; Santerre, Paul**

S15: Stem Cells in Biomaterials		
10:00am	114183	Dynamic Stimulation of Alginate-Based Hydrogels to Differentiate Adipose-Derived Stem Cells Towards Nucleus Pulposus Cells **Gad Sabbatier; Brian Amsden**
10:15am	114171	Defining the effect of endogenous tension on pancreatic differentiation of induced pluripotent stem cells **Tran, Raymond; Moraes, Christopher**
10:30am	114075	Cellular response to semi-ordered and biomimetic nanotubular surfaces **William Ho; Dr. Fabio Variola**
10:45am	114193	3D Printed Drug-eluting Scaffolds for Neural Tissue Engineering Using Human Pluripotent Stem Cells **Mirani, Bahram; Akbari, Mohsen**
11:00am	114091	Development of a dynamic culture pre-conditioning strategy for adipose-derived stem/stromal cells on decellularized adipose tissue bioscaffolds **Han, Tim Tian Y; Flynn, Lauren E**
11:15am	114214	hMSCs Stem Cell Niche Mimic Throught Peptide Micro & Nanostructuration **Laurence Padiolleau; Gaétan Laroche**
11:30am	114246	Mussel-inspired alginate gel promoting the osteogenic differentiation of mesenchymal stem cells and anti-infection **Rene Mbeleck; Malcolm Xing**
11:45pm	114138	Commercialization potential of electrospun scaffolds for the future of stem cells therapy **Nima Khadem Mohtaram; Stephanie M Willerth**

12:15-1:15pm Awards/Conference closing

LIST OF ABSTRACTS FOR POSTER PRESENTATION

Abstract no.	Abstract name
114264	Engineering a Vascularised Encapsulation Device for the Treatment of Type 1 Diabetes **Fernandez, Stephanie A.; Hoesli, Corinne A.**
114096	Preparation of a Small Intestinal Submucosa Modified Polypropylene Hybrid Mesh via a Mussel-inspired Polydopamine Coating for Pelvic Reconstruction **Liangpeng Ge**
114255	Engineering Vascularized Tissue Constructs with Sacrificial Thermoreversible Hydrogels using a Custom 3D Bioprinter and Angiogenesis-inducing Multipotent Stromal Cells (MSCs) **Fitzsimmons, Ross; Simmons, Craig**
114263	Customizing Lipopolymers for Efficient siRNA Delivery to Different Leukemia Cells **Ansari, Aysha S; Uludag, Hasan**
114228	Potential Use of Laser Processed Titanium, Coated with Electrospun Polycaprolactone Fibers to Modify Thermal Properties of Dental Implants **Amirkianoosh Kiani**
114153	A Novel Mussle-Inspired Elastic and Conductive Cryogel for Muscle Tissue Engineering **Leyu Wang; Xiaozhong Qiu**
114218	Surface Tension Guided Hanging-Drop: Producing Controllable 3D Spheroid of High-Passaged Human Dermal Papilla Cells and Forming Inductive Microtissues For Hair-follicle Regeneration **Bingcheng Liu; Malcolm Xing**
114179	Preparation and Characterization of Polymeric Scaffolds Containing Nano-Textured Eggshell Particles for Bone Regeneration **Calvert, Nicholas D.; Catelas, Isabelle**
114212	3D Bioprinting of Engineered Chitosan Hydrogel **Soroosh Derakhshanfar; Malcolm Xing**
114175	Nano-Hydroxyapatite Particle Functionalization Using Amino Acids **Comeau, Patricia A; Willett, Thomas**
114176	Polycaprolactone as biodegradable polymer for the fabrication and In vitro release studies of purmorphamine-loaded microspheres to engineer neural tissue **De la Vega Reyes, Laura; Willerth, Stephanie M**
114238	Recombinant human proteoglycan 4 releasing in situ cross-linking hyaluronic acid hydrogels for reducing post-surgical adhesions **Graeme Prosperi-Porta; Tannin A Schmidt**
114230	Influence of titanium surface roughness on osteoclast adhesion, spreading and actin ring formation **Abe, Yoshio; Dixon, S Jeff.**
114131	UNRAVELING THE RELATIONSHIP BEWTEEN POLYPLEX DIMENSIONS AND TRANSFECTION EFFECTIVENESS **Pezzoli, Daniele; Candiani, Gabriele**

114137	Investigating the response of human dermal and gingival fibroblasts to changes in substratum compliance: Implications for soft tissue biomaterials development. **Brooks, Sarah M.; Hamilton, Douglas W**
114261	An In Vitro Tear Replenishing Cornea Model: Drug Eluting Contact Lenses **Mohammadi, Saman; Gorbet, Maud**
114225	Light wood - lysozyme natural anti-infection material and its effects on wound healing **daijun zhou; ying wang**
114068	Development of an Injectable and Thermosensitive Chitosan Hydrogel for the Prevention of Post-surgical Abdominal Adhesions **Hui Eve; Lerouge Sophie**
114073	In vitro endothelial cell transfection using linear and branched poly(Î²-amino ester) nanoparticles **DiStasio, Nicholas; Tabrizian, Maryam**
114217	Adipose stem cell-laden injectable thermosensitive hydrogel reconstructing depressed defects in rats: filler and scaffold **Wang, Yitian; Xing, Malcolm**
114099	Engineering of Biomimetic Vascular Substitutes by a Combinatorial Approach **Boulanger, Marième; Hoesli, Corinne A.**
114167	Development of Bioactive Wound Dressing based on Oxidized Bacterial Cellulose **Gurgel, Niédja F. V; Rosa, Morsyleide de F**
114234	Study of Correlations between QCT and DXA Derived Femur Cross-Sectional Mechanical Properties **Huijuan Yang; Yunhua Luo**
114235	Regulating gingival and dermal fibroblast phenotype by nanometric and micrometric substratum topography **Tiedemann, Michael; Menant Tay, Larena**
114220	Rapid CRP detection using a paper microfluidic chip **Dong, Meili; Lin, Francis**
114245	Biosynthesized Cellulose for Use as Novel Drug Delivery System to Stimulate Brain Tissue Regeneration after Stroke **Stumpf, Taisa R.; Cao, Xudong**
114241	Adhesive Strength of Surgical Adhesives on Porcine Vocal Fold Tissue **Chen, Leixi Christina; Mongeau, Luc**
114102	Electrospun Polycaprolactone/Polyurethane Tubular Structures for Compliant Small-Diameter Vascular Grafts **Bouchet, Mélusine; Lerouge, Sophie**
114119	Bioprinting Neural Tissue **Michaela Thomas; Stephanie Willerth**
114196	Modification of Poly(methyl methacrylate) Surfaces with Azobenzene Groups as a Photoswitchable Surface **Clarke, Ashley E.; Wells, Laura A**.

114219	PKC-412 activates NF-kB pathway and stimulates HIV-1 expression in latently infected cells **Zhujun Ao; Yao Xiaojian**
114092	A Novel Photo-initiated Small Intestine Submucosa Hydrogel for 3D Cell Culture in Tissue Engineering **Gongbo Liu; Chuan Cao**
114124	Towards layer-by-layer manufacturing of engineered tissues **Ghaemi Roza; McFee, Matthew C.; Yadav, Vikramadytia G**
114224	Silver nanoparticles decorated eggshell membrane: processing, cytotoxicity assessment and optimization, antibacterial activity and wound healing **menglong liu; ying wang**
114203	Effect of Flash Sintering Temperature and Atmosphereon the Densification of Hydroxyapatite
114208	The Effect of Concentration of Carbon Nanotubes (CNTs) on the Viability of Human Vocal Fold Fibroblasts Encapsulated in Composite Chitosan Glycol-CNT Hydrogels **Hossein Ravanbakhsh; Neda Latifi; Luc G. Mongeau**
114233	Assessment of the Dentin Permeability for Targeted Drug Delivery using SPIONs. **Christopher Ward; Rodrigo França**
114156	Injectable Composite Chitosan Sponge for Cellular Encapsulation in Bone Repair Applications **Kaushar Jahan; Maryam Tabrizian**
114223	Synthesis and anticoagulant activity of PCL-b-PHFBA semifluoro polymer electrospun nanofiber mesh **ying wang; malcolm xing**
114229	Evaluation of an early caries detection system based on integrated OCT and polarized Raman spectroscopy **KO, Alex Chun-te**
114084	Viability enhancement of hydrogel encapsulated mesenchymal stem cells by a short pharmacological treatment. **Touani, K. Francesco; Lerouge, Sophie**
114232	Design Optimization and Experimental Testing of a Customized Surface-Guided Total Knee Replacement **Pejhan, Shabnam; Wyss, Urs**
114114	Topographic Quantification and Comparison of Titanium Implant and Osteoclast-Resorbed Human Bone Surfaces **Ay, Birol; Davies, John E.**
114154	Non-Adhesive Wound Dressings for Enhanced Burn Wound Regeneration **Kimmins, Kenneth M; Hatton, Benjamin D.**