

INNOVATIONS IN BIOMEDICAL MATERIALS 2012

PRELIMINARY PROGRAM

Tuesday, September 11, 2012

Plenary Session I

8:00 AM-9:50 AM

Room: Capital E-G

8:00 AM

(BIO-091-2012) Bio-inspired Materials for Health and Defense (Invited Speaker)

Allan Russell, Carnegie Mellon University, USA

8:45 AM

(BIO-001-2012) Radioactive Glass Microspheres for Medical Applications (Invited Speaker)

Delbert E. Day*, Thomas E. Day, MO-SCI Corp, USA

9:30 AM

Break

Metallic Implants and Coatings I

9:50 AM-11:50 AM

Room: Capital D

Session Chair(s): Peter Ullrich

9:50 AM

(BIO-002-2012) Selection of Biomaterials for Spinal Interbody Fusion Implants - Consideration of Design, Endplate Bonding, and Modulus vs. Engineered Modulus (Invited Speaker)

Charanpreet Bagga*, Prosidyan, Inc., USA; Bryan W. Cunningham, Orthopaedic Spinal Research Laboratory, USA; Peter F. Ullrich, Titan Spine, LLC, USA; William Kelly, Mechanical Solutions, Inc., USA; Michelle Gallagher, Jennifer M. Schneider, Titan Spine, LLC, USA

10:20 AM

(BIO-003-2012) Titanium-boron alloys for potential orthopedic applications - microstructure, mechanical behavior and environmental stability (Invited Speaker)

Vilupanur Ravi*, Steve Alas, California State Polytechnic University, Pomona, USA

10:50 AM

(BIO-004-2012) Tantalum Diffusion Coating for Increasing the Biocompatibility of Conventional Metal Implant Alloys

Jacob J. Stiglich*, Jerry W. Brockmeyer, Brian E. Williams, Ultramet, USA

11:10 AM

(BIO-005-2012) Biomimetic calcium phosphate formation on titanium surfaces modified with organophosphonate molecules.

Alda Yadira Sánchez Treviño*, Miguel A. Rodríguez Valverde, Miguel A. Cabrerizo Vílchez, University of Granada, Spain

11:30 AM

(BIO-006-2012) Single Step Synthesis and Characterization of Hydroxyapatite Deposited Microporous Titania Layer on Cp-Titanium by Micro Arc Oxidation

Faiz Muhaffel*, Huseyin Cimenoglu, Istanbul Technical University, Turkey

Imaging and Treatment I

9:50 AM-11:50 AM

Room: Capital A/B

Session Chair(s): Andrew Larson and Riad Salem

9:50 AM

(BIO-007-2012) Understanding Radioactive (90Y) Ceramic Microsphere Therapy (Radioembolization) in Human Liver Cancers (Invited Speaker)

Andrew Kennedy*, Cancer Centers of North Carolina, USA

10:20 AM

(BIO-008-2012) MRI of SPIO-Labeled Radioembolization Microspheres

Andrew Christian Larson*, Northwestern University, USA

10:40 AM

(BIO-009-2012) X-ray imaging enhancement with glass ceramic plates (Invited Speaker)

Jacqueline Johnson, Sharon Gray, University of Tennessee Space Institute, USA; Christian Passlick, Fraunhofer Institute, Germany; Carlos Alvarez, Northwestern University, USA; Stefan Schweizer, South Westphalia University of Applied Sciences, Germany; Amanda Petford-Long, Northwestern University, USA; Lee Leonard*, University of Tennessee Space Institute, USA

11:10 AM

(BIO-010-2012) Preparation of Strontium Phosphate Microspheres For On-Site Delivery of Yttrium-90

Yiyong He*, Mo-Sci Corporation, USA

11:30 AM

(BIO-011-2012) Examining Brain Edema Through Brain Impedance Analysis

Shabana Urooj*, Gautam Buddha University, India; A. Q. Ansari, Jamia Millia Islamia, India; Ashok K. Salhan, Delhi Research & Development Organization, India; A. Lay Eukakille, University of Salento, Italy

Sensors I

9:50 AM-11:50 AM

Room: Capital C

Session Chair(s): Randy Avent

9:50 AM

(BIO-012-2012) Foreign Body Response to Implanted Biomaterials in Diabetics (Invited Speaker)

Bruce Klitzman*, Nga L. Brown, Duke University Medical Center, USA

10:20 AM

(BIO-013-2012) Electrospun fibrous biomedical nanomaterials for nanomedicine applications (Invited Speaker)

Pelagia-Irene (Perena) Gouma*, SUNY at Stony Brook, USA

10:50 AM

(BIO-014-2012) Magnetic Oxide Material Optimized for 13.56 MHz Medical RFID Applications

David Cruickshank*, Michael David Hill, Trans-Tech Inc., USA

11:10 AM

(BIO-015-2012) Microfabricated Sensors for In Vivo Neurotransmitter Measurements

Gregory S. McCarty*, NCSU, USA

11:30 AM

(BIO-016-2012) Synthesis and applications of novel Nickel hexacyanoferrate-Gold Nanocomposite Biomaterial in electrochemical sensor designs

Prem C. Pandey*, Ashish Pandey, Institute of Technology, Banaras Hindu University, India

Plenary Session II

11:50 AM-1:25 PM

Room: Capital E-G

11:50 AM

Lunch

12:40 PM

(BIO-017-2012) Radioembolization with Yttrium 90 Microspheres (Invited Speaker)

Riad Salem*, Northwestern University, USA

Metallic Implants and Coatings II

1:30 PM-3:40 PM

Room: Capital D

Session Chair(s): Peter Ullrich

1:30 PM

(BIO-018-2012) Enhancing the Wear Resistance and Osseo-integration of Next Generation Beta Titanium Alloys For Orthopedic Implants (Invited Speaker)

Pavani Kami, Soumya Nag*, Sanket N. Dahotre, Sameer R. Paital, Thomas W. Scharf, Narendra D. Dahotre, Rajarshi Banerjee, University of North Texas, USA

2:00 PM

(BIO-019-2012) Effect of Surface Treatment of Titanium Alloy on Maturation of Osteoblasts In Vitro

David C. Greenspan*, Spinode Consulting, USA; Jennifer M. Schneider, Mark E. Berg, Titan Spine, USA; Barbara D. Boyan, Zvi Schwartz, Rene Olivares-Navarrete, Rolando A. Gittens, Georgia Institute of Technology, USA; Joshua J. Stapleton, Timothy B. Tighe, Pennsylvania State University, USA

2:20 PM

(BIO-020-2012) Novel bioactive Ti metal and its alloy enriched with calcium ions on their surfaces by simple chemical and heat treatments

Seiji Yamaguchi*, Takashi Kizuki, Shekher Nath, Hiroaki Takadama, Tomiharu Matsushita, Chubu University, Japan; Takashi Nakamura, National Hospital Organization, Japan; Tadashi Kokubo, Chubu University, Japan

2:40 PM

(BIO-021-2012) Development of bioactive coatings of HA-G-Ti composites for in vivo studies

Ramadoss Roop Kumar*, Surya R. Chockalingam, BITS Pilani, Dubai Campus, United Arab Emirates

3:00 PM

(BIO-022-2012) Biocompatibility, Corrosion and Mechanical Studies of Surface Treated Nitinol Alloys

Puneet Gill*, Norman Munroe, Florida International University, USA; Amit Datye, The University of Tennessee, USA; Waseem Haider, State University of New York, USA

3:20 PM

Break

Imaging and Treatment II

1:30 PM-2:20 PM

Room: Capital A/B

Session Chair(s): Andrew Larson and Riad Salem

1:30 PM

(BIO-023-2012) Dartmouth Center for Cancer Nanotechnology Excellence (Invited Speaker)

Ian Baker*, Dartmouth College, USA

2:00 PM

(BIO-024-2012) A Thermally Responsive Curcumin Conjugate for Local Antagonism of Inflammation in Intervertebral Disc Pathology

S. Michael Sinclair*, David Gooden, Jayanta Bhattacharyya, Jonathan McDaniel, Xin Chen, Eric J. Toone, Ashutosh Chilkoti, Lori A. Setton, Duke University, USA

Sensors II

2:20 PM-3:40 PM

Room: Capital A/B

Session Chair(s): Randy Avent

2:20 PM

(BIO-025-2012) Tuning nanoparticle-DNA recognition with ligand chemistry: molecular modeling (Invited Speaker)

Abhishek Singh, Nan Li, Yaroslava G. Yingling*, North Carolina State University, USA

2:50 PM

(BIO-026-2012) Biomaterial derived from nanostructured Prussian blue gold and palladium and their application in L- cysteine sensing (Invited Speaker)

Prem C. Pandey*, Ashish Pandey, Institute of Technology, Banaras Hindu University, India

3:20 PM

Break

Blood Vessels, Nerve Guides and Hemostasis

1:30 PM-3:20 PM

Room: Capital C

Session Chair(s): Amy Harkins

1:30 PM

(BIO-027-2012) Creating waved and aligned nanofiber composites with biomimetic microstructures and mechanical compliance to natural blood vessels (Invited Speaker)

Vince Beachley, Xuejun Wen*, Clemson University, USA

2:00 PM

(BIO-028-2012) Effects of Bioactive Glass Composites on Neuronal Cell Behavior for Tissue Engineering Applications

Laura M. Marquardt, Washington University in St. Louis, USA; Delbert Day, Missouri University of Science and Technology, USA; Shelly Sakiyama-Elbert, Washington University in St. Louis, USA; Amy B. Harkins*, Saint Louis University, USA

2:20 PM

(BIO-029-2012) Integrin Mediated Platelet Adhesion to a Hemostatic Keratin Biomaterial

Maria Bahawdory*, Mark Van Dyke, Wake Forest University School of Medicine, USA

2:40 PM

(BIO-030-2012) The Relationship between Basement Membrane Development of Cardiomyocytes and Cell-to-Cell Crosstalk Reestablishment in Microwells

Huaxiao Yang*, Honghai Liu, Zhonghai Wang, Clemson University, USA; Thomas K. Borg, Medical University of South Carolina, USA; Bruce Z. Gao, Clemson University, USA

3:00 PM

Break

Metallic Implants and Coatings III

3:40 PM-5:40 PM

Room: Capital D

Session Chair(s): Peter Ullrich

3:40 PM

(BIO-031-2012) Growing Integration Layer [GIL] Method: Coating of Bioactive Ceramic Layers on Metallic Materials in Solution without Firing Processes (Invited Speaker)

Masahiro Yoshimura*, National Cheng Kung University, Taiwan; Nobuhiro Matsushita, Tokyo Institute of Technology, Japan

4:10 PM

(BIO-032-2012) Development of Magnesium Alloys as Biodegradable Orthopedic Materials (Invited Speaker)

Zhigang Xu*, North Carolina A&T State University, USA

4:40 PM

(BIO-033-2012) Structure and Biocompatibility Analysis of Sol-Gel Prepared Niobium and Titanium Oxide with Temperature

Dimple Pradhan*, Anthony W. Wren, Scott T. Mixture, Nathan P. Mellott, Alfred University, USA

5:00 PM

(BIO-034-2012) Residual Stress in Ceramic Coated Biocompatible AZ31 Magnesium Alloys

Jing Zhang*, Indiana University - Purdue University Indianapolis, USA; Yanhong Gu, University of Alaska Fairbanks, USA; Yuanjun Guo, Chengyun Ning, South China University of Technology, China

5:20 PM

(BIO-035-2012) Yttrium doped Hydroxylapatite Coating and Antibiotic Duplex Coating on Titanium with Electrostatic Spray Deposition Method

Ozkan Gokcekaya*, Celaletdin Ergun, Istanbul Technical University, Turkey

Uses of Bioactive Glass in New Treatments

3:40 PM-5:50 PM

Room: Capital A/B

Session Chair(s): Charanpreet Bagga

3:40 PM

(BIO-036-2012) Use of Bioactive Glass in Bone Graft Substitute Materials - The New Trend in Bone Repair (Invited Speaker)

Hyun Bae, Cedars Sinai Hospital, USA; Charanpreet Bagga*, Prosidyan, Inc., USA

4:10 PM

(BIO-037-2012) Circular-Dichroism Spectroscopy of Albumin Adsorbed on Calcium and Strontium Phosphate Microspheres

Kenan Fears*, Daniel Burden, Corey Love, U.S. Naval Research Lab, USA; Delbert Day, Missouri University of Science and Technology, USA; Thomas Clark, U.S. Naval Research Lab, USA

4:30 PM

(BIO-038-2012) Optimization of Experimental Composite Nerve Guidance Conduits: Mechanical Properties and Cytocompatibility using Cultured Schwann Cells

Xiaofang Zhang*, Sharon Kehoe, Dalhousie University, Canada; Lu Gan, Fang Wu, SiChuan University, China; Daniel Boyd, Dalhousie University, Canada

4:50 PM

(BIO-039-2012) Antimicrobial Properties of Silver Coated Bioactive Glass Particles for Wound Healing Applications

Pegah Hassanzadeh*, Anthony W. Wren, Mark R. Towler, Alfred University, USA

5:10 PM

(BIO-040-2012) Examining the Thermal Characteristics and Cytocompatibility of La-doped Zinc-Silicate Embolic Agents.

Sharon Kehoe*, Daniel Boyd, Dalhousie University, PO Box 15000, Canada

5:30 PM

(BIO-041-2012) Novel Carbon Nanotube Reinforced Bioglass Composites for Orthopedic Applications

Jing Zhang*, Indiana University - Purdue University Indianapolis, USA; Chengchang Jia, Zhizhong Jia, University of Science and Technology Beijing, China

Three Dimensional Scaffolds for Tissue Regeneration I

3:20 PM-5:30 PM

Room: Capital C

Session Chair(s): Hyun Bae

3:20 PM

(BIO-042-2012) Bioinspired ceramic scaffolds for bone replacement (Invited Speaker)

Joanna McKittrick*, Michael M. Porter, UC San Diego, USA; Po-Yu Chen, National Tsing Hua University, Taiwan; Marc A. Meyers, UC San Diego, USA

3:50 PM

(BIO-043-2012) Nanofibrous scaffolds for bone healing (Invited Speaker)

Xiaojun Yu*, Stevens Institute of Technology, USA

4:20 PM

(BIO-044-2012) Performance of silicate TAMP bioscaffolds (Invited Speaker)

Tia Kowal, Jutta Marzillier, Matthias M. Falk*, Lehigh University, USA; Manal Saad, Mona Marei, Alexandria University, Egypt; Ukrit Thamma, Christine LaPorte, Himanshu Jain, Lehigh University, USA

4:50 PM

(BIO-045-2012) Evaluation of bioactive glass scaffolds made by selective laser sintering

Mariano Velez*, Mo-Sci Corporation, USA

5:10 PM

(BIO-046-2012) Direct building of 3D hydroxyapatite microchannel structure for nutrients delivery

David Salamon*, Brno University of Technology, Czech Republic; Sandra Teixeira, University of Twente, Netherlands

Poster Session

5:45 PM-7:15 PM

(BIO-P001-2012) Minimal Effect on Mechanical Strength with the Addition of Cisplatin to Commercially Available Bone Cements

Jill E. Meyer*, University of Wisconsin - Milwaukee, USA; Kevin MacDonald, Virginia Mason Medical Center, USA

(BIO-P002-2012) Characterization of dense and porous titanium with nanotextured surface induced by chemical oxidation

Alexandre Antunes Ribeiro*, Roseli M Balestra, Fabiana Magalhães T. Mendes, National Institute of Technology, Brazil; Luiz C. Pereira, Federal University of Rio de Janeiro, Brazil; Marize V. Oliveira, National Institute of Technology, Brazil

(BIO-P003-2012) Effect of post heat treatment on the mechanical and tribological properties of TiO₂ enriched with Ca and P obtained by micro arc oxidation

Carlos Laurindo*, Ricardo D. Torres, Paulo Soares, Pontificia Universidade Católica do Paraná, Brazil

(BIO-P004-2012) Enhancement of Titanium Surface Bioactivity by Treatment with a Highly Bioactive Glass

Clever Ricardo Chinaglia*, Oscar Peitl, Federal University of Sao Carlos, Brazil; Paulo T Oliveira, Ribeirao Preto College of Dentistry, Sao Paulo State University, Brazil; Larissa C. Sanches, Edgar D. Zanotto, Federal University of Sao Carlos, Brazil

(BIO-P005-2012) Titanium hydroxilation - Hydroxide formation on titanium alloy surfaces by anodic oxidation

Martin Sebastian Walter*, Matthias J. Frank, University of Oslo, Norway; Manuel Gomez-Florit, Marta Monjo, University of Balearic Islands, Spain; Martin F. Sunding, Ståle P. Lyngstadaas, Håvard J. Haugen, University of Oslo, Norway

(BIO-P006-2012) Hydride layer created by hot acid etching suppresses hydride formation by cathodic reduction on titanium based implant surfaces

Matthias Johannes Frank*, Martin S. Walter, S. Petter Lyngstadaas, Håvard J. Haugen, University of Oslo, Norway

(BIO-P007-2012) Bioactive coatings on titanium obtained by the combination of micro-arc oxidation and electrophoretic deposition

Paulo Soares*, Carlos Augusto H. Laurindo, Ricardo D. Torres, Pontificia Universidade Catolica do Parana, Brazil

(BIO-P008-2012) Effects of Crosslink ratio on photocrosslinkable P(AM-AA) Gels for Drug Delivery

Jing Gu*, Yun Lu, Satya Shivkumar, Worcester Polytechnic Institute, USA

(BIO-P009-2012) Effects of the NaOH treatment on the waste cotton fiber surface for Green Composites

Mehmet Safa Bodur*, Mustafa Bakkal, Istanbul Technical University, Turkey

(BIO-P010-2012) Mechanochemical synthesis of copper doped nanostructured fluorapatite

Raheleh Nikonammofrad*, Seyed Khatiboleslam Sadrnezhad, Jalil Vahdati Kahki, Sharif University of Technology, Islamic Republic of Iran

(BIO-P011-2012) Preparation and properties of magnetic ZnFe₂O₄-chitosan core-shell nanoparticles

R. Reisi Shahraki, Seyed Ali Seyyed Ebrahimi*, M. Ebrahimi, University of Tehran, Islamic Republic of Iran

(BIO-P012-2012) The potential use of innovative hemostatic dressings as a supportive cancer care

factor in parenchymatous organs surgery - preliminary report

Maciej Stanislaw Nowacki*, Arkadiusz Jundzill, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Torun., Poland; Tomasz Kowalczyk, IPPT, Polish Academy of Sciences, Warsaw., Poland; Tomasz Drewa, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Torun., Poland

(BIO-P013-2012) Controlled Engineering of Hydrogel Features in a Hyaluronic acid (HA)-poly(ethylene glycol) (PEG) for Intervertebral Disc Tissue Engineering

Claire Gayoung Jeong*, Aubrey T. Francisco, Zhenbin Niu, Stephen L. Craig, Lori A. Setton, Duke University, USA

(BIO-P014-2012) Highly porous TiO₂ scaffolds for bone repair

Hanna Tiainen*, Johan C. Wohlfahrt, Anders Verket, Ståle P. Lyngstadaas, Håvard J. Haugen, University of Oslo, Norway

(BIO-P015-2012) Bioactivity of Bioceramic Bone Scaffolds Fabricated at Two Sintering Temperatures

Juan Vivanco*, Ameet Aiyangar, Caitlyn Collins, The University of Wisconsin Madison, USA; Aldo Araneda, Universidad Tecnica Federico Santa Maria, Chile; Heidi L. Ploeg, The University of Wisconsin Madison, USA

(BIO-P016-2012) Effect Of Electrospun Scaffolds On Osteogenic Differentiation Of Palatal Periosteum And Umbilical Cord-Derived Mesenchymal Stem Cells

Montserrat Caballero*, Andrew K. Pappa, Matthew D. Skancke, John A. van Aalst, University of North Carolina, USA

(BIO-P017-2012) Finite element modeling and mechanical property assessment of polycaprolactone-hydroxyapatite composite scaffolds fabricated by selective laser sintering

Shaun Eshraghi*, Suman Das, Georgia Institute of

Technology, USA

(BIO-P018-2012) Large area maskless photopolymerization of hydrogels for cartilage tissue engineering

Shaun Eshraghi*, Suman Das, Georgia Institute of Technology, USA

(BIO-P019-2012) Effect of bioactive borate glass fiber scaffolds on wound healing in diabetic mice

Lin Chen*, University of Illinois, USA; Steve B. Jung, Ted Day, MO-SCI Corporation, USA; Mateusz Krol, Luisa A. DiPietro, University of Illinois, USA

(BIO-P020-2012) New Bioactive Glass with Low Devitrifying Tendency

Marina Trevelin Souza*, Oscar Peitl, Federal University of São Carlos, Brazil; Paulo T. Oliveira, University of São Paulo, Brazil; Edgar D. Zanotto, Federal University of São Carlos, Brazil

(BIO-P021-2012) Treatment of Chronic Ulcers with Bioactive Borate Glass Nanofibers

Steven Jung, Ted Day*, Mo-Sci Corporation, USA; William Stoecker, Peggy Taylor, Phelps County Regional Medical Center, USA; Delbert Day, Missouri University of Science and Technology, USA

(BIO-P022-2012) Unique Physical Properties of Synthetic Antimicrobial Block Copolypeptides Designed for Wound Infections

Jarrod Hanson*, Ekaterina Tkatchouk, Evan Schauer, Kevin R. Ogilby, Janet Chow, Diego Benitez, Michael Bevilacqua, Amicrobe, Inc., USA

Wednesday, September 12, 2012

Plenary Session III

8:30 AM-9:45 AM

Room: Capital E-G

8:30 AM

(BIO-047-2012) Bioactive Glasses: New Approaches for Tissue Repair, Regeneration and Prevention (Invited Speaker)

Larry Hench*, University of Florida, Ft. Myers, USA

9:15 AM

Break

Metallic Implants and Coatings IV

9:45 AM-11:15 AM

Room: Capital D

Session Chair(s): Peter Ullrich

9:45 AM

(BIO-048-2012) BioMEMS & Biocompatible Coatings for Biomedical Applications (Invited Speaker)

Varshni Singh*, Q. Nguyen, Louisiana State Univ., USA; P. George, E. O. Daigle, CAP Technologies, LLC, USA

10:15 AM

(BIO-049-2012) Developing micro- and nano-patterning technique for osseointegrative titanium implants

Terje Sjöström, Laura E. McNamara, University of Bristol, United Kingdom; Matthew J. Dalby, University of Glasgow, United Kingdom; Bo Su*, University of Bristol, United Kingdom

10:35 AM

(BIO-050-2012) Bioactive Ti metal and its alloys formed with positively charged TiO₂ surface layer

Tadashi Kokubo*, Seiji Yamaguchi, Hiroaki Takadama, Tomiharu Matsushita, Chubu University, Japan; Takashi Nakamura, National

Hospital Organization, Japan

10:55 AM

(BIO-051-2012) Biocompatible RF-magnetron sputter deposited CaP-based coatings on the surface of technically pure titanium

Roman Anatolievich Surmenev*, Maria Surmeneva, Vladimir Pichugin, Anna Ivanova, Irina Grubova, Igor Khlusov, Tomsk Polytechnic University, Russian Federation; Anna Kovtun, Oleg Prymak, Matthias Epple, University of Duisburg-Essen, Germany

Composites I

9:45 AM-11:55 AM

Room: Capital A/B

Session Chair(s): Erik Erbe

9:45 AM

(BIO-052-2012) Biomaterial Composites: Theory and Medical Applications (Invited Speaker)

Erik M. Erbe*, Nuvasive, Inc, USA

10:15 AM

(BIO-053-2012) Plasma and nanofiber-enhanced biomedical textiles for health and protection (Invited Speaker)

Quan Shi, Narendiran Vitthuli, Joshua Nowak, Rupesh Nawalakhe, Michael Sieber, Mohamed Bourham, Xiangwu Zhang, NC State Univ, USA; Marian McCord*, NC State Univ and UNC, USA

10:45 AM

(BIO-054-2012) Hybrid Silicone for Finger Joint Reconstruction (Invited Speaker)

Devesh Misra*, University of Louisiana Lafayette, USA

11:15 AM

(BIO-055-2012) An Overview of Silicon Nitride as a Novel Biomaterial

Bryan McEntire*, Alan Lakshminarayanan, Amedica Corporation, USA; B. Sonny Bal, University of Missouri, USA; Thomas J. Webster, Brown University, USA

11:35 AM

(BIO-056-2012) PBAT Based Nanocomposites for Tissue Engineering and Industrial Applications
Amaliya Rasyida*, Kikku Fukushima, Meng Hsiu-Wu, National Taiwan University of Science and Technology, Taiwan; Sergio Bocchini, Politecnico di Torino, Italy; Ming Chien-Yang, National Taiwan University of Science and Technology, Taiwan

Three Dimensional Scaffolds for Tissue Regeneration II

9:45 AM-11:55 AM
Room: Capital C
Session Chair(s): Hyun Bae

9:45 AM
(BIO-057-2012) Short Laminin Peptide for Improved Neural Progenitor Cell Growth (Invited Speaker)
Xiaowei Li, Ning Zhang, Xuejun Wen*, Clemson University, USA

10:15 AM
(BIO-058-2012) Electrospun Vascular Scaffold for Engineering Fully Cellularized Small Diameter Blood Vessel (Invited Speaker)
Sang Jin Lee*, James J. Yoo, Anthony Atala, Wake Forest School of Medicine, USA

10:45 AM
(BIO-059-2012) Cell instructive injectable materials for bone regeneration (Invited Speaker)
Lakshmi Nair*, University of Connecticut Health Center, USA

11:15 AM
(BIO-060-2012) Novel microfabrication of 3D composite lattice scaffold for bone tissue engineering
Danish Nadeem, Bo Su*, University of Bristol, United Kingdom

11:35 AM
(BIO-061-2012) STEP based Micro/Nanofiber

Aligned Networks for Tissue Engineering (Invited Speaker)

Amrinder Nain*, Virginia Tech, USA

Plenary Session IV

11:45 AM-1:25 PM
Room: Capital E-G

11:45 AM
Lunch

12:40 PM
(BIO-062-2012) Pedicle Screw Electrical Resistance: Hydroxyapatite Coated Versus Non-Coated (Invited Speaker)
Hyun Bae*, Spine Institute, USA

Commercialization I

1:30 PM-3:40 PM
Room: Capital D
Session Chair(s): Markus Reiterer

1:30 PM
(BIO-063-2012) Requirements for Bioactive Bone Implants from a Medical Device Company's Perspective (Invited Speaker)
Markus Reiterer*, Jeff Rouleau, Medtronic, Inc., USA

2:00 PM
(BIO-089-2012) Medical Device Commercialization: Lessons Learned from a First-timer (Invited Speaker)
Peter Pattison*, Nordion, USA

2:30 PM
Dale Mitchell, Captiva Spine

3:00 PM
(BIO-064-2012) Commercialization Paths for Disruptive Technologies - When to Start a New Company
Ted Day*, Mo-Sci Corporation, USA

Composites II

1:30 PM-3:40 PM
Room: Capital A/B
Session Chair(s): Erik Erbe

1:30 PM

(BIO-065-2012) Nanoscale heterostructures for selective chemical and biological sensing, bioanalysis, and delivery (Invited Speaker)

Nitin Chopra*, The University of Alabama, USA

2:00 PM

(BIO-066-2012) Designing Bacterial Cellulose Scaffolds for Tissue Engineering of Stem Cells (Invited Speaker)

Pelagie Favi, Madhu Dhar, Corey Ehinger, Nancy Neilsen, Roberto Benson*, University of Tennessee - Knoxville, USA

2:30 PM

(BIO-067-2012) Nature-inspired Composite Design and Manufacturing (Invited Speaker)

Xiaodong Li*, University of South Carolina, USA

3:00 PM

(BIO-068-2012) Influence of Anodization on Corrosion Resistance, Ion Leaching and Wettability of Biodegradable Magnesium Metal Matrix Composites

Puneet Gill*, Norman Munroe, Florida International University, USA; Nadendla Hari-Babu, Brunel University, United Kingdom

Three Dimensional Scaffolds for Tissue Regeneration III

1:30 PM-3:40 PM
Room: Capital C
Session Chair(s): Hyun Bae

1:30 PM

(BIO-069-2012) The Use of Keratin Biomaterials to

Enhance Mesenchymal Stem Cell Osteogenesis and Bone Regeneration (Invited Speaker)

Roche de Guzman, Justin Saul, Mary Ellenburg, Michelle Merrill, Heather Coan, Thomas Smith, Mark Van Dyke*, Wake Forest University School of Medicine, USA

2:00 PM

(BIO-070-2012) Engineering Complex Biomaterials Scaffolds for Connective Tissue Regeneration (Invited Speaker)

Satyavrata Samavedi, Patrick Thayer, Abby Whittington, Aaron S. Goldstein*, Virginia Tech, USA

2:30 PM

(BIO-071-2012) 3-D Scaffolds for Organ Bioengineering (Invited Speaker)

Shay Soker*, Pedro Baptista, Giuseppe Orlando, James Yoo, Anthony Atala, Wake Forest University School of Medicine, USA

3:00 PM

(BIO-072-2012) Parametric study for fabrication of PLLA electrospun scaffolds for tissue engineering by means of response surface analysis

SeyedRasoul Seyedmahmoud*, University of Rome Tor Vergata, Italy; Pamela Mozetic, Universita campus Bio-medico di Roma, Italy; Enrico Traversa, Silvia Licocchia, University of Rome Tor Vergata, Italy

3:20 PM

Break

Commercialization II

3:40 PM-5:00 PM
Room: Capital D
Session Chair(s): Markus Reiterer

3:40 PM

(BIO-073-2012) The system Y-TZP and its porcelain (Invited Speaker)

Michael Jochen Tholey*, VITA Zahnfabrik, Germany

4:10 PM

(BIO-090-2012) Stereolithography applied to

ceramic: An innovative shaping technique to build ceramic prosthesis for the repair of large craniofacial bone defects (Invited Speaker)

J.B. Lafon*, 3D Ceram, USA

4:40 PM

(BIO-074-2012) Navigating FDA Expectations for a new PMMA Bone Cement Formulation

Suzanne Goodman*, Aptiv Solutions, USA

Bone Cements

3:40 PM-5:40 PM

Room: Capital A/B

Session Chair(s): Gregory Pomrink

3:40 PM

(BIO-075-2012) Bioactive Glass Applications, Mechanism and Clinical Results (Invited Speaker)

Gregory J. Pomrink*, NovaBone Products LLC, USA

4:10 PM

(BIO-076-2012) Development and Applications of Sol-Gel Calcium Silicate-Based Bone Cements (Invited Speaker)

Shinn-Jyh Ding*, Chung Shan Medical University, Taiwan

4:40 PM

(BIO-077-2012) Dental Cements- Traditional and Bioactive

C. Primus*, Primus Consulting, USA

5:00 PM

(BIO-078-2012) Performance of Bone Void Fillers Manufactured Using A 3D Rapid Prototyping Platform

Sunil Saini*, Integra, USA

5:20 PM

(BIO-079-2012) Characterization of Elution of Cisplatin from Commercially Available Bone Cements

Jill E. Meyer*, University of Wisconsin - Milwaukee,

USA; Kevin MacDonald, Virginia Mason Medical Center, USA

Wound and Burn Treatment

3:40 PM-4:50 PM

Room: Capital C

Session Chair(s): Luisa DiPietro and Lin Chen

3:40 PM

(BIO-080-2012) Exhaustion of Muscle Progenitor Cells during Aging & Disease: Implication for Stem Cell Therapy (Invited Speaker)

Mitra Lavasani, Aiping Lu, Laura Niedernhofer, Paul D. Robbins, Johnny Huard*, University of Pittsburgh, USA

4:10 PM

(BIO-081-2012) Wound healing research: Past, present, and future

Luisa Ann DiPietro*, University of Illinois at Chicago, USA

4:30 PM

(BIO-082-2012) Chronic Non-Healing Wounds Treated with Bioactive Borate Glass Nanofibers

Steven B. Jung*, MO-SCI Corporation, USA; William V. Stoecker, Peggie Taylor, Phelps County Regional Medical Center, USA

Three Dimensional Scaffolds for Tissue Regeneration IV

5:10 PM-5:50 PM

Room: Capital C

Session Chair(s): Hyun Bae

5:10 PM

(BIO-083-2012) Biodegradable Polymer-Hydroxyapatite Composite Scaffolds: Fabrication and Properties

Mohammad Mujahid*, Arsalan Ahmed, National

University of Sciences and Technology, Pakistan

5:30 PM

(BIO-084-2012) The influence of pore geometry on failure mechanism of rapid prototyped scaffolds

Soodeh Amirkhani*, Reza Bagheri, Sharif University of Technology, Islamic Republic of Iran

Thursday, September 13, 2012
Innovations in Biomedical
Materials Panel
Discussion

9:15 AM-10:30 AM
Room: Capital E-G

9:15 AM

The Innovations in Biomaterials Panel Discussion will explore what cells need to generate bone in the interbody space and include: (1) data on old versus new surface and the biological activity it generates; and (2) bench data and FEA analysis on engineered versus materials modulus as it relates to bone grafts stress sharing within a cage. Other issues will also be explored.

Panelists:

Peter Ullrich, Titan Spine
Hyan Bae, Spine Institute
David Greenspan, Spinode Consulting

10:15 AM
Break

Tutorial Session I

10:30 AM-12:00 PM
Room: Capital D

10:30 AM
(BIO-085-2012) Licensing Technology from a Public University, What in the World Were You Thinking? (Invited Speaker)
Keith D. Strassner*, Missouri University of Science and Technology, USA

Tutorial Session II

10:30 AM-12:00 PM
Room: Capital A/B

10:30 AM
(BIO-086-2012) CE Marking of Medical Devices (Invited Speaker)
Matthew D. O'Donnell*, BSi Group, United Kingdom

Tutorial Session III

10:30 AM-12:00 PM
Room: Capital C

10:30 AM
(BIO-087-2012) Materials Data Impact on Device Design (Invited Speaker)
Gary Mushock*, ASM International, USA

11:15 AM
(BIO-088-2012) Systematic materials selection - How to optimize product performance while lowering risk (Invited Speaker)
Kristin Roenigk*, Granta Design, USA