

Concurrent Oral Abstract Presentations Session I • Thursday, April 19, 2007 9:45 pm - 11:45 am

<p><b>Surface Modification and Characterization of Biomaterials (General Session)</b>                  Sheraton Center Moderators – Erika Johnston, PhD, Jeffrey Schwartz, PhD</p>	<p><b>Advances in Drug Delivery I (General Session)</b>                  Sheraton 2                  Moderators – Mark Byrne, PhD, Liisa Kuhn, PhD</p>	<p><b>Biomaterial-based Bridges for Neural Regeneration (Symposium)</b>                  Sheraton 3                  Moderators – Xuejun Wen, MD, PhD, Ken Webb, PhD</p>	<p><b>Polysaccharide-Based Biomaterials I (General Session)</b>                  Chicago 8                  Moderators – Jason A. Burdick, PhD, Kristyn S. Masters, PhD</p>	<p><b>Tissue Engineered Products for Clinical Applications I (General Session)</b>                  Chicago 9                  Moderators – Moon Suk Kim, PhD, Antonios G. Mikos, PhD</p>	<p><b>Orthopedic SIG: Total Joint (General Session)</b>                  Chicago 10                  Moderators – Timmie L.D. Topoleski, Warren O. Haggard, PhD</p>
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9:45 am	<p><b>1 Solution Piezoresponse Force Microscopy of Lysozyme and Insulin Amyloid Fibrils</b>                  G. L. Thompson, III<sup>1</sup>, B. J. Rodriguez<sup>2</sup>, S. V. Kalinin<sup>3</sup>, A. A. Vertegel<sup>1</sup>;  <sup>1</sup>Clemson University, Clemson, SC, 2Oak Ridge National Laboratory, Oak Ridge, TN.</p>	<p><b>9 A Novel Family of Polymeric Carriers for Intracellular Drug Delivery</b>                  P. S. Stayton, A. S. Hoffman;                  University of Washington, Seattle, WA.</p>	<p><b>17 The reality of stem cell grafting for CNS injury</b>                  S. R. Whittemore,                  University of Louisville, Louisville, KY.</p>	<p><b>25 Crosslinked Carboxymethylcellulose Hydrogels: Versatile Platforms for Studying Cellular Behavior in 3D Biomaterials</b>                  L. Lombardo, R. Reeves, A. Ribeiro, J. B. Leach;                  University of Maryland, Baltimore County, Baltimore, MD.</p>	<p><b>33 Mechano-Active Cartilage Tissue Engineering using 3-Dimensional and Dynamic Environments</b>                  S. Kim<sup>1</sup>, Y. Jung<sup>1</sup>, S. Kim<sup>1</sup>, S.-H. Kim<sup>1</sup>, Y. Kim<sup>2</sup>, B. Min<sup>3</sup>;  <sup>1</sup>Korea Institute of Science and Technology, Seoul, REPUBLIC OF KOREA, <sup>2</sup>Gwangju Institute of Science and Technology, Gwangju, REPUBLIC OF KOREA, <sup>3</sup>Seoul National University, Seoul, REPUBLIC OF KOREA.</p>	<p><b>41 Effect of Anatomic and Inverted Test Position on the Wear of Crosslinked UHMWPE Liners in a Hip Simulation Study</b>                  M. Aehle<sup>1</sup>, A. Alberts<sup>2</sup>, Y.-S. Liao<sup>3</sup>;  <sup>1</sup>Case Western Reserve University, Cleveland, OH, <sup>2</sup>DePuy Orthopaedics, Inc., Warsaw, IN.</p>
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10:00 am	<p><b>2 The Structure and Hybridization Properties of DNA Monolayers Engineered for Complex Media Applications</b>                  L. J. Gamble<sup>1</sup>, C.-Y. Lee<sup>1</sup>, P.-C. Nguyen<sup>1</sup>, D. W. Grainger<sup>2</sup>, D. G. Castner<sup>1</sup>;  <sup>1</sup>University of Washington, Seattle, WA, <sup>2</sup>University of Utah, Salt Lake City, UT.</p>	<p><b>10 Worm-like and spherical micelles made from the same PEO-PCL: advantages of paclitaxel delivery using worm-like micelles</b>                  S. Cai<sup>1</sup>, T. Minko<sup>2</sup>, D. E. Discher<sup>1</sup>;  <sup>1</sup>University of Pennsylvania, Philadelphia, PA, <sup>2</sup>State University of New Jersey - Rutgers, Piscataway, NJ.</p>	<p><b>26 Hyaluronic Acid-Based Microgel Systems with Tunable Viscoelasticity and Therapeutic Potentials for Soft Tissue Regeneration</b>                  X. Jia, N. Sahiner, A. Jha;                  University of Delaware, Newark, DE.</p>	<p><b>34 Nanobased Fiber Matrices for Wound Repair: Optimization for Human Skin Fibroblast Growth</b>                  S. G. Kumar;                  University of Virginia, Charlottesville, VA.</p>	<p><b>42 Surface Evaluation and Wear of Explanted Conventional and Highly Cross-linked Polyethylene Acetabular Liners</b>                  M. P. Laurent<sup>1</sup>, M. J. Salneros<sup>2</sup>, J. J. Jacobs<sup>1</sup>, M. A. Wimmer<sup>1</sup>, R. D. Crowninshield<sup>1</sup>;  <sup>1</sup>Rush University Medical Center, Chicago, IL, <sup>2</sup>Hospital Militar de Santiago, Santiago, CHILE.</p>
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10:15 am	<p><b>3 Surface Characterization and Investigation of Protein Adsorption for the Optimization of Microcapsule Bioperformance</b>                  S. K. Tam<sup>1</sup>, L. Yahia<sup>1</sup>, J.-P. Hallé<sup>2</sup>, B. J. de Haan<sup>3</sup>, S. Polizu<sup>1</sup>, P. de Vos<sup>1</sup>;  <sup>1</sup>École Polytechnique de Montréal, Montréal, PQ, CANADA, <sup>2</sup>Guy-Bernier Research Center, Montréal, PQ, CANADA, <sup>3</sup>University Medical Center Groningen, Groningen, THE NETHERLANDS.</p>	<p><b>11 Controlled Release of Antibiotics and Bactericidal Effect of Thin Sol-Gel Film on Metallic Implant Device</b>                  S. Radin<sup>1</sup>, V. Antoci, Jr.<sup>2</sup>, N. J. Hickock<sup>2</sup>, C. S. Adams<sup>3</sup>, J. Parvizi<sup>2</sup>, I. Shapiro<sup>2</sup>, P. Ducheyne<sup>1</sup>;  <sup>1</sup>University of Pennsylvania, Philadelphia, PA, <sup>2</sup>Thomas Jefferson University, Philadelphia, PA.</p>	<p><b>19 Methylcellulose-Laminin Hydrogel Supports Migration and Influences Differentiation of Neural Stem Cells</b>                  S. E. Stabenfeldt, A. J. Garcia, M. C. LaPlaca;                  Georgia Institute of Technology, Atlanta, GA.</p>	<p><b>27 Chondroitin Sulfate based hydrogel niche for chondrogenic differentiation of mesenchymal stem cells</b>                  S. Varghese, N. Hwang, A. Canver, D. Lin, P. Theprungsirikul, J. Elisseeff;                  Johns Hopkins University, Baltimore, MD.</p>	<p><b>35 Novel Polymers and Nanocomposites as Injectable Bone Tissue Engineering Materials</b>                  S. Wang, D. H. Kempen, K.-w. Lee, M. J. Yaszemski, L. Lu;                  Mayo Clinic, Rochester, MN.</p>	<p><b>43 Diametral Clearance Effect on Friction and Wear characteristics of Metal-on-Metal Articulations</b>                  M. Shen, B. Grundmann, G. Liebentritt; Zimmer GmbH, Winterthur, SWITZERLAND.</p>
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10:30 am	<p><b>4 Immobilization of Therapeutics on Metal Surfaces Using Self Assembled Monolayers</b>                  G. Mani<sup>1</sup>, D. M. Johnson<sup>1</sup>, D. Marton<sup>2</sup>, V. Dougherty<sup>1</sup>, M. Feldman<sup>2</sup>, D. Patel<sup>2</sup>, A. Ayon<sup>1</sup>, C. M. Agrawal<sup>1</sup>;  <sup>1</sup>The University of Texas at San Antonio, San Antonio, TX, <sup>2</sup>The University of Texas Health Science Center at San Antonio, San Antonio, TX.</p>	<p><b>12 Engineering of targeted protein therapeutics: Recombinant N-TIMP-3 with a targeting domain for articular cartilage</b>                  D. A. Rothenfluh, M. Martino, J. A. Hubbell;                  Ecole Polytechnique FÉdÉrale de Lausanne, Lausanne, SWITZERLAND.</p>	<p><b>20 A dopamine-based poly(aminoglycerol ester) induces significant neurite extension in differentiated PC12 cells and rat DRGs</b>                  J. Gao<sup>1</sup>, Y. Kim<sup>2</sup>, H. Coe<sup>1</sup>, B. Zern<sup>1</sup>, B. Sheppard<sup>1</sup>, Y. Wang<sup>1</sup>;  <sup>1</sup>Georgia Institute of Technology/Emory University, Atlanta, GA, <sup>2</sup>Kyungpook National University, Daegu, REPUBLIC OF KOREA, <sup>3</sup>University of Florida, Gainesville, FL.</p>	<p><b>28 Synthesis and Characterization of a Photocrosslinkable Collagen-Hyaluronan Interpenetrating Network for Neural Tissue Engineering : An ECM mimic</b>                  S. Suri, C. Schmidt;                  University of Texas at Austin, Austin, TX.</p>	<p><b>36 Healing Bone Using a Biomimetic Tubular Sintered Microsphere Matrix: In Vitro Polymer Evaluation and In Vivo Bone Regeneration</b>                  M. D. Kofron<sup>1</sup>, A. Griswold<sup>1</sup>, K. Martin<sup>2</sup>, S. G. Kumar<sup>1</sup>, X. Wen<sup>1</sup>, C. T. Laurencin<sup>1</sup>;  <sup>1</sup>University of Virginia, Charlottesville, VA, <sup>2</sup>Medical University of South Carolina, Charleston, SC, <sup>3</sup>Clemson University, Clemson, SC.</p>	<p><b>44 A Novel, Single-Step Method to Separate Multiple Types of Wear Debris from Tissues or Wear Simulator Lubricants</b>                  F. Billi, P. Benya, P. Campbell, W. McGarry, H. A. McKellop, E. Ebramzadeh;                  Orthopaedic Hospital and UCLA, Los Angeles, CA.</p>
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10:45 am	<p><b>5 Thermoplastic Polycarbonate-urethane with Covalently-Bonded C-18 End Groups: Surface and Bulk Properties</b>  <b>R. Ward</b>, K. McCrea, Y. Tian, J. Yang, S. Wang, J. Parakka, N. Harjati, R. Ward;  Polymer Technology Group, Berkeley, CA.</p>	<p><b>13 Fabrication of biodegradable polyurethane/poly(lactide-co-glycolide) nanofibrous sheets with controlled antibiotic release via two stream electrospinning</b>  <b>Y. Hong</b>, J. Guan, J. J. Stankus, W. R. Wagner;  <sup>1</sup>McGowan Institute for Regenerative Medicine, Pittsburgh, PA.</p>	<p><b>21 Anisotropic Hydrogel Scaffolds Enhance Peripheral Nerve Regeneration Across Long Nerve Gaps</b>  <b>M. Dodla<sup>1</sup></b>, V. K. Haftel<sup>2</sup>, R. V. Bellamkonda<sup>1</sup>;  <sup>1</sup>Georgia Institute of Technology, Atlanta, GA,  <sup>2</sup>Morehouse College, Atlanta, GA.</p>	<p><b>29 Release Rate Controls Biological Activity of Nerve Growth Factor Delivered from Fibrin Matrices Containing Affinity-based Drug Delivery Systems</b>  <b>M. D. Wood</b>, S. E. Sakiyama-Elbert;  Washington University, St. Louis, MO.</p>	<p><b>37 Human Stem Cell Growth within Superporous Poly(ethylene glycol)-based Hydrogels</b>  <b>R. A. Gemeinhart</b>;  University of Illinois at Chicago, Chicago, IL.</p>	<p><b>45 Performance of Hylamer-M in Revision Total Knee Arthroplasty</b>  <b>J.-M. Brandt<sup>1</sup></b>, C. Young<sup>2</sup>, D. Naudie<sup>3</sup>, S. MacDonald<sup>4</sup>, C. Rorabeck<sup>5</sup>;  <sup>1</sup>University of Waterloo, London, ON, CANADA, <sup>2</sup>University of Western Ontario, London, ON, CANADA.</p>
11:00 am	<p><b>6 Polypeptide Multilayer Films as Artificial Extracellular Matrices</b>  <b>D. T. Haynie</b>, S. M. Sriram, N. Palath, L. Zhang, J. S. Rudra, K. Dave;  Artificial Cell Technologies, New Haven, CT.</p>	<p><b>14 Therapeutic Contact Lenses: In-vitro Release via Experimental Physiological Ocular Tear Flow Model</b>  M. Ali, J. Zhang, J. Saha, S. Pass, S. Horikawa, J. Hong, <b>M. E. Byrne</b>;  Auburn University, Auburn, AL.</p>	<p><b>23 Three Dimensional Aligned Individual Nano-fibers For Neural Tissue Engineering</b>  <b>V. Beachley</b>, X. Wen;  Clemson University, Charleston, SC.</p>	<p><b>30 Controlled Release of PRP-Derived Growth Factors from Alginate Hydrogel Carriers Promotes Osteogenic Differentiation of Mesenchymal Stem Cells</b>  <b>S. S. Lin</b>, R. Landesberg, S. B. Eisig, H. H. Lu;  Columbia University, New York, NY.</p>	<p><b>38 Fabrication of transplantable human oral mucosal epithelial cell sheets using temperature-responsive culture inserts the use of xenoeneic products</b>  <b>D. Murakami<sup>1</sup></b>, M. Yamato<sup>2</sup>, T. Ohki<sup>2</sup>, R. Takagi<sup>2</sup>, H. Namiki<sup>1</sup>, T. Okano<sup>2</sup>;  <sup>1</sup>Waseda University, Tokyo, JAPAN, <sup>2</sup>Tokyo Women's Medical University, Tokyo, JAPAN.</p>	<p><b>46 The Influence of Roughness on the Wettability of Retrieved Cobalt-Chromium and Zirconia Femoral Heads</b>  <b>M. E. Roy<sup>1</sup></b>, M. E. Magill<sup>2</sup>, L. A. Whiteside<sup>1</sup>, B. J. Katerberg<sup>3</sup>, J. A. Steiger<sup>4</sup>;  <sup>1</sup>Missouri Bone &amp; Joint Research Foundation, St. Louis, MO, <sup>2</sup>Vanderbilt University School of Medicine, Nashville, TN, <sup>3</sup>Whiteside Biomechanics, Inc., St. Louis, MO.</p>
11:15 am	<p><b>7 Molecular Detection of Fibrinogen on Poly (dimethyl siloxane) by Atomic Force Microscopy</b>  <b>P. Soman<sup>1</sup></b>, C. Siedlecki<sup>2</sup>;  <sup>1</sup>Penn State University, Hershey, PA,  <sup>2</sup>Pennsylvania State University, Hershey, PA.</p>	<p><b>15 Enzyme immobilization for the controlled release of a bioactive molecule from hydrogels</b>  <b>C. D. Donahoe</b>, M. M. Kaneda, S. K. Alford, B. K. Wacker, D. L. Elbert;  Washington University, St. Louis, MO.</p>	<p><b>23 Effects of Bridging a Gap in the Rat Spinal Cord with a Collagen Tube and Membrane</b>  <b>S. Matin<sup>1</sup></b>, R. H. Cholas<sup>2</sup>, H-P. Hsu<sup>1</sup>, I. V. Yannas<sup>1</sup>, M. Spector<sup>1</sup>;  <sup>1</sup>VA Boston Healthcare System, Boston, MA,  <sup>2</sup>Massachusetts Institute of Technology, Cambridge, MA, <sup>3</sup>Massachusetts Institute of Technology, Cambridge, MA.</p>	<p><b>31 Exogenous Insulin-like Growth Factor-1 Delivery Effects on Endogenous Signaling of Encapsulated Chondrocytes in Alginate Hydrogels</b>  <b>D. M. Yoon</b>, J. P. Fisher;  University of Maryland - College Park, College Park, MD.</p>	<p><b>39 Extracellular Matrix Derived Gel for Cardiac Tissue Engineering Applications</b>  <b>D. O. Freytes<sup>1</sup></b>, K. Tobita<sup>2</sup>, J. P. Tinney<sup>2</sup>, B. B. Keller<sup>2</sup>, J. W. Wainwright<sup>1</sup>, J. Martin<sup>2</sup>, S. S. Velankar<sup>2</sup>, S. F. Badylak<sup>1</sup>;  <sup>1</sup>McGowan Institute for Regenerative Medicine, Pittsburgh, PA, <sup>2</sup>University of Pittsburgh, Pittsburgh, PA.</p>	<p><b>47 OPEN SLOT</b></p>
11:30 am	<p><b>8 Enhanced Cellular Behaviour on Plasma-modified Electrospun Biodegradable Nanofiber Meshes</b>  <b>A. Martins<sup>1</sup></b>, E. D. Pinho<sup>1</sup>, J. Cunha<sup>2</sup>, F. Macedo<sup>2</sup>, R. L. Reis<sup>1</sup>, N. M. Neves<sup>1</sup>;  <sup>1</sup>University of Minho - 3B's Research Group, Braga, PORTUGAL, <sup>2</sup>University of Minho - Department of Physics, Braga, PORTUGAL.</p>	<p><b>16 Nanocomposite Hydrogels as Remote Controlled Drug Delivery Systems</b>  <b>N. S. Satarkar</b>, J. Hilt;  University of Kentucky, Lexington, KY.</p>	<p><b>24 Human Hair Derived Keratins Mediate Schwann Cell Behavior in vitro and Facilitate Rapid Peripheral Nerve Regeneration in vivo</b>  <b>P. Sierpinski</b>, J. Garrett, J. Ma, P. Apel, T. Smith, A. Atala, L. A. Koman, M. Van Dyke;  Wake Forest University School of Medicine, Winston Salem, NC.</p>	<p><b>32 Hyaluronic Acid Mediation of Mesenchymal Stem Cell Behavior in Photocrosslinkable Hydrogels</b>  <b>C. Chung</b>, J. A. Burdick;  University of Pennsylvania, Philadelphia, PA.</p>	<p><b>40 Chemoattractant Degradation Products of Extracellular Matrix Bioscaffolds</b>  <b>E. P. Brennan</b>, J. Reing, L. Zhang, J. M. Myers-Irvin, S. F. Badylak;  University of Pittsburgh, Pittsburgh, PA.</p>	<p><b>48 Effect of Crosslinking and Femoral Material on Polyethylene Wear Debris in a Knee Simulator Model</b>  <b>P. Williams<sup>1</sup></b>, C. M. Brown<sup>1</sup>, R. Tsukamoto<sup>1</sup>, H. Shoji<sup>1</sup>, T. Nakamura<sup>2</sup>, I. C. Clarke<sup>3</sup>;  <sup>1</sup>Loma Linda University, Loma Linda, CA,  <sup>2</sup>Kyoto University, Kyoto, JAPAN.</p>

Concurrent Oral Abstract Presentations Session II • Thursday, April 19, 2007 12:45 pm - 2:45 pm

<p><b>Biomaterials and Microscale Technologies for Biomedical Applications I (General Session)</b>                  Sheraton Center Moderators – Jason Burdick, PhD, Ali Khademhosseini, PhD</p>	<p><b>Cell Function on Biomaterial Gradients and Arrays (Symposium)</b>                  Sheraton 2                  Moderators – Carl G. Simon, PhD, Kai Zhang, PhD</p>	<p><b>Tissue Engineered Products for Clinical Applications II (General Session)</b>                  Sheraton 3                  Moderators – Young Ha Kim, PhD, Kam Leong, PhD</p>	<p><b>Drug/biomedical Device Combination Products I (General Session)</b>                  Chicago 8                  Moderators – David W. Grainger, PhD, William G. Pitt</p>	<p><b>Nano and Microparticulate Drug Delivery (Symposium)</b>                  Chicago 9                  Moderators – Marke Byrne, PhD, Steven R. Little, PhD</p>	<p><b>Nanoparticles for Imaging and Drug Delivery (General Session)</b>                  Chicago 10                  Moderators – Ick Chan Kwon, PhD, Patrick Stayton</p>
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<p><b>12:45 pm</b> 49 <b>Laser Alignment of Adult Myocytes on Agarose Gel</b>                  R. K. Pirto<sup>1</sup>, K. Mills<sup>2</sup>, M. R. Zile<sup>2</sup>, C. F. Balci<sup>1</sup>, B. Z. Gao<sup>1</sup>;  <sup>1</sup>Clemson University, Clemson, SC, <sup>2</sup>Medical University of South Carolina, Charleston, SC.</p>	<p>57 <b>Biology Inspired Design for Guided Axon Growth</b>                  M. S. Shoichet, L. Yu, T. Kapur, M. MacSween, K. Moore, X. Cao;                  University of Toronto, Toronto, ON, CANADA.</p>	<p>65 <b>Does the surface on which a macrophage differentiates determine its subsequent form and degradative function?</b>                  M. B. Ariganello<sup>1</sup>, J. M. Lee<sup>1</sup>, R. S. Labow<sup>2</sup>;  <sup>1</sup>Dalhousie University, Halifax, NS, CANADA, <sup>2</sup>University of Ottawa, Ottawa, ON, CANADA.</p>	<p>73 <b>Bioactivity of TGF-Beta1 and PDGF-BB Released from PEGylated Fibrin Gels</b>                  C. T. Drinnan, E. L. Mosier, L. J. Suggs;                  University of Texas at Austin, Austin, TX.</p>	<p>81 <b>Nanoparticles for treatment of cancer</b>                  M. Saltzman;                  Yale University, New Haven, CT.</p>	<p>89 <b>Evaluation of Gold / Gold-Sulfide nanoparticles for use in photothermal ablation cancer therapy.</b>                  A. M. Gobin, E. M. Watkins, J. L. West;                  Rice University, Houston, TX.</p>
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<p><b>1:00 pm</b> 50 <b>Poly(diol citrate) nanocomposites with enhanced mechanical properties for soft tissue engineering</b>                  A. R. Webb, V. A. Kumar, G. A. Ameer;                  Northwestern University, Evanston, IL.</p>		<p>66 <b>Pre-Seeding Bone Marrow Cells-Derived Endothelial Cells Promotes in vivo Osteogenesis of Bone Substitutes</b>                  H. Yu, B. Wu, L. Mayton, Z. Song, P. H. Wooley, S-Y. Yang;                  Wayne State University, Detroit, MI.</p>	<p>74 <b>Preferential Partition of Paclitaxel in PEG /PLGA blends and its release visualized by coherent anti-Stokes Raman scattering microscopy</b>                  E. Kang, J. Robinson, J-X. Cheng, K. Park;                  Purdue University, West Lafayette, IN.</p>		<p>90 <b>In Vivo Real-Time Bioimaging of Hyaluronic Acid Derivatives Using Quantum Dots</b>                  S. Hahn, J. Kim, H. Kang;                  Pohang University of Science and Technology (POSTECH), Pohang, REPUBLIC OF KOREA.</p>
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<p><b>1:15 pm</b> 51 <b>Selective Adhesion of Primary Neurons and Schwann Cells on Carbon Nanotube/Polycarbonate Urethane Surfaces</b>                  D. Khang, J. Bruder, D. Hoffman-Kim, T. Webster;                  Brown University, Providence, RI.</p>	<p>59 <b>A Systematic Approach to Bioprinting Growth Factor Gradients and Interpreting Cell Responses</b>                  E. D. Miller, K. Li, L. E. Weiss, L. M. Walker, T. Kanade, P. G. Campbell;                  Carnegie Mellon University, Pittsburgh, PA.</p>	<p>67 <b>Application of Polyphenol (EGCG) Storage Solution to Cold Preservation of Osteochondral Tissues</b>                  J. BAE, D-W. HAN, K. MATSUMURA, S. TSUTSUMI, S-H. HYON;                  Kyoto University, Kyoto, JAPAN.</p>	<p>75 <b>Bloodcompatibility of Slipskin® and ptfе coated guidewires</b>                  Y. B. J. Aldenhoff;                  University of Maastricht, Maastricht, THE NETHERLANDS.</p>	<p>83 <b>A New Predictive Model for Drug Release Based on Void Growth and Coalescence: Training and Verification</b>                  S. N. Rothstein, W. J. Federspiel, S. R. Little;                  University of Pittsburgh, Pittsburgh, PA.</p>	<p>91 <b>Targeted Multifunctional Quantum dot™ Nanoparticles for ex vivo Cancer Diagnostics</b>                  E. Haglund;                  Purdue University, West Lafayette, IN.</p>
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<p><b>1:30 pm</b> 52 <b>Biological Damage Encountered through Inkjet Printing</b>                  C. C. Cook, R. Saunders, B. Derby;                  The University of Manchester, Manchester, UNITED KINGDOM.</p>	<p>60 <b>Polymeric Combinatorial Scaffold Libraries for Screening Cell-Biomaterial Interactions</b>                  Y. Yang<sup>1</sup>, M. L. Becker<sup>1</sup>, J. Kohn<sup>2</sup>, C. G. Simon, Jr.<sup>1</sup>;  <sup>1</sup>NIST, Gaithersburg, MD, <sup>2</sup>New Jersey Center for Biomaterials, Rutgers University, Piscataway, NJ.</p>	<p>68 <b>Notch Signaling Biomaterials: Efficient Intracellular Signaling and T cell Differentiation from Stem Cells</b>                  S. Z. Taqvi, J. Chang, R. Jyothindran, E. Dawson, K. Roy;                  University of Texas at Austin, Austin, TX.</p>	<p>76 <b>Calcium Phosphate Cements Loaded With Proton Pump Inhibitors as Novel Bone Substitute Biomaterials</b>                  M. V. F. Araujo;                  University of Toronto, Toronto, ON, CANADA.</p>	<p>84 <b>Photothermal ablation of tumor vasculature via VEGFr targeted nanoshells</b>                  A. R. Lowery, N. J. Halas, J. L. West;                  Rice University, Houston, TX.</p>	<p>92 <b>Functionalized Gold Nanorods: Dual Confocal Receptor-Specific Contrast and Thermal Therapy Agents</b>                  K. C. L. Black, IV<sup>1</sup>, N. Kirkpatrick<sup>2</sup>, L. Xu<sup>2</sup>, J. Vagner<sup>2</sup>, R. Gillies<sup>2</sup>, U. Utzinger<sup>2</sup>, M. Romanowski<sup>2</sup>;  <sup>1</sup>Northwestern University, Evanston, IL, <sup>2</sup>University of Arizona, Tucson, AZ.</p>
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1:45 pm

- 53 Modifications of the PEGDA hydrogels to regulate endothelial angiogenesis and vasculogenesis**  
J. J. Moon, S-H. Lee, M. S. Hahn, B. A. Nsiah, J. L. West;  
Rice University, Houston, TX
- 61 MODULATION OF CELL MIGRATION ALONG FN GRADIENTS USING SOLUBLE FACTORS**  
W. M. Reichert, J. T. Smith;  
Duke University, Durham, NC.
- 69 The Intrinsic Durability of the Aortic Valve Extracellular Matrix**  
E. M. Joyce, J. Liao, M. Sacks;  
University of Pittsburgh, Pittsburgh, PA.
- 77 Controlled Release of Silver Ions from an Electrochemically Deposited Hydroxyapatite Coating**  
Y. Ghani, M. Coathup, A. Unnithan, K. Hing, G. Blunn;  
University College London, London, UNITED KINGDOM.
- 85 In vitro evaluation of immune activation by novel biodegradable polymer adjuvants**  
M. P. Torres, J. Wilson, S. Lopac, M. Modest, M. Wannemuehler, S. K. Mallapragada, B. Narasimhan;  
Iowa State University, Ames, IA.
- 93 Functionalized Gold Nanoparticles as a Damage Specific Contrast Agent for Bone**  
Z. Zhang, R. D. Ross, R. K. Roeder;  
University of Notre Dame, Notre Dame, IN.

2:00 pm

- 54 Preparation of multifunctional nanofibrous scaffold for tissue engineering**  
H. Wang;  
Stevens Institute of Technology, Hoboken, NJ.
- 62 Profiling cell-biomaterial interactions via high content imaging on roughness gradients of polymer blends**  
E. Liu<sup>1</sup>, M. Treiser<sup>1</sup>, H. Patel<sup>1</sup>, R. A. Dubin<sup>1</sup>, M. L. Becker<sup>2</sup>, J. Kohn<sup>1</sup>, P. V. Moghe<sup>1</sup>;  
<sup>1</sup>Rutgers University, Piscataway, NJ, <sup>2</sup>National Institute of Standards and Technology, Gaithersburg, MD.
- 70 Subcutaneous transplantation of autologous oral mucosal epithelial cell sheets fabricated with temperature-responsive culture dishes**  
H. Obokata<sup>1</sup>, M. Yamato<sup>2</sup>, S. Tsuneda<sup>1</sup>, T. Okano<sup>3</sup>;  
<sup>1</sup>Waseda University, Shinjuku, JAPAN, <sup>2</sup>Tokyo Women's Medical University, Shinjuku, JAPAN.
- 78 Mathematical Modeling of Cardiovascular Drug Delivery**  
S. Prabhu, S. Hossainy;  
Abbott Vascular, Santa Clara, CA.
- 86 Microsphere Mediated Delivery of Differentiation Factors for Directed Embryonic Stem Cell Differentiation**  
R. L. Carpenedo, R. A. Marklein, T. C. McDevitt;  
Georgia Institute of Technology, Atlanta, GA.
- 94 Synthesis and Applications of New Contrast Agents for *In Vivo* Cell Tracking**  
Y. Tachibana;  
National Cardiovascular Center Research Institute, Osaka, JAPAN.

2:15 pm

- 55 Two Photon Induced Polymerization of Microstructured Medical Devices**  
R. Narayan;  
University of North Carolina at Chapel Hill, Chapel Hill, NC.
- 63 Combinatorial Investigation of Osteoblast Response to Nano- and Microstructured Biomaterials**  
G. Wingkono, C. Meredith, J. Su;  
Georgia Institute of Technology, Atlanta, GA.
- 71 Orbital Floor Regeneration Using Cyclic Acetal Hydrogels**  
M. W. Betz<sup>1</sup>, J. F. Caccamese<sup>2</sup>, D. P. Coletti<sup>2</sup>, J. J. Sauk<sup>3</sup>, J. P. Fisher<sup>1</sup>;  
<sup>1</sup>University of Maryland, College Park, MD, <sup>2</sup>University of Maryland Dental School, Baltimore, MD.
- 79 Dacron vascular graft impregnated with connective tissue growth factor**  
O. Molye, G. Schultz, W. A. Lee, C. Batich;  
University of Florida, Gainesville, FL.
- 87 Sustained Delivery of Novel Polymer/DNA Complexes from their Self-Assembled Injectable Gels**  
A. Agarwal<sup>1</sup>, R. C. Unfer<sup>2</sup>, S. K. Mallapragada<sup>3</sup>;  
<sup>1</sup>Iowa State University, Ames, IA, <sup>2</sup>Iowa Cancer Research Foundation, Urbandale, IA.
- 95 Effective Bone Regeneration by Sustained Delivery of BMP-2 via Functional Nanoparticle-Fibrin Gel Complex**  
G. Tae<sup>1</sup>, Y-I. Chung<sup>1</sup>, K-M. Ahn<sup>2</sup>, S-H. Jeon<sup>3</sup>, S-Y. Lee<sup>4</sup>, J-H. Lee<sup>5</sup>;  
<sup>1</sup>Gwangju Institute of Science and Technology, Gwangju, REPUBLIC OF KOREA, <sup>2</sup>Ulsan University, Asan Medical Center, Seoul, REPUBLIC OF KOREA, <sup>3</sup>Seoul National University, Seoul, REPUBLIC OF KOREA.

2:30 pm

- 56 Microfluidic bioreactors as tools for monitoring cell microenvironment**  
M. A. Acosta, Y. Kostov, J. B. Leach;  
University of Maryland-Baltimore County, Baltimore, MD.
- 64 Cell Adhesion Guidance by Plasma Polymer Gradients**  
M. Zelzer;  
University of Nottingham, Nottingham, UNITED KINGDOM.
- 72 Biomaterials for Tissue Engineering with Control of Dendritic Cell Phenotype**  
J. Park, J. E. Babensee;  
Georgia Institute of Technology, Atlanta, GA.
- 80 Preservation of Platelet Count and Function in Extracorporeal Circulation via *In Situ* Nitric Oxide Generation at Polymer/Blood Interface**  
Y. Wu, N. G. Lafayette, W. Cha, M. C. Frost, R. H. Bartlett, M. E. Meyerhoff;  
University of Michigan-Ann Arbor, Ann Arbor, MI.
- 88 Injectable controlled delivery system for adipogenesis of adipose derived stem cells**  
A. J. DeFoil<sup>1</sup>, J. Rubin<sup>1</sup>, N. Rajendran<sup>2</sup>, K. G. Marra<sup>3</sup>;  
<sup>1</sup>University of Pittsburgh, Pittsburgh, PA, <sup>2</sup>Carnegie Mellon University, Pittsburgh, PA.
- 96 In Vitro Gene Delivery Using Polyethylene Glycol Based Vehicles Coupled to Endosomal Escape Peptides**  
N. M. Moore, T. R. Barbour, S. E. Sakiyama-Elbert;  
Washington University St. Louis, St. Louis, MO.

Concurrent Oral Abstract Presentations Session III • Friday, April 20, 2007 8:00 am - 9:30 am

	Surface Modification and Characterization of Orthopaedic and Dental Implants at the Nano/Micro Scale for Improved Osseointegration I (Symposium) Sheraton Center Moderators – Paulo Coelho, PhD, Yusuf Khan, PhD	Cardiovascular Biomaterials SIG (General Session) Sheraton 2 Moderators – Martin W. King, Horst Von Recum, PhD	Regenerative Medicine and Clinical Translation I (Symposium) Sheraton 3 Moderators – Mark Van Dyke, PhD, James Yoo, MD, PhD	Tissue Engineering SIG (General Session) Chicago 8 Moderators – Shelly Sakiyama-Elbert, PhD, Yadong Wang, PhD	Ophthalmologic Biomaterials (General Session) Chicago 9 Moderators – Richard A. Gemeinhart, PhD, Daniel Urbaniak, PhD	Toll-like Receptor Interaction with Biomaterial Implants (Symposium) Chicago 10 Moderators – Janson Emmanuel, PhD, Howard Winet, PhD
8:00 am	97 <b>Biomimetic Surface Engineering: Where Do We Go From Here?</b> K. E. Healy; University of California, Berkeley, Berkeley, CA.	103 <b>Age-related Morphologic Changes in Human Renal Arteries and Their Influence on Mechanical Behavior</b> Y. Yuan <sup>1</sup> , T. Topoleski <sup>1</sup> , W. Mergner <sup>2</sup> , L. Li <sup>3</sup> ; <sup>1</sup> UMBC, Baltimore, MD, <sup>2</sup> University of Maryland Medical School, Baltimore, MD, <sup>3</sup> Office of the Chief Medical Examiner, Baltimore, MD.	109 <b>Strategies for Commercialization of Regenerative Medicine</b> S. F. Badylak; University of Pittsburgh, Pittsburgh, PA.	115 <b>A Novel Three-Dimensional Culture System to Study vasculogenesis and Osteogenic Differentiation of BMS Cells</b> M. T. Valarmathi, J. D. Potts, M. J. Yost, R. L. Goodwin, E. Jabbari; University of South Carolina, Columbia, SC.	121 <b>In situ Formation of Copolymeric Hydrogels as Vitreous Substitutes</b> K. E. Swindle <sup>1</sup> , P. D. Hamilton <sup>1</sup> , Y-B. Shui <sup>1</sup> , D. C. Beebe <sup>1</sup> , N. Ravi <sup>2</sup> ; <sup>1</sup> Washington University, Saint Louis, MO, <sup>2</sup> Department of Veterans Affairs, Saint Louis, MO.	126 <b>Toll-Like Receptors and the Host Response to Biomaterials</b> J. Babensee; Georgia Institute of Technology, Atlanta, GA.
8:15 am		104 <b>Effects of Glutaraldehyde Fixation and Cyclic Loading on the Thermoelastic Properties of Aortic Heart Valve Leaflets</b> S. M. Wells <sup>1</sup> , M. S. Sacks <sup>2</sup> ; <sup>1</sup> Dalhousie University, Halifax, NS, CANADA, <sup>2</sup> University of Pittsburgh, Pittsburgh, PA.		116 <b>Controlling the 3D architecture of hydrogel scaffolds for tissue engineering</b> S. J. Bryant <sup>1</sup> , D. J. Mortisen <sup>2</sup> , S. M. LaNasa <sup>1</sup> , K. D. Hauch <sup>1</sup> , B. D. Ratner <sup>2</sup> ; <sup>1</sup> University of Colorado, Boulder, CO, <sup>2</sup> University of Washington, Seattle, WA.	122 <b>Improvement of Hydrogel Stability by O,N Acyl Rearrangement: A New Approach for Securing Ocular Wounds</b> M. Wathier, J. Berlin, M. W. Grinstaff; Boston University, Boston, MA.	
8:30 am	99 <b>Covalently-linked Hyaluronan promotes bone formation around Ti implants in a rabbit model</b> M. Morra <sup>1</sup> , C. Cassinelli <sup>1</sup> , G. Cascardo <sup>1</sup> , M. Fini <sup>2</sup> , G. Giavaresi <sup>2</sup> , R. Giardino <sup>2</sup> ; <sup>1</sup> Nobil Bio Ricerche, Villafranca d'Asti, ITALY, <sup>2</sup> Istituti Ortopedici Rizzoli, Bologna, ITALY.	105 <b>Improved Glycosaminoglycan Stabilization in Bioprosthetic Heart Valves</b> D. RAGHAVAN, D. Simionescu, N. Vyavahare; CLEMSON UNIVERSITY, CLEMSON, SC.	111 <b>In vivo functionality of autologous tissue engineered constructs based on SPCL scaffolds cultured with goat marrow cells</b> M. T. Rodrigues <sup>1</sup> , M. E. Gomes <sup>1</sup> , C. A. Viegas <sup>2</sup> , J. T. Azevedo <sup>2</sup> , I. R. Dias <sup>2</sup> , R. L. Reis <sup>1</sup> ; <sup>1</sup> University of Minho - 3Bs Research Group, Braga, PORTUGAL, <sup>2</sup> University of Trás os Montes e Alto Douro, Vila Real, PORTUGAL.	117 <b>In Vivo Evaluation of Heterotypic Cellular Interactions on a Tri-Phasic Scaffold for Soft Tissue-to-Bone Integration</b> J. P. Spalazzi <sup>1</sup> , E. Dagher <sup>2</sup> , S. B. Doty <sup>2</sup> , X. E. Guo <sup>1</sup> , S. A. Rodeo <sup>2</sup> , H. H. Lu <sup>1</sup> ; <sup>1</sup> Columbia University, New York, NY, <sup>2</sup> Hospital for Special Surgery, New York, NY.	123 <b>A confocal study of the prevention of capsular opacification in lens refilling surgery in rabbits and monkeys</b> T. G. van Kooten <sup>1</sup> , S. A. Koopmans <sup>1</sup> , A. M. M. Hooymans <sup>1</sup> , H. J. Busscher <sup>1</sup> , T. Terwee <sup>2</sup> ; <sup>1</sup> University Medical Center Groningen, Groningen, THE NETHERLANDS, <sup>2</sup> AMO, Groningen, THE NETHERLANDS.	128 <b>LC/MS identification of 12 intracellular cytoskeletal and inflammatory proteins from monocytes adherent on surface-adsorbed fibronectin-derived peptides</b> S. Zuckerman, W. J. Kao; University of Wisconsin-Madison, Madison, WI.
8:45 am	100 <b>Novel Surface Modification of Titanium Implants in Hydrofluoric Acid: Surface Characterisation and in Vivo Performance</b> S. F. Lamolle, M. Monjo, S. Lyngstadaas, J. Ellingsen, H. J. Haugen; University of Oslo, Oslo, NORWAY.	106 <b>Glycosaminoglycan Stabilization Reduces Tissue Buckling in Bioprosthetic Heart Valves</b> S. R. SHAH, N. R. VYAVAHARE; CLEMSON UNIVERSITY, CLEMSON, SC.	112 <b>Glycerol-based biodegradable polymers and their applications in regenerative medicine</b> Y. Wang; Georgia Tech, Atlanta, GA.	118 <b>Calcium and Gap Junction Intercellular Communication Enhance Differentiation of Bone Marrow Stromal Cells</b> R. A. Rosselló, Z. Wang, P. Krebsbach, D. Kohn; University of Michigan, Ann Arbor, MI.	124 <b>Bioadhesion Reduction Revealed in Surrogate Tissue-on-Tissue Testing of Ophthalmologic Formulations</b> R. E. Baier <sup>1</sup> , A. E. Meyer <sup>1</sup> , H. Chen <sup>2</sup> , M. Chowhan <sup>2</sup> ; <sup>1</sup> University at Buffalo, Buffalo, NY, <sup>2</sup> Alcon Research, Ltd., Fort Worth, TX.	129 <b>Nanoparticle vaccines: antigen and adjuvant delivery to lymph node dendritic cells</b> S. T. Reddy <sup>1</sup> , C. P. O'neil <sup>1</sup> , V. Angeli <sup>2</sup> , G. J. Randolph <sup>2</sup> , E. Simeoni <sup>1</sup> , M. A. Swartz <sup>1</sup> , J. A. Hubbell <sup>1</sup> ; <sup>1</sup> Ecole Polytechnique Federal de Lausanne (EPFL), Lausanne, SWITZERLAND, <sup>2</sup> Mt. Sinai School of Medicine, New York, NY.

9:00 am

**101 Peptide Functionalized Titanium Substrates Differentially Modulate Osteoblast Behavior**  
**B. F. Bell<sup>1</sup>**, M. Schuler<sup>2</sup>, M. Chervonski<sup>1</sup>, S. Tosatti<sup>1</sup>, M. Textor<sup>2</sup>, Z. Schwartz<sup>1</sup>, B. D. Boyan<sup>1</sup>;  
<sup>1</sup>Georgia Institute of Technology, Atlanta, GA, <sup>2</sup>ETH-Zurich, Zurich, SWITZERLAND.

**107 In Vitro Studies Of Polydimethylsiloxane Based Polyurethanes: Correlation With Microstructure**  
**R. Hernandez<sup>1</sup>**, J. Weksler<sup>2</sup>, A. Padsalgikar<sup>2</sup>, J. Runt<sup>1</sup>;  
<sup>1</sup>Pennsylvania State University, University Park, PA, <sup>2</sup>AorTech Biomaterials, Melbourne, AUSTRALIA.

**113 Randomized comparative study between buccal mucosa and bladder submucosa matrix grafts in patients with complex urethral strictures**  
**T. AbouShwareb<sup>1</sup>**, A. Atala, A. Wahab ElKassaby;  
Wake Forest University School of Medicine, Winston Salem, NC.

**119 Development of 3<sup>rd</sup> generation fibrin delivery systems: recombinant fibrinogen growth factor fusion proteins**  
**L. Yang<sup>1</sup>**, P. Frey<sup>2</sup>, T. H. Barker<sup>3</sup>, J. A. Hubbell<sup>1</sup>;  
<sup>1</sup>Institute of Bioengineering, Ecole Polytechnique Fédérale de Lausanne, Lausanne, SWITZERLAND, <sup>2</sup>Department of Pediatric Surgery, Centre Hospitalier Universitaire Vaudois Lausanne, Lausanne, SWITZERLAND, <sup>3</sup>Department of Biomedical Engineering, Georgia Tech and Emory University, Atlanta, GA.

**125 Characterization of Poly(2-Hydroxyethyl Methacrylate) Hydrogels for Corneal Grafts**  
**A. M. Oelker<sup>1</sup>**, M. W. Grinstaff;  
Boston University, Boston, MA.

**130 The Role of Toll-like Receptor 4 in Biomaterial-induced Dendritic Cell Maturation**  
**T. H. Rogers<sup>1</sup>**, J. E. Babensee;  
Georgia Institute of Technology, Atlanta, GA.

9:15 am

**102 In-Vitro and In-Vivo Studies of Osseointegration on Laser Micro-grooved/RGD Functionalized Ti 6-Al-4V Surfaces**  
**J. Chen<sup>1</sup>**, S. Mwenifumbo<sup>1</sup>, M. Li<sup>2</sup>, R. Bly<sup>1</sup>, M. Saad<sup>3</sup>, R. Noaman<sup>3</sup>, M. Marei<sup>3</sup>, W. O. Soboyejo<sup>1</sup>;  
<sup>1</sup>Princeton Univ., Princeton, NJ, <sup>2</sup>Spectra-Physics, Inc., Mountain View, CA, <sup>3</sup>Alexandria University, Alexandria, EGYPT.

**108 Biomechanical Properties of Calf Pericardium**  
**M. Deng<sup>1</sup>**, K. Horn;  
Ethicon, a Johnson & Johnson Company, Somerville, NJ.

**114 High Porosity Tissue Engineering Scaffolds By Emulsion Templating**  
**E. Christenson<sup>1</sup>**, W. Soofi<sup>1</sup>, J. Holmes<sup>1</sup>, N. Cameron<sup>2</sup>, A. Mikos<sup>3</sup>;  
<sup>1</sup>Rice University, Houston, TX, <sup>2</sup>University of Durham, Durham, UNITED KINGDOM.

**120 Controlling MSC behavior on 3D PLLA scaffolds using physical entrapment of functional biomolecules**  
**J. F. Alvarez-Barreto<sup>1</sup>**, P. L. DeAngelis<sup>2</sup>, **V. Sikavitsas<sup>1</sup>**;  
<sup>1</sup>University of Oklahoma, Norman, OK, <sup>2</sup>University of Oklahoma Health Sciences Center, Oklahoma City, OK.

OPEN SLOT

**131 Effects of Surface Chemistry and Glycosylation Profiles of Adsorbed Proteins on Dendritic Cell Maturation**  
**S. P. Shankar<sup>1</sup>**, I. Chen<sup>1</sup>, R. M. Cornelius<sup>2</sup>, B. G. Keselowsky<sup>3</sup>, J. L. Brash<sup>2</sup>, A. J. Garcia<sup>4</sup>, J. E. Babensee<sup>1</sup>;  
<sup>1</sup>Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University, Atlanta, GA, <sup>2</sup>Department of Chemical Engineering, McMaster University, Hamilton, ON, CANADA, <sup>3</sup>George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA.



Concurrent Oral Abstract Presentations Session IV • Friday, April 20, 2007 11:00 am – 12:30 pm

	Surface Modification and Characterization of Orthopaedic and Dental Implants at the Nano/Micro Scale for Improved Osseointegration II (General Session) Sheraton Center Moderators – Helen H. Lu, Ph.D, Lakshmi Nair, PhD	Developing Best Practices in Tissue Engineering Education (Symposium) Sheraton 2 Moderators – Stephanie Bryant, PhD, Jan Stegemann, PhD	Protein and Cells at Interfaces SIG (General Session) Sheraton 3 Moderators – Laura J. Suggs, PhD, Kim Woodhouse, PhD	Urological Tissue Engineering and Biomaterials (General Session) Chicago 8 Moderators – Jiro Nagatomi, PhD, Michael Sacks, PhD	High Throughput Screening Methodologies for Biomaterials (General Session) Chicago 9 Moderators – William M. Reichert, PhD, Pak Kin Wong, PhD	Protein Adsorption on Microdevice (General Session) Chicago 10 Moderators – Thomas Horbett, Ishihara Kazuhiko, PhD
11:00 am	132 Postmortem Retrieved Porous Coated Total Knee Components: Mineral Content Variations K. E. Koller, O. Elenitoba-Johnson, R. D. Bloebaum, A. A. Hofmann; Bone & Joint Research Laboratory (151F), Salt Lake City, UT.	138 Teaching Tissue Engineering: One Professor's Experience at Three Institutions M. Saltzman, Yale University, New Haven, CT.	144 Activation of FXII in plasma at biomaterial interfaces K. Chatterjee <sup>1</sup> , Z. Guo <sup>1</sup> , E. A. Vogler <sup>2</sup> , C. A. Siedlecki <sup>1</sup> ; <sup>1</sup> Penn State College of Medicine, Hershey, PA, <sup>2</sup> Penn State University, University Park, PA.	150 Development of injectable, biodegradable and thermosensitive hydrogels that become highly flexible at body temperature and can form composites with biomolecules J. Guan, W. R. Wagner; University of Pittsburgh, Pittsburgh, PA.	156 High Throughput Genomic-Guided Biomaterials Development for Regenerative Medicine Applications T. Xu, J. Hipp, A. Atala, J. Yoo, M. Van Dyke; Wake Forest University School of Medicine, Winston Salem, NC.	162 Nano-Patterned Silicon Enhanced Fibronectin Binding and Promotes Organization of Glial Cells G. E. Tatagiri, H. W. T. Matthew, P. J. Vandevord; Wayne State University, Detroit, MI.
11:15 am	133 Osteogenic differentiation of bone marrow mesenchymal cells on Ti surfaces: additive effect of biochemical modification and surface topography M. Morra, C. Cassinelli, G. Cascardo; Nobil Bio Ricerche, Villafranca d'Asti, ITALY.		145 Monocyte-derived macrophage differentiation: Influence of polycarbonate-urethane chemistry on cellular function D. M. Dines <sup>1</sup> , J. P. Santerre <sup>2</sup> , R. S. Labow <sup>1</sup> ; <sup>1</sup> University of Ottawa Heart Institute, Ottawa, ON, CANADA, <sup>2</sup> Institute for Biomaterials and Biomedical Engineering, Faculty of Dentistry, University of Toronto, Toronto, ON, CANADA.	151 Ureteral Derived Smooth Muscle Cell Characterization For Use In Autologous Bladder Regeneration Through Bioengineering J. Donovan, J. Hagerly, D. Liu, R. Sullivan, D. Harrington, A. Sharma, E. Cheng; Children's Memorial Hospital, Chicago, IL.	157 Cytokine and Growth Factor Expression in Cerebrospinal Fluid in Patients with Hydrocephalus M. Killer <sup>1</sup> , A. Arthur <sup>2</sup> , A. Al Schameri <sup>1</sup> , D. Elbert <sup>3</sup> , J. Shum <sup>4</sup> , G. M. Cruise <sup>5</sup> ; <sup>1</sup> Christian Doppler Clinic, Salzburg, AUSTRIA, <sup>2</sup> Semmes Murphy Neurologic and Spine Clinic, Memphis, TN, <sup>3</sup> Washington University in St Louis, St Louis, MO, <sup>4</sup> MicroVenton, Aliso Viejo, CA.	163 Nonbiofouling Anionic Phospholipid Polymer Modification for Electrokinetic Microfluidic Device Y. Xu, M. Takai, K. Ishihara; The university of Tokyo, Tokyo, JAPAN.
11:30 am	134 Osteoblast Behavior and Electrochemical Impedance at Electrically Polarized Titanium Surfaces M. T. Ehrensberger, J. L. Gilbert; Syracuse University, Syracuse, NY.	140 Curriculum-Based Biomaterials Education for Secondary Students L. C. Benson, K. J. L. Burg; Clemson Univ., Clemson, SC.	146 Proteomic Analysis and Quantification of Cytokines and Chemokines from Biomaterial Surface-Adherent Macrophages and Foreign Body Giant Cells J. A. Jones <sup>1</sup> , D. T. Chang <sup>1</sup> , E. Colton <sup>1</sup> , I. K. Kwon <sup>2</sup> , T. Matsuda <sup>3</sup> , J. M. Anderson <sup>1</sup> ; <sup>1</sup> Case Western Reserve University, Cleveland, OH, <sup>2</sup> Purdue University, West Lafayette, IN, <sup>3</sup> Kyushu University, Fukuoka, JAPAN.	152 In Vivo Responses to Urological Biomaterials as Utilized for Urological Reconstruction K. M. Broadrick, A. K. Singla, B. Krishnamurthy, P. J. Vandevord; Wayne State University, Detroit, MI.	158 High Throughput Methods for Testing Hemocompatibility J. N. Cawse, L. Yu, Z. Pang, A. J. Dulgarr-Tulloch, A. Beletskii; GE Global Research, Niskayuna, NY.	164 Effects of Long Term Implantation on in vivo Chemical Sampling Calibration into Microdialysis Probes X. Mou <sup>1</sup> , M. Lennartz <sup>2</sup> , D. Loegering <sup>3</sup> , J. A. Stenken <sup>1</sup> ; <sup>1</sup> Rensselaer Polytechnic Institute, Troy, NY, <sup>2</sup> Center for Cell Biology and Cancer Research, Albany Medical College, Albany, NY, <sup>3</sup> Center for Cardiovascular Sciences, Albany Medical College, Albany, NY.
11:45 am	135 Novel Biodegradable Polymeric Blends for Orthopaedic Applications: Poly[(ethyl alanato)(phenyl phenoxy)phosphazene] - Poly(lactide-co-glycolide) Miscibility and Osteocompatibility Studies M. Deng; University of Virginia, Charlottesville, VA.	141 Experiential Learning in Tissue Engineering D. Feldman; UAB, Birmingham, AL.	147 Monocyte adhesion and secretion in response to PEG hydrogels grafted with RGD and PHSRN separated by interpositional spacers of various lengths D. R. Schmidt, W. J. Kao; University of Wisconsin - Madison, Madison, WI.	153 Bio-interactive 3D PEG hydrogels for phenotypic modulation of SMCs during bladder tissue remodeling C. A. M. Adela <sup>1</sup> , T. Segura <sup>2</sup> , P. Frey <sup>1</sup> , J. A. Hubbell <sup>1</sup> ; <sup>1</sup> Ecole Polytechnique Fédérale de Lausanne, Lausanne, SWITZERLAND, <sup>2</sup> UCLA, Los Angeles, CA.	159 Novel High-Throughput Polymer Biocompatibility Screening Designed For SAR (Structure Activity Relationship): Application For Evaluation Of Biolinx Polymer System For Cardiovascular Drug Eluting Stents A. Hezi-Yamit, C. Sullivan, J. Wong, M. Chen, C. Wilcox, K. Udipi; Medtronic Vascular, Santa Rosa, CA.	165 Nonbiofouling Patterned Surface for Obtaining High Signal/Noise Ratio in Microarray Biosensors J. Sibarani, K. Ishihara, M. Takai, T. Konno; The University of Tokyo, Tokyo, JAPAN.

- 12:00 am
- 136 **Osteoblasts Require Both Micron Scale and Submicron Scale Surface Structure for Synergy with Surface Energy**  
**G. Zhao**<sup>1</sup>, A. L. Raines<sup>1</sup>, Z. Schwartz<sup>1</sup>, M. Wieland<sup>2</sup>, B. D. Boyan<sup>1</sup>;  
<sup>1</sup>Georgia Institute of Technology, Atlanta, GA, <sup>2</sup>Institut Straumann AG, Basel, SWITZERLAND.
- 142 **Biology and Engineering of the Extracellular Matrix: An Interdisciplinary Course for Tissue Engineers**  
**J. P. Stegemann**, G. Plopper;  
Rensselaer Polytechnic Institute, Troy, NY.
- 148 **Anisotropic Diffusion in Nanopatterned Supported Lipid Bilayers**  
**E. Sun**, Y. Gao, J. C. Hone, L. Kam;  
Columbia University, New York, NY.
- 154 **Bladder Smooth Muscle Cell Response to Contact Guidance and Mechanical Stretch**  
**R. A. Long**, A. Parekh, M. B. Chancellor, M. S. Sacks;  
University of Pittsburgh, Pittsburgh, PA.
- 160 **High Throughput In vitro Cytotoxicity Screening of Biomaterial Libraries**  
**B. Narasimhan**, L. Petersen, A. Adler, J. Wilson, J. Thorstenson, M. Wannemuehler;  
Iowa State University, Ames, IA.
- 166 **Cooperative Probes for Biological and Biomedical Detection: eliminating false positives**  
**M. R. Caplan**<sup>1</sup>, B. C. Satterfield<sup>1</sup>, J. A. A. West<sup>2</sup>;  
<sup>1</sup>Arizona State University, Tempe, AZ, <sup>2</sup>Arcxis Biotechnologies, Pleasanton, CA.

- 12:15 am
- 137 **Implication of Crystal Orientation in Controlling Cell Attachment**  
**S. Faghini**, F. Azari, J. Szpunar, H. Vali, M. Tabrizian;  
McGill University, Montreal, PQ, CANADA.
- 143 **A Tissue Engineering Track within the Wake Forest/Virginia Tech School of Biomedical Engineering and Sciences (SBES)**  
**M. Van Dyke**<sup>1</sup>, A. Goldstein<sup>2</sup>, C. Hamilton<sup>1</sup>, P. Santago<sup>1</sup>, W. Grant<sup>1</sup>;  
<sup>1</sup>Wake Forest University School of Medicine, Winston Salem, NC, <sup>2</sup>Virginia Tech, Blacksburg, VA.
- 149 **Cell Placement on 3D Matrices Using a Modified Ink Jet Printer**  
**A. Chaubey**, T. Boland, T. C. Burg, K. J. L. Burg;  
Clemson University, Clemson, SC.
- 155 **Hydrogel Scaffolds for Bladder Tissue Regeneration**  
**M. Guvendiren**<sup>1</sup>, D. A. Harrington<sup>2</sup>, E. Y. Cheng<sup>3</sup>, K. R. Shull<sup>1</sup>;  
<sup>1</sup>Northwestern University, Evanston, IL, <sup>2</sup>Northwestern University, Chicago, IL.
- 161 **Identifying chemical moieties to control hMSC differentiation using a high-throughput methodology**  
**D. S. W. Benoit**<sup>1</sup>, K. S. Anseth<sup>2</sup>;  
<sup>1</sup>University of Colorado, Boulder, CO, <sup>2</sup>University of Colorado, Howard Hughes Medical Institute, Boulder, CO.
- 167 **Surface Microphase Structures of Poly(urethane urea) Biomaterials and Protein Adhesion**  
**L-C. XU**, C. A. Stedlecki;  
Penn State University College of Medicine, Hershey, PA.



Concurrent Oral Abstract Presentations Session V • Friday, April 20, 2007 1:30 pm – 3:00 pm

<p><b>Biomaterials and Microscale Technologies for Biomedical Applications II (General Session)</b>                  Sheraton Center Moderators – Shashi Murthy, PhD, Henry Zeringue, PhD</p>	<p><b>Biological Modification of Cardiovascular Biomaterials for Medical Devices: Translation from the Laboratory to the Clinic (Symposium)</b>                  Sheraton 2 Moderators – Frederick J. Schoen, MD, PhD, Naren Vyavahare, PhD</p>	<p><b>Drug/biomedical Device Combination Products II (General Session)</b>                  Sheraton 3 Moderators – Joel D. Bumgardner, PhD, Nicholas A. Peppas, ScD</p>	<p><b>Regenerative Medicine and Clinical Translation II (General Session)</b>                  Chicago 8 Moderators – Mark Van Dyke, PhD, James Yoo, MD, PhD</p>	<p><b>Translational Research in Nanomedicine: It Is Happening Now (Symposium)</b>                  Chicago 9 Moderators – Ed Ahn, PhD, Thomas Webster, PhD</p>	<p><b>Self-Assembling Biomaterials (Symposium)</b>                  Chicago 10 Moderators – Joel H. Collier, PhD, William L. Murphy, PhD</p>
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<p><b>1:30 pm</b> 168 <b>Human Mesenchymal Stem Cell Proliferation, Differentiation, and Mineralization on 3-dimensional Nano Hydroxyapatite-Polymeric Composite Scaffolds for Tissue Regeneration</b>                  Q. Lv, C. T. Laurencin;                  University of Virginia, Charlottesville, VA.</p>	<p>174 <b>The Application of Bioinspired Surface Treatments to Cardiovascular Biomaterials: <i>In Vitro</i> and <i>In Vivo</i> Considerations and Comparisons</b>                  B. Ratner;                  University of Washington, Seattle, WA.</p>	<p>180 <b>Analysis of the heparin coating of an EXCOR® Ventricular Assist Device after 855 days in a patient</b>                  J. Riesenfeld<sup>1</sup>, D. Ries<sup>2</sup>, R. Hetzer<sup>3</sup>;  <sup>1</sup>Carmeda AB, Upplands Väsby, SWEDEN,  <sup>2</sup>Berlin Heart AG, Berlin, GERMANY,  <sup>3</sup>Deutsches Herzzentrum Berlin, Berlin, GERMANY.</p>	<p>186 <b>Acellular matrices derived from embryonic stem cells for wound healing applications</b>                  R. Nair, S. Shukla, A. Ngangan, T. C. McDevitt;                  Georgia Tech / Emory, Atlanta, GA.</p>	<p>192 <b>Securing FDA Approval and Commercializing a "Nanomaterial Device"</b>                  E. Ahn;                  Angstrom Medica, Woburn, MA.</p>	<p>198 <b>Temperature Triggered Self-Assembly of Elastin Like Polypeptides</b>                  A. Chilkoti, M. Dreher, A. Simnick, A. MacKay;                  Duke University, Durham, NC.</p>
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<p><b>1:45 pm</b> 169 <b>Changes in cytoskeletal structure and viscoelastic properties of hMSC induced by nanotopography</b>                  E. K. F. Yim, E. M. Darling, S. Zauscher, F. Guilak, K. W. Leong;                  Duke University, Durham, NC.</p>	<p>181 <b>Histological Evaluation of a Calcium Phosphate / DBM Composite Cement in a Sheep Anterior Lumbar Interbody Fusion Model</b>                  A. D. Rosenberg<sup>1</sup>, A. Tofighi<sup>1</sup>, M. Aiolo<sup>1</sup>, L. Gilès de Pélichy<sup>1</sup>, D. Egan<sup>1</sup>, H. B. Seim, III<sup>2</sup>, A. S. Turner<sup>3</sup>;  <sup>1</sup>ETEX Corporation, Cambridge, MA,  <sup>2</sup>Veterinary Medical Center, Colorado State University, Fort Collins, CO.</p>	<p>187 <b>Immediate shape-retentive wound dressings formed in situ using hydrogel nanoparticle powders</b>                  J. V. St. John<sup>1</sup>, S. A. Brown<sup>2</sup>, B. C. Ponder<sup>1</sup>, L. Waller<sup>1</sup>, D. Noble<sup>3</sup>, D. A. Hefez<sup>4</sup>;  <sup>1</sup>ULURU Inc., Addison, TX, <sup>2</sup>University of Texas Southwestern Medical Center, Dallas, TX, <sup>3</sup>University of Texas Southwestern Medical Center, Dallas, TX.</p>	<p>188 <b>Novel composite scaffold for the engineering of hallow organs and tissues</b>                  D. Eberli, J. Yoo, A. Atala;                  Wake Forest University School of Medicine, Winston Salem, NC.</p>	<p>194 <b>A Nanoscale Membrane Oxygenator: Rationale, Design and Preliminary findings</b>                  R. C. Eberhart<sup>1</sup>, K. Ambravaneswaran<sup>2</sup>, B. Thomes<sup>3</sup>, J. Wright<sup>4</sup>, C. Chapman<sup>5</sup>, Z. Celik-Butler<sup>6</sup>, C. Chuong<sup>7</sup>, R. Billo<sup>8</sup>, R. Timmons<sup>9</sup>;  <sup>1</sup>University of Texas Southwestern Medical School, Dallas, TX, <sup>2</sup>University of Texas at Arlington, Arlington, TX.</p>	<p>199 <b>Dynamic hydrogels based on changes in nanoscale protein assembly</b>                  W. L. Murphy<sup>1</sup>, M. Mrksich<sup>2</sup>;  <sup>1</sup>University of Wisconsin, Madison, WI,  <sup>2</sup>University of Chicago, Chicago, IL.</p>
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<p><b>2:00 pm</b> 170 <b>Biodegradable Composite Scaffolds Produced by Selective Laser Sintering</b>                  M. Wang, W. Zhou, W. Cheung;                  The University of Hong Kong, Hong Kong, HONG KONG.</p>	<p>176 <b>A novel biomimetic peptide fluorosurfactant polymer engineered for endothelial cell-selective adhesion to ePTFE</b>                  C. C. Larsen<sup>1</sup>, F. Kilgman<sup>2</sup>, R. E. Marchant<sup>1</sup>, K. Kottke-Marchant<sup>2</sup>;  <sup>1</sup>Case Western Reserve University, Cleveland, OH, <sup>2</sup>Cleveland Clinic Foundation, Cleveland, OH.</p>	<p>182 <b>Antimicrobial Absorbable Multifilament Braided Sutures: A Preliminary Report</b>                  S. D. Nagatomi, P. L. Tate, D. E. Linden, M. A. Hucks, S. W. Shalaby;                  Poly-Med, Inc., Anderson, SC.</p>	<p>188 <b>Novel composite scaffold for the engineering of hallow organs and tissues</b>                  D. Eberli, J. Yoo, A. Atala;                  Wake Forest University School of Medicine, Winston Salem, NC.</p>	<p>194 <b>A Nanoscale Membrane Oxygenator: Rationale, Design and Preliminary findings</b>                  R. C. Eberhart<sup>1</sup>, K. Ambravaneswaran<sup>2</sup>, B. Thomes<sup>3</sup>, J. Wright<sup>4</sup>, C. Chapman<sup>5</sup>, Z. Celik-Butler<sup>6</sup>, C. Chuong<sup>7</sup>, R. Billo<sup>8</sup>, R. Timmons<sup>9</sup>;  <sup>1</sup>University of Texas Southwestern Medical School, Dallas, TX, <sup>2</sup>University of Texas at Arlington, Arlington, TX.</p>	<p>199 <b>Dynamic hydrogels based on changes in nanoscale protein assembly</b>                  W. L. Murphy<sup>1</sup>, M. Mrksich<sup>2</sup>;  <sup>1</sup>University of Wisconsin, Madison, WI,  <sup>2</sup>University of Chicago, Chicago, IL.</p>
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<p><b>2:15 pm</b> 171 <b>Microfabricated Polymer Scaffolds for Spatially Patterned Multi-lineage Differentiation of Stem Cells</b>                  G. Mapili, L. Nguyen, M. Kim, J. Rytlewski, Y. Lu, S. Chen, K. Roy;                  The University of Texas at Austin, Austin, TX.</p>	<p>177 <b>Increasing the rate of endothelial cell migration on RGD/PEG materials without compromising cell adhesion strength</b>                  D. L. Elbert, B. K. Wacker, E. A. Scott;                  Washington University, St. Louis, MO.</p>	<p>183 <b>Functionalization of Titania Nanotube Arrays for Therapeutic Drug Delivery</b>                  C. YAO, T. Webster, Jr.;                  Brown University, Providence, RI.</p>	<p>189 <b>Biocompatibility of Zn-Containing Sol-Gel Derived Glasses in a Murine Wound Model</b>                  D. B. Jaroch, L. K. Miller, A. M. Raehl, S. E. Gibbs, K. K. McKeown, J. Goldman, D. C. Clupper;                  Michigan Technological University, Houghton, MI.</p>	<p>195 <b><i>In Vitro</i> Evaluation of Biomimetic Nanofiber-Based Scaffolds for Rotator Cuff Repair</b>                  K. L. Moffat<sup>1</sup>, J. P. Spalazzi<sup>2</sup>, S. B. Doty<sup>3</sup>, W. N. Levine<sup>4</sup>, H. H. Lu<sup>5</sup>;  <sup>1</sup>Columbia University, New York, NY,  <sup>2</sup>Hospital for Special Surgery, New York, NY.</p>	<p>200 <b>Layer-by-layer Assembly of PEG-rich, Nano-thin, Conformal Coatings for Intraportal Islet Transplantation</b>                  J. T. Wilson<sup>1</sup>, W. Cui<sup>2</sup>, E. L. Chaikof<sup>3</sup>;  <sup>1</sup>Georgia Institute of Technology and Emory University, Atlanta, GA, <sup>2</sup>Emory University, Atlanta, GA.</p>
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2:30 pm

**172 Nanofibrous Membranes Consisting of Aligned Fibers and Multilayered Structures for Tissue Engineering Applications**  
**H. Tong, M. Wang;**  
The University of Hong Kong, Hong Kong, HONG KONG.

**178 Vascular Substitutes with Physiologic Compliance and Co-expression of Elastin and Collagen**  
**J. Gao, P. M. Crapo, A. E. Ensley, R. M. Nerem, Y. Wang;**  
Georgia Institute of Technology, Atlanta, GA.

**184 Primary Hepatocyte Culture on Polymeric Microsphere Scaffold with Human Hepatocyte Growth Factor Release**  
**X. Zhu, Y. Tong;**  
National University of Singapore, 4 Engineering Drive 4, SINGAPORE.

**190 Study of the in vivo degradation of polyurethanes 3D foams in the rat animal model**  
**S. Farè<sup>1</sup>, S. Bertoldi<sup>1</sup>, M. Moscatelli<sup>1</sup>, A. Addis<sup>1</sup>, M. Campagnol<sup>2</sup>, F. Vitari<sup>3</sup>, C. Domeneghini<sup>3</sup>, M. C. Tanzi<sup>1</sup>;**  
<sup>1</sup>Politecnico di Milano, MILANO, ITALY, <sup>2</sup>CRABCC University of Milano, MILANO, ITALY, <sup>3</sup>Dept VSTFS, University of Milano, MILANO, ITALY.

**196 Long term patency and transmural endothelialisation of small caliber microporous compliant vascular bypass grafts manufactured from poly(carbonate-urea) urethane incorporating polyhedral oligomeric silsesquioxane pendant nanocage within its hard segment in an ovine model**  
**S. Sarkar, G. Hamilton, A. M. Seifalian;**  
Royal Free and University College Medical School, London, UNITED KINGDOM.

**201 3-Dimensional Artificial Blood Vessel Architectures by Layer-by-Layer Technique**  
**M. Matsusaki, K. Kadowaki, M. Akashi;**  
Osaka University, Osaka, JAPAN.

2:45 pm

**173 Patterned Surface Immobilization of Vascular Endothelial Growth Factor to Promote Endothelial Cell Tubulogenesis**  
**J. E. Leslie, J. L. West;**  
Rice University, Houston, TX.

**179 Penta-Galloyl Glucose Stabilizes Elastin and Reduces Calcification in Bioprosthetic Heart Valves**  
**J. C. Isenburg<sup>1</sup>, A. Greer<sup>1</sup>, B. C. Starcher<sup>2</sup>, N. R. Vyavahare<sup>3</sup>, D. T. Simionescu<sup>4</sup>;**  
<sup>1</sup>Clemson University, Clemson, SC, <sup>2</sup>University of Texas Health Center at Tyler, Tyler, TX.

**185 Effects of a mixture of growth factors and serum proteins on human osteogenic cell cultures**  
**P. Tambasco de Oliveira;**  
University of Sao Paulo, Ribeirao Preto, BRAZIL.

**191 The Effects of Growth Factors on Embryonic Stem Cell Differentiation inside of Fibrin Scaffolds**  
**S. M. Willerth, S. E. Sakiyama-Elbert;**  
Washington University in St. Louis, Saint Louis, MO.

**197 A poly(butyl methacrylate-co-methacrylic acid) tissue engineering scaffold with proangiogenic potential in vivo**  
**Mark J. Butler, Michael V. Sefton.**  
Department of Chemical Engineering and Applied Chemistry, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON Canada

**202 Layer-by-layer films containing plasmid DNA and reducible TAT polypeptide**  
**J. L. Blacklock;**  
Wayne State University, Detroit, MI.



Concurrent Oral Abstract Presentations Session VI • Saturday, April 21, 2007 8:00 am – 10:00 am

	Advances In Biomaterials Science: A Symposium By The Leaders Of Biomaterials Sheraton Center Moderators – Anne E. Meyer, PhD, Michael V. Sefton, ScD	Surface Modification and Characterization of Biomaterials II (General Session) Sheraton 2 Moderators – Lara Gamble, PhD, Lakshmi Nair, PhD	Implant Pathology SIG and Dental Craniofacial SIG (General Session) Sheraton 3 Moderators – Janson Emmanuel, PhD, John L. Ricci, PhD	Biomimetics and Nanoscience: Advances in Protein/peptide-based Biomaterials (Symposium) Chicago 8 Moderators – Bingyun Li, PhD, Sidney Sit, PhD	Biomaterials and Microscale Technologies for Biomedical Applications III (General Session) Chicago 9 Moderators – Utkan Demirci, PhD, Hossein Hosseinkhani, PhD
8:00 am	203 Nanotechnology and Intelligent Response: What Have They Done for Biomaterials Lately? <b>N. A. Peppas</b> ; The University of Texas at Austin, Austin, TX.	209 Polyethylene glycol-based Microgel Coatings Reduce Leukocyte Adhesion In Vivo <b>A. W. Bridges</b> , N. Singh, K. L. Burns, J. E. Babensee, L. A. Lyon, A. J. Garcia; Georgia Institute of Technology, Atlanta, GA.	217 Integrin linked kinase production prevents anoikis in human mesenchymal stem cells <b>M. C. Tripodi</b> <sup>1</sup> , D. S. W. Benoit <sup>1</sup> , J. O. Blanchette <sup>2</sup> , S. J. Langer <sup>1</sup> , L. A. Leinwand <sup>1</sup> , K. S. Anseth <sup>1</sup> ; <sup>1</sup> University of Colorado at Boulder, Boulder, CO, <sup>2</sup> Howard Hughes Medical Institute, Boulder, CO.	224 Molecular Biomimetics: Genome-based Materials and Systems for Technology and Medicine <b>M. Sarikaya</b> ; University of Washington, Seattle, WA.	232 PDMS Collagen-GAG Networks with Microvasculature <b>S. Shaikh</b> , V. Janakiraman, H. Baskaran; Case Western Reserve University, Cleveland, OH.
8:15 am	204 Heart Valve Tissue Engineering and Regeneration: A Pathologist's Point of View <b>F. J. Schoen</b> ; Brigham and Women's Hospital and Harvard Medical School, Boston, MA.	210 Characterization of a Decorin Surface Coating for Reduction of Fibrous Encapsulation Around Implants <b>M. L. Sylvester</b> , B. D. Ratner; University of Washington, Seattle, WA	218 NUMBER OF PHAGOCYTOSED PARTICLES (DOSE) MORE THAN PARTICLE SIZE OR SURFACE AREA AFFECT THP-1 MONOCYTE REACTIVITY <b>A. Reddy</b> , M. S. Caicedo, I. Samee, J. J. Jacobs, N. J. Hallab; Rush University Medical Center, Chicago, IL.		233 A role of F-actin and RhoA-Rock signaling in nanotopography-induced cell regulation <b>E. K. F. Yim</b> , K. W. Leong; Duke University, Durham, NC.
8:30 am	Questions and Discussion	211 Micropatterned Interfacial Polymer Layers for Directing Cellular Response <b>N. M. Shah</b> , A. T. Metters; Clemson University, Clemson, SC.	219 Effect of a Fatty Acid Based Coated Mesh Material on Visceral Adhesion Formation and Tenacity <b>J. F. Ferraro</b> <sup>1</sup> , P. Martakos <sup>1</sup> , T. Karwoski <sup>1</sup> , S. K. Williams <sup>2</sup> , L. B. Kleinert <sup>3</sup> ; <sup>1</sup> Atrium Medical Corporation, Hudson, NH, <sup>2</sup> University of Arizona, Tucson, AZ.	226 Modification of 3D Agarose Gels with Biomimetic Ligands: Influences on Mesenchymal Progenitor Cells <b>J. T. Connelly</b> , T. A. Petrie, A. A. Garcia, M. E. Levenston; Georgia Institute of Technology, Atlanta, GA.	234 Regulation of In Vivo Angiogenesis by Heparin-controlled Dual Growth Factor Release from Hyaluronan Hydrogels <b>R. A. Peattie</b> <sup>1</sup> , P. W. Fuegy <sup>1</sup> , C. M. Riley <sup>1</sup> , S. Cai <sup>2</sup> , B. Yu <sup>2</sup> , R. J. Fisher <sup>3</sup> , M. A. Firpo <sup>2</sup> , X. Shu <sup>2</sup> , G. D. Prestwich <sup>2</sup> ; <sup>1</sup> Oregon State University, Corvallis, OR, <sup>2</sup> University of Utah, Salt Lake City, UT, <sup>3</sup> Massachusetts Institute of Technology, Cambridge, MA.
8:40 am	205 Blood-Material Interactions of Polyurethanes <b>S. L. Cooper</b> ; The Ohio State University, Columbus, OH.				
8:45 am		212 Versatile Gradient Substrates for 'Click' Biofunctionalization <b>N. D. Gallant</b> , K. A. Lavery, E. J. Amis, M. L. Becker; National Institute of Standards and Technology, Gaithersburg, MD.	220 The Effect of Chemically Crosslinking SIS-ECM Scaffold Materials on the Macrophage Phenotype <b>J. E. Valentin</b> , A. M. Stewart-Akers, A. Ravindra, S. F. Badylak; University of Pittsburgh, Pittsburgh, PA.	227 Template-Assembly of Collagen-Mimetic Peptides (CMPs) based on Collagen_1(I) 502-507 Ligand Binding Site <b>S. Khew, Y. Tong</b> ; National University of Singapore, 4 Engineering Drive 4, SINGAPORE.	235 Direct Fabrication by Manual Brushing of Suspended Microscale Fibers for Cell Culture Scaffolds <b>Scott M. Berry</b> <sup>1</sup> , Santosh Pabba <sup>1</sup> , Jessica L. Fernandes <sup>1</sup> , Jeremy M. Rathfon <sup>1</sup> , Khaled A. Aamer <sup>1</sup> , Gregory N. Tew <sup>1</sup> , Andrea S. Gobin <sup>2</sup> , Robert W. Cohn <sup>1</sup> , and Robert S. Keynton <sup>1,2</sup> Departments of Mechanical Engineering <sup>1</sup> , and Bioengineering <sup>2</sup> , and ElectroOptics Research Institute and Nanotechnology Center <sup>1</sup> , University of Louisville; Department of Polymer Science <sup>4</sup> , University of Massachusetts
8:55 am	206 Surgical Adhesion Prevention: Current Therapies and Beyond <b>A. J. Coury</b> ; Genzyme Corporation, Cambridge, MA.				

9:00 am		<p><b>213 The effect RGD ligand density on macrophage inflammatory and matrix remodeling response</b>  <b>A. S. Chung;</b>            University of Wisconsin-Madison, Madison, WI.</p>	<p><b>221 Tooth attachment in a Narwhal (<i>Monodon monoceros</i>) compared to a Human (<i>Homo sapien</i>)</b>  <b>S. P. Ho<sup>1</sup></b>, N. Eidelman<sup>2</sup>, F. C. Eichmiller<sup>3</sup>, N. T. Martin<sup>4</sup>, S. J. Marshall<sup>5</sup>, G. W. Marshall<sup>6</sup>;  <sup>1</sup>University of California San Francisco, San Francisco, CA, <sup>2</sup>National Institute of Standards and Technology, Gaithersburg, MD, <sup>3</sup>Delta Dental of Wisconsin, Stevens Point, WI, <sup>4</sup>Harvard University, Boston, MA.</p>	<p><b>228 Synthesis of Artificial Protein Nanopores via Metal-mediated Self-assembly</b>  <b>C. J. Reedy, M. A. Firestone;</b>            Argonne National Laboratory, Argonne, IL.</p>	<p><b>236 Spiral Structured Nanofibrous 3D Scaffolds for Bone Tissue Engineering</b>  <b>J. Wang, C. M. Valmikinathan, X. Yu;</b>            Stevens Institute of Technology, Hoboken, NJ.</p>
9:10 am	Questions and Discussion				
9:15 am		<p><b>214 Biofunctional Star PEG Coatings on 3 Dimensional Polyvinylidene fluoride Scaffolds for Specific Cell Adhesion</b>  <b>D. Klee, J. Heuts, J. Salber, J. Groll, M. Möller;</b>            RWTH Aachen University, Aachen, GERMANY.</p>	<p><b>222 Handling and mechanical properties of collagen-brushite composite</b>  <b>K. Balamurugan<sup>1</sup></b>, J. Barralet<sup>1</sup>, C. Doillon<sup>2</sup>, U. Gbureck<sup>3</sup>;  <sup>1</sup>McGill University, Montreal, PQ, CANADA, <sup>2</sup>Laval University, Quebec, PQ, CANADA, <sup>3</sup>University of Wurzburg, Wurzburg, GERMANY.</p>	<p><b>229 Integrin Specificity Modulates Implant Osseointegration: Functionalization of Stable Poly(PEGMA) Brush-Coated Ti Implants with FNIII7-10 and RGD</b>  <b>T. A. Petrie, J. E. Raynor, C. D. Reyes, K. L. Burns, D. M. Collard, A. J. Garcia;</b>            georgia institute of technology, atlanta, GA.</p>	<p><b>237 Self-Assembling Peptide Nanofiber Hydrogels for Inductive Tissue Engineering Applications: Functional Protein Release Kinetics, In-Scaffold Diffusion Mechanisms and Eluted Protein Structure</b>  <b>L. D. Unsworth<sup>1</sup></b>, S. Koutsopoulos<sup>2</sup>, Y. Nagai<sup>3</sup>, S. Zhang<sup>4</sup>;  <sup>1</sup>National Research Council (Canada), Edmonton, AB, CANADA, <sup>2</sup>Center for Biomedical Engineering, MIT, Cambridge, MA, <sup>3</sup>Center for Biomedical Engineering, Cambridge, MA.</p>
9:20 am	<p><b>207 Bioactive Ceramics and Glasses: Reactivity, Biological Effects and Tissue Engineering Use</b>  <b>P. Ducheyne;</b>            University of Pennsylvania, Philadelphia, PA.</p>				
9:30 am		<p><b>215 RGDC peptide immobilization on titanium nitride-coated Nitinol surface enhances osteoprogenitor cell attachment</b>  <b>G. Zorn<sup>1</sup></b>, R. Adadi<sup>2</sup>, I. Gotman<sup>1</sup>, E. Y. Gutmanas<sup>1</sup>, C. N. Sukenik<sup>3</sup>;  <sup>1</sup>Technion, Haifa, ISRAEL, <sup>2</sup>Bar-Ilan University, Ramat-Gan, ISRAEL.</p>	<p><b>223 Co-cultivation of oral keratinocytes and osteoblast-like cells on different carriers</b>  <b>R. Glaum<sup>1</sup></b>, M. Wiedmann-Al-Ahmad<sup>2</sup>, U. Huebner<sup>2</sup>, N-C. Gellrich<sup>3</sup>, R. Schmelzeisen<sup>3</sup>;  <sup>1</sup>Medical University of Hannover, Hannover, GERMANY, <sup>2</sup>University of Freiburg, Freiburg, GERMANY.</p>	<p><b>230 Response of Marrow Stromal Cells to Multi-Functional Peptide-Reinforced Cell-Adhesive Nanocomposite Scaffolds</b>  <b>E. Jabbari, A. S. Sarvestani, X. He;</b>            University of South Carolina, Columbia, SC.</p>	<p><b>238 Poly-lactic-co-glycolic acid with nanoscale topography influences murine mesenchymal stem cell function and differentiation</b>  <b>L. Smith, E. A. Nauman;</b>            Purdue University, West Lafayette, IN.</p>
9:35 am	<p><b>208 Challenges in Spinal Repair and Regeneration</b>  <b>A. J. T. Clemons;</b>            Nexgen Spine, Inc., Whippany, NJ.</p>				
9:45 am		<p><b>216 Covalent Attachment of Self-Assembled Peptide Amphiphile Nanofibers to Metallic Implant Surfaces</b>  <b>T. D. Sargeant<sup>1</sup></b>, S. I. Stupp<sup>1</sup>, M. S. Rao<sup>2</sup>, C-Y. Koh<sup>3</sup>;  <sup>1</sup>Northwestern University, Evanston, IL, <sup>2</sup>Morton Grove Pharmaceuticals, Morton Grove, IL.</p>	OPEN SLOT	<p><b>231 Modulus and Proteolytic Resistance of PEGylated Fibrinogen Hydrogel Biomaterials Affects 3-D Smooth Muscle Cell-Mediated Spreading and Remodeling</b>  <b>D. Seliktar, D. Dikovsky;</b>            Technion, Haifa, ISRAEL.</p>	<p><b>239 Synthesis and Characterization of Hydrogels Grown on Surfaces by ATRP</b>  <b>H. D Chirra, H. James. Z.;</b>            University of Kentucky, Lexington, KY.</p>
9:50 am	Questions and Discussion				

Concurrent Oral Abstract Presentations Session VII • Saturday, April 21, 2007 3:30 pm – 5:30 pm

	<b>Biomaterials and Microscale Technologies for Biomedical Applications IV (General Session)</b> Sheraton Center Moderators – Xinqiao Jia, PhD, Ali Khademhosseini, PhD	<b>Advances in Drug Delivery II (General Session)</b> Sheraton 2 Moderators – Thomas Dziubla, PhD, Steven R. Little, PhD	<b>Orthopedic SIG: Cell/Tissue Interactions (General Session)</b> Sheraton 3 Moderators – Manuela Gomes, CEng, MSc, Rui L. Reis, PhD	<b>Polysaccharide-Based Biomaterials II (General Session)</b> Chicago 8 Moderators – Eben Alsberg, PhD, Jennie B. Leach, PhD	<b>Controlled Interactions of Proteins and Peptides with Biomaterial Surfaces (Symposium)</b> Chicago 9 Moderators – Lara Gamble, PhD, Dave Puleo, PhD
3:30 pm	<b>240 Application of Electrospinning to Produce Hybrid Nanofibrous Scaffolds for Tissue Engineering</b> A. K. Moghe, B. S. Gupta, M. W. King; North Carolina State University, Raleigh 27695-8301, NC.	<b>248 Pulsatile Release of PTH for Osteoporosis Treatment</b> X. Liu, G. J. Pettway, L. K. McCauley, P. X. Ma; University of Michigan, Ann Arbor, MI.	<b>256 Self-assembled and Nanostructured Hydrogel Scaffolds as New Bone Substitutes</b> L. Zhang <sup>1</sup> , S. Ramsaywack <sup>2</sup> , H. Fenniri <sup>3</sup> , T. J. Webster <sup>4</sup> ; <sup>1</sup> Brown University, Providence, RI, <sup>2</sup> University of Alberta, Edmonton, AB, CANADA, <sup>3</sup> National Institute for Nanotechnology and University of Alberta, Edmonton, AB, CANADA.	<b>264 IGF-1-Induced Elastin Synthesis and Cross-linking by Vascular Smooth Muscle Cells is Mediated by HA-Fragments</b> C. Kothapalli, A. Ramamurthi; Clemson University, Charleston, SC.	<b>272 Recombinant Multimeric Integrin Ligands to Convey Integrin Specificity and Clustering</b> T. A. Petrie, A. J. Garcia; georgia institute of technology, atlanta, GA.
3:45 pm	<b>241 Fibrinolytic Surface by Immobilization of Lysine on Polyurethane through a PEG Spacer</b> H. Chen <sup>1</sup> , X. Hu <sup>1</sup> , D. Li <sup>1</sup> , Y. Zhang <sup>1</sup> , W. G. McClung <sup>2</sup> , J. L. Brash <sup>3</sup> ; <sup>1</sup> Wuhan University of Technology, Wuhan, CHINA, <sup>2</sup> McMaster University, Hamilton, ON, CANADA.	<b>249 Growth Hormone Release from pH-Sensitive Complexation Hydrogels</b> D. A. Carr, M. C. Boudes, O. Z. Fisher, N. A. Peppas; The University of Texas at Austin, Austin, TX.	<b>257 RGD Inhibits Osseointegration of Hydroxyapatite Implants</b> K. M. Hennessy, W. C. Clem, S. L. Bellis; University of Alabama at Birmingham, Birmingham, AL.	<b>265 Concomitant Delivery of Copper Nanoparticles and Hyaluronan Benefits Vascular Elastin Matrix Synthesis, Crosslinking and Fiber Formation</b> C. Kothapalli, A. Ramamurthi; Clemson University, Charleston, SC.	<b>273 Fibrin delivery of molecular variants of Synergy and RGD containing fibronectin domains that provide integrin-specific instructions to mesenchymal stem cells</b> M. Martino <sup>1</sup> , M. Mochizuki <sup>1</sup> , M. Smith <sup>2</sup> , S. A. Rempel <sup>3</sup> , J. A. Hubbell <sup>4</sup> , T. H. Barker <sup>5</sup> ; <sup>1</sup> Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, SWITZERLAND, <sup>2</sup> Swiss Federal Institute of Technology Zurich (ETHZ), Lausanne, SWITZERLAND, <sup>3</sup> Hermelin Brain Tumor Center, Henry Ford Hosp., Detroit, MI, <sup>4</sup> H. Coulter Dept. of Biomedical Engineering, Georgia Inst. of Technology, Atlanta, GA.
4:00 pm	<b>242 Surface Engineering in Microfluidic Devices for the Isolation of Smooth Muscle Cells and Endothelial Cells</b> S. K. Murthy <sup>1</sup> , B. Plouffe <sup>1</sup> , M. Radisic <sup>2</sup> ; <sup>1</sup> Northeastern University, Boston, MA, <sup>2</sup> University of Toronto, Toronto, ON, CANADA.	<b>250 Synthesis and Characterization of a Temperature- and pH-responsive Sol-gel Hydrogel Suitable for Drug Delivery</b> J. C. Garbern, A. S. Hoffman, P. S. Stayton; University of Washington, Seattle, WA.	<b>258 Microstructured Ti-6Al-4V Surface Improves Osseointegration: an in Vitro and in Vivo Study</b> Z. Schwartz <sup>1</sup> , G. Zhao <sup>2</sup> , P. Raz <sup>1</sup> , Y. Barak <sup>3</sup> , M. Tauber <sup>4</sup> , B. D. Boyan <sup>5</sup> ; <sup>1</sup> Hebrew University Hadassah, Jerusalem, ISRAEL, <sup>2</sup> Georgia Institute of Technology, Atlanta, GA, <sup>3</sup> Implant Inc., Jerusalem, ISRAEL, <sup>4</sup> Arkade Klinik, Breitungten, GERMANY.	<b>266 Recruitment of Endogenous Stem Cells for Tissue Repair</b> J. Zhao <sup>1</sup> , N. Zhang <sup>1</sup> , A. Scott <sup>2</sup> , G. D. Prestwich <sup>3</sup> , X. Wen <sup>4</sup> ; <sup>1</sup> Clemson University, Charleston, SC, <sup>2</sup> Glycosan BioSystems Inc., Salt Lake City, UT, <sup>3</sup> University of Utah, Salt Lake City, UT.	<b>274 Cytokine Expression from Monocytes/Macrophages response to Ti-particles and discs</b> D. H. Kim <sup>1</sup> , M. Novak <sup>1</sup> , J. Wilkins <sup>2</sup> , A. Sawyer <sup>2</sup> , W. M. Reichert <sup>3</sup> ; <sup>1</sup> Duke university, Durham, NC, <sup>2</sup> BD Technologies, RTP, NC.
4:15 pm	<b>243 Remodelling of an Endothelialized Modular Construct In Vivo</b> R. Gupta, M. V. Sefton; University of Toronto, Toronto, ON, CANADA.	<b>251 Affinity Hydrogels for Sustained Protein Delivery</b> C.-C. Lin, A. T. Metters; Clemson University, Clemson, SC.	<b>259 Polymer-Ceramic Composite Induces Osteogenesis of Human Mesenchymal Stem Cells</b> N. L. Leong, J. Jiang, N. N. Okoh, H. H. Lu; Columbia University, New York, NY.	<b>267 Chemically Modified Light-curable Chitosans with Enhanced Potential in Bone Tissue Engineering</b> Y. Qiu <sup>1</sup> , N. Zhang <sup>1</sup> , Q. kang <sup>2</sup> , Y. An <sup>2</sup> , X. Wen <sup>3</sup> ; <sup>1</sup> Clemson University, Charleston, SC, <sup>2</sup> Medical University of South Carolina, Charleston, SC.	<b>275 Molecular Dynamics Simulations of Peptide Interactions with a Poly-L-Lactic Acid Surface</b> C. P. O'Brien; Clemson University, Clemson, SC.

4:30 pm	<p><b>244 Multivalent Sonic Hedgehog as an Enhanced Potency Biomaterial Modification for Angiogenesis</b> S. T. Wall, K. Saha, D. V. Schaffer, k. E. Healy; UC Berkeley, Berkeley, CA.</p>	<p><b>252 Oligo(trimethylene carbonate) For Vascular Endothelial Growth Factor Delivery</b> L. Timbart, R. Chapanian, M. Tse, S. Pang, B. Amsden; Queen's University, Kingston, ON, CANADA.</p>	<p><b>260 Characterization of Aggrecan Retention in Fumarate-Based Hydrogels for Orthopaedic Tissue Engineering</b> K. S. Brink, J. J. Lim, J. D. Weaver, D. M. Doroski, J. S. Temenoff; Georgia Tech and Emory University, Atlanta, GA.</p>	<p><b>268 Immobilized Glycosaminoglycans Modulate Proliferation and Organization of Cultured Cholangiocytes</b> L. Chen, H. W. T. Matthew; Wayne State University, Detroit, MI.</p>	<p><b>276 pH Dependence of Albumin Spatial Distribution on a Patterned PS/PMMA Surface</b> L. Li<sup>1</sup>, J. L. Brash<sup>1</sup>, A. P. Hitchcock<sup>1</sup>, A. Scholl<sup>2</sup>, A. Doran<sup>2</sup>; <sup>1</sup>McMaster University, Hamilton, ON, CANADA, <sup>2</sup>Advanced Light Source, Berkeley, CA.</p>
4:45 pm	<p><b>245 Aligned poly(L-caprolactone) nanowire/fiber arrays: properties for drug delivery and control of cellular interactions</b> S. L. Tao, T. A. Desai; UCSF, San Francisco, CA.</p>	<p><b>253 Polyketal Copolymers: Acid Sensitive Biodegradable Polymers with Tunable Hydrolysis Rates for Drug Delivery</b> S. C. Yang, N. Murthy; Georgia Institute of Technology, Atlanta, GA.</p>	<p><b>261 Cellular Evaluation of Bone Morphogenetic Protein-Derived Oligopeptides as Candidate Biomolecules for Surface Modified Scaffolds in Bone Tissue Engineering</b> D. A. Lee<sup>1</sup>, C. T. Laurencin<sup>2</sup>; <sup>1</sup>Drexel University, Philadelphia, PA, <sup>2</sup>University of Virginia, Charlottesville, VA.</p>	<p><b>269 Introduction of Secondary and Tertiary Amines to Chitosan: Enhancing Delivery of Nucleic Acids</b> B. Ghosn, K. Roy, S. P. Kasturui, H. Abdul-Razzak; University of Texas at Austin, Austin, TX.</p>	<p><b>277 Comparison of Solvation-Effect Methods for the Simulation of Peptide-Hydrophobic Surface Interactions</b> R. A. Latour, Y. Sun, B. N. Domy; Clemson University, Clemson, SC.</p>
5:00 pm	<p><b>246 Protein Loading on Porous Hydroxyapatite/Poly(lactide-co-glycolide) Scaffolds for Bone Tissue Engineering</b> E. K. Cushnie, C. T. Laurencin; University of Virginia, Charlottesville, VA.</p>	<p><b>254 Modification of Protein with Polymer-Bisphosphonate Ligand to Increase Bone Affinity</b> S. Zhang, J. E. I. Wright, H. Uludag; University of Alberta, Edmonton, AB, CANADA.</p>	<p><b>262 Effect of rapidly resorbable calcium-alkali-orthophosphate bone substitute materials on osteogenesis and osteoblastic phenotype expression <i>in vivo</i></b> C. Knabe<sup>1</sup>, G. Berger<sup>2</sup>, R. Gildenhaar<sup>3</sup>, C. Koch<sup>1</sup>, S. Jonscher<sup>1</sup>, A. Rack<sup>1</sup>, H. Seligmann<sup>1</sup>, M. Stiller<sup>1</sup>; <sup>1</sup>Charite University Medical Center, Berlin, GERMANY, <sup>2</sup>Federal Institute for Materials Research and Testing, Berlin, GERMANY, <sup>3</sup>Helmholtz Research Center Karlsruhe, Karlsruhe, GERMANY.</p>	<p><b>270 Design of Polysaccharide Gel-Based Sensor to Quantify the Number of Receptor-Adhesion Ligand Bonds</b> H. Kong, N. Huebsch, D. Mooney; Harvard University, Cambridge, MA.</p>	<p><b>278 Protein Patterns at the Micro- and Nanoscale by Oxime Bond Formation</b> H. D. Maynard, K. L. Christman, R. M. Broyer, Z. P. Tolstyka, E. Schopf, Y. Chen; University of California Los Angeles, Los Angeles, CA.</p>
5:15 pm	<p><b>247 Simultaneous Deposition of Human Endothelial Cells and Materials for Fabrication of Vascular Channels</b> X. Cui, N. Flohr, T. Boland; Clemson University, Clemson, SC.</p>	<p><b>255 Analyzing Intratumoral Chemotherapeutic Drug Penetration in Ablated Tumors Using Finite Element Methods</b> R. B. Patel<sup>1</sup>, B. D. Weinberg<sup>1</sup>, J. Gao<sup>2</sup>, A. A. Exner<sup>1</sup>, G. M. Saidel<sup>1</sup>; <sup>1</sup>Case Western Reserve University, Cleveland, OH, <sup>2</sup>University of Texas Southwestern Medical Center, Dallas, TX.</p>	<p><b>263 <i>Ex Vivo</i> Gene Therapy in Combination with a Novel Tubular Sintered Microsphere Scaffold: The <i>In Vivo</i> Delivery of BMP-2 Producing Cells</b> M. D. Kofron<sup>1</sup>, J. Li<sup>1</sup>, K. Martin<sup>1</sup>, S. G. Kumbar<sup>1</sup>, A. Adeniran<sup>1</sup>, X. Wen<sup>1</sup>, C. T. Laurencin<sup>1</sup>; <sup>1</sup>University of Virginia, Charlottesville, VA, <sup>2</sup>Medical University of South Carolina, Charleston, SC, <sup>3</sup>University of Maryland, College Park, MD, <sup>4</sup>Clemson University, Clemson, SC.</p>	<p><b>271 Regulation of Osteogenic and Chondrogenic Differentiation of MSCs in Extracellular Matrix-Hydrogels</b> N. S. Hwang, S. Varghese, H. Li, A. Canver, J. Ellisseeff; Johns Hopkins University, Baltimore, MD.</p>	<p><b>279 Investigation of Surface Hydrolysis in Thin Organic Films Using Time-of-Flight Secondary Ion Mass Spectrometry and Principal Component Analysis</b> F. Cheng<sup>1</sup>, L. J. Gamble<sup>2</sup>, D. W. Grainger<sup>3</sup>, D. G. Castner<sup>4</sup>; <sup>1</sup>National ESCA and Surface Analysis Center For Biomedical Problems, Department of Chemical Engineering, University of Washington, Seattle, WA, <sup>2</sup>National ESCA and Surface Analysis Center For Biomedical Problems, Departments of Chemical Engineering and Bioengineering, University of Washington, Seattle, WA, <sup>3</sup>Department of Pharmaceutics and Pharmaceutical Chemistry, University of Utah, Salt Lake City, UT.</p>