Posters

What is the State of the Stent?

99. Guide Catheter Surface Treatment to Minimize Endovascular Trauma H. Rangwala, **A. E. Meyer**, S. Rudin, R. E. Baier; University at Buffalo, Buffalo, NY.

100. ExoSeal®: A Novel Bioabsorbable Vascular Closure Device - **V. Dave**, J. Dooley, C. Chen, D. Donohoe; Cordis Corporation, Warren, NJ.

101. Fluorinated diamond-like carbon as a potential coating for re-endothelialization of intravascular stent platform - **S. Nagashima**; Keio University, Yokohama, JAPAN.

102. Site-Specific Intimal Wall Forces During Guide and Stent Catheter Navigation - **R. E. Baier**, A. Sengupta, A. E. Meyer, S. Schafer, K. R. Hoffmann, T. Kesavadas; University at Buffalo, Buffalo, NY.

Ocular Comfort and Drug Delivery

103. Withdrawn

104. Polymeric STAR Systems for an Artificial Cornea to Treat Global Blindness - **S. Garty**, R. Shirakawa, B. D. Ratner, T. T. Shen; University of Washington, Seattle, WA.

105. Preparation and Characteristics of Novel Porous PLGA Microsphere by Gas Foaming Method Using Hydrogen Peroxide - **J. S. Son**[1], S. Oh[2], K. Park[1], D. K. Han[1]; [1]Biomaterials Research Center, Korea Institute of Science and Technology, Seoul, REPUBLIC OF KOREA, [2]The University of Texas at San Antonio, San Antonio, TX.

Inflammation and Immunology

106. Macrophage Phenotypic Stability During Extended Culture - **L. M. Chamberlain**[1], M. Gonzalez-Juarrero[2], D. W. Grainger[1]; [1]University of Utah, Salt Lake City, UT, [2]Colorado State University, Fort Collins, CO, CO.

107. The role of substrate rigidity in epithelial to mesenchymal transitions (EMT); implications in fibrotic responses m- **A. E. Carson**, J. Chen, T. H. Barker; Georgia Institute of Technology, Atlanta, GA.

108. 3-D Scaffolds for Tissue Engineering with Control of Dendritic Cell Phenotype - **J. Park**, J. Babensee; Georgia Institute of Technology, Atlanta, GA.

109. Multi-Functional Bioscaffolds to Modulate Local Inflammation **L. Sun**; Carnegie Mellon University, Pittsburgh, PA.

Spine and Nerve Repair

110. Development of Smart Tissue Adhesive for Treatment of Intra-operative Bladder Injury - **J. Nagatomi**, E. Cho, J. Lee, K. Webb; Clemson University, Clemson, SC.

111. Bioprinting Methods to Create an Elastic Lamellar Scaffold for Intervertebral Disc Regeneration - **B. R. Whatley**, Y. Qiu, X. Wen; Clemson- MUSC, Charleston, SC.

112. A New Nitrogen Plasma Implanted Titanium Surface To Inhibit Orthopaedic Related Infection - K. Y. Leung[1], R. Kao[1], P. Chu[2], K. Cheung[1], K. Luk[1], **K. Yeung**[2]; [1]The University of Hong Kong, Pokfulam, HONG KONG, [2]City University of Hong Kong, Kowloon Tong, HONG KONG.

113. Optimization of novel two-solution based bone cements for vertebroplasty and kyphoplasty applications - **D. B. C. Rodrigues**, J. M. Hasenwinkel; Syracuse University, Syracuse, NY.

114. Novel Cell Encapsulation through Co-axial Electrospinning: Mimicking the Natural Tissue - **R. A. Pareta**, T. J. Webster; BROWN UNIVERSITY, PROVIDENCE, RI.

Current and Future Strategies for Repair and Replacement of Hard Tissues

115. A Prolonged Two-Phase Peptide Release Achieved Using Amino-Silane Chemistry Functionalization and Nanocrystalline Hydroxyapatite in a Degradable Polymer Composite - **H. Liu**, T. J. Webster; Brown University, Providence, RI.

116. Composite Materials Consisting of Hydroxyapatite Impregnated Collagen Matrices Affect Osteoblast Behavior - **B. L. Rogers**[1], Y. Li[2], S. Jee[2]; [1]Georgia Institute of Technology, Atlanta, GA, [2]University of Florida, Gainesville, FL.

117. In vitro intracellular signaling studies of calcium phosphate bone grafting materials predict in vivo tissue growth - **C. Knabe**[1], M. Stiller[1], G. Berger[2], R. Gildenhaar[2], J. Kim[3], I. M. Shapiro[4], P. Ducheyne[3]; [1]Charite University Medical Center, Berlin, GERMANY, [2]Federal Institute for Materials Research and Testing, Berlin, GERMANY, [3]University of Pennsylvania, Philadelphia, PA, [4]Thomas Jefferson University, Philadelphia, PA.

118. Use of novel fibrin-binding peptides as a delivery vehicle for proteins into fibrin matrices - **A. Soon**, S. Stabenfeldt, T. H. Barker; Georgia Institute of Technology, Atlanta, GA.

119. 5kDa Component of Enamel Matrix Derivative Possesses Osteogenic Properties - **R. Olivares-Navarrete**[1], R. A. Chaudhri[1], M. Dard[2], M. Wieland[2], B. D. Boyan[1], Z. Schwartz[1]; [1]Georgia Institute of Technology, Atlanta, GA, [2]institut Straumann AG, Basel, Switzerland.

120. Simple Application of Fibronectin-Mimetic Coating Enhances Implant Osseointegration - **T. A. Petrie**, C. D. Reyes, K. L. Burns, A. J. Garcia; Georgia Institute of Technology, Atlanta, GA.

121. Biodegradable Composite Scaffolds for Directing Osteogenesis and Bone Formation - **K. Leach**, J. He, D. Genetos; University of California, Davis, Davis, CA.

122. A Novel Osteostimulatory Resorbable Composite for Orthopaedic Fixation Applications - **J. J. Cooper**[1], J. A. Hunt[2], A. T. Mackie[1]; [1]Biocomposites Ltd, Staffordshire, UNITED KINGDOM, [2]UKCTE University of Liverpool, Liverpool, UNITED KINGDOM.

123. Mechanically-dynamic polymer nanocomposites for intracortical microelectrode substrates - **J. R. Capadona**[1], K. Shanmuganathan[2], J. P. Harris[2], D. J. Tyler[2], S. J. Rowan[2], C. Weder[2]; [1]L. Stokes Cleveland VAMC, Cleveland, OH, [2]Case Western Reserve University, Cleveland, OH.

124. Modulation of Osteogenic and vasculogenic Differentiation of Stromal Cells in a Collagen Scaffold - J. A. Henderson, X. He, **E. Jabbari**; University of South Carolina, Columbia, SC.

125. Novel Bilayered Polymeric Microspheres for Bone Tissue Engineering Applications: Effects of Alginate Coating on Release Kinetics - **Y. M. Khan**, B. Corgiat, K. Ondesko; University of Virginia, Charlottesville, VA.

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126. New Generation Calcium Phosphate Bone Cement - **A. Tofighi**; ETEX Corporation, Cambridge, MA.

127. Enhanced Injectability of Self-Setting Calcium Phosphate Cements **A. D. Rosenberg**, R. Palazzolo, A. Tofighi, J. Chang; ETEX Corporation, Cambridge, MA.

128. Human bone response to CS/PLLA composite - **S. S. Mamidwar**[1], R. Horowitz[2], J. Ricci[3], H. Alexander[1]; [1]Orthogen LLC, Springfield, NJ, [2]Private Practice, Scarsdale, NY, [3]New York University College of Dentistry, New York, NY.

129. Calcium Phosphate-Containing Scaffolds Stimulate Early Stage Osteogenic Differentiation - **J. R. Popp**[1], B. J. Love[2], K. E. Laflin[1], A. S. Goldstein[1]; [1]Virginia Tech, Blacksburg, VA, [2]University of Michigan, Ann Arbor, MI.

130. A novel method to fabricate unidirectional porous hydroxyapatite body using ethanol bubble in a viscous slurry - **B-T. Lee**[1], S. Islam[1], Y-K. Min[2], H-Y. Song[3]; [1]Dept. of Biomedical Engg. & Materials, Soonchunhyang Univerisity, Cheonan, South Korea, Cheonan, Republic of Korea, [2]Dept. of Physiology, Soonchunhyang Univerisity, Cheonan, South Korea, Cheonan, Republic of Korea, [3]Dept. of Microbiology, Soonchunhyang Univerisity, Cheonan, South Korea, Cheonan, Republic of Korea.

131. Canine Mandibular Augmentation Using Autologous Bone Marrow Stromal Cells - **M. H. Mankani**; UCSF, San Francisco, CA.

132. Fabrication of Calcium Phosphate-Calcium Sulfate Injectable Bone Substitute Using Chitosan and Citric Acid - **H-Y. Song**[1], A. H. E. Rahman[2], M. A. Jyoti[1], J-Y. Mang[3], B. Lee[2]; [1]Department of Microbiology, School of Medicine, Soonchunhyang University, cheonan, Republic of Korea, [2]Department of Biomedical Engineering & Materials, Soonchunhyang University, cheonan, Republic of Korea, [3]Department of Chemistry, Soonchunhyang University, cheonan, Republic of Korea.

133. Surface Characterization of Co-Cr Alloy L605 Electropolishing in 15 vol % Phosphoric Acid - **H. Aihara**, G. S. Selvaduray; San Jose State University, San Jose, CA.

134. Nano-mechanical Characterization of Sea Urchin Teeth: A Comparison Study with Human Teeth - **S. A. Chowdhury**, A. J. Siccardi, S. A. Watts, Y. K. Vohra; University of Alabama at Birmingham, Birmingham, AL.

135. Reverse thermo-responsive polymers for *in situ* generated implants **D. Cohn**, A. Sosnik, S. Garty; The Hebrew University Of Jerusalem, Jerusalem, ISRAEL.

136. Direct Observation of the Formation of Collagen at Dental Implant Surfaces - **L. A. Giannuzzi**[1], D. Phifer[1], N. J. Giannuzzi[2], M. J. Capuano[3], R. P. Gursky[1], L. Pullan[1]; [1]FEI Company, Hillsboro, OR, [2]private practice, Miller Place, NY, [3]Long Island Oral and Maxillofacial Surgery, Selden, NY.

137. Structural implant concept for buco-maxilo-facial applications **T. H. Samed e Sousa**, C. A. Fortulan, Sr., E. A. Santos, B. M. Purquerio, Sr.; University of Sao Paulo, São Carlos, BRAZIL.

Imaging and Therapeutics

138. Specificity of multivalent constructs is concentration dependent E. V. Rosca, **M. R. Caplan**; Arizona State University, Tempe, AZ.

139. Ellagic acid-chitosan based local delivery system has an anti-tumor effect on brain cancer both *in vitro* and *in vivo*. - **S. Kim**, M. Gaber, Y. Yang; University of Tennessee Health Science Center, Memphis, TN.

140. Polyketals: a New Drug Delivery Platform for Treating Acute Liver Failure - **S. C. Yang**[1], M. Bhide[2], I. N. Crispe[2], R. H. Pierce[2], N. Murthy[1]; [1]Georgia Institute of Technology, Atlanta, GA, [2]University of Rochester, Rochester, NY.

141. Enhanced Mineralization and Vessel Stabilization of a Cranial Defect by Activation of Specific Sphingosine-1-Phosphate Receptors Using Polymer Encapsulated Small Molecule Delivery - **C. E. Petrie Aronin**, L. S. Sefcik, T. L. Macdonald, K. R. Lynch, R. C. Ogle, E. A. Botchwey; University of Virginia, Charlottesville, VA.

142. Polymersomes: Versatile Vesicles for Imaging and Drug Delivery **D. H. Levine**[1], P. P. Ghoroghchian[1], J. Freudenberg[1], G. Zhang[1], G. Li[1], K. P. Davis[2], F. S. Bates[2], M. J. Therien[1], R. Murali[1], D. A. Hammer[1]; [1]University of Pennsylvania, Philadelphia, PA, [2]University of Minnesota, Minneapolis, MN.

143. Biodegradable Self-Assembled Nanoparticles for Targeted Delivery of Paclitaxel to Tumor Cells - X. He, A. E. Mercado, W. Xu, **E. Jabbari**; University of South Carolina, Columbia, SC.

144. The Kinetics of Particle Release from DNA-Linked Multiparticle Drug Delivery Vehicles - **C. K. Tison**, V. T. Milam; Georgia Institute of Technology, Atlanta, GA.

145. A Comprehensive Approach for Real-time Drug Release Imaging from Polymeric Coatings - **J. Foley**[1], R. Hoerr[1], M. Matuszewski[1], J. Puskas[2], G. Haugstad[3], J. Dong[3], C. Frethem[3]; [1]Nanocopoeia, Inc., St. Paul, MN, [2]University of Akron, Akron, OH, [3]University of Minnesota Characterization Facility, Minneapolis, MN.

146. Nanodevices for Treatment of Hyperlipidemia. - **V. Reukov**, V. Maximov, A. Vertegel; Clemson University, Clemson, SC.

147. Preliminary Investigation of Lyophilization To Improve Drug Delivery For Chitosan-Calcium Phosphate Bone Scaffold Construct - **B. T. Reves**[1], J. D. Bumgardner[1], J. Cole[1], Y. Yang[2], W. O. Haggard[1]; [1]University of Memphis, Memphis, TN, [2]University of Tennesse Health Science Center, Memphis, TN.

148. Design of a Tissue Engineering System to Influence and Quantify Oxygen Gradients - **E. F. Bland**, K. J. L. Burg; Clemson University, Clemson, SC.

149. Sustained In Situ Delivery of rhBMP-2 by Conjugation to Novel Biodegradable Nanoparticles - A. E. Mercado, X. He, **E. Jabbari**; University of South Carolina, Columbia, SC.

150. An arginine-based polycation/heparin matrix for the controlled delivery of growth factors - **B. J. Zern**, A. Nguyen, Y. Wang; Georgia Institute of Technology, Atlanta, GA.

151. Translational Research in Expansile Devices for Aneurysm Embolization - **H. Plenk, Jr.**[1], G. M. Cruise[2]; [1]Medical Univ.of Vienna, Vienna, AUSTRIA, [2]MicroVention Terumo Inc., Aliso Viejo, CA.

152. Control of Macromolecular Drugs Delivery Using Polysaccharide Microgels - **J. Schmidt**[1], A. Virdi[2], D. Sumner[2], H. Kong[1]; [1]University of Illinois, Urbana, IL, [2]Rush Medical College, Chicago, IL.

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153. Functionalized Biodegradable Triclosan Macromers for Controlled Release Applications - **R. S. Bezwada**; Bezwada Biomedical, LLC, Hillsborough, NJ.

Musculoskeletal Applications

154. Keratin Biomaterials Activate Regenerative Cells and Promote Peripheral Nerve Regeneration at Early and Late Stages in a Mouse Model **P. Sierpinski**, J. Garrett, J. Ma, D. Klorig, T. Smith, A. Atala, L. Koman, M. Van Dyke; Wake Forest University, Winston-Salem, NC.

155. Synthesis and Characterization of Chondroitin Sulfate Methacrylamide Micelles - **J. J. Lim**, T. M. Hammoudi, J. S. Temenoff; Georgia Institute of Technology and Emory University, Atlanta, GA.

156. Determination of Adhesion Strength of Discrete Nanocrystalline HA Deposition Using Atomic Force Microscopy - **G. GUPTA**[1], P. Gubbi[2], G. Shekhawat[3]; [1]Biomet, Inc., Warsaw, IN, [2]Biomet 3i, Palm Beach Gardens, FL, [3]Northwestern University, Evanston, IL.

157. BoneMaster™ HA: Nanocrystalline Hydroxyapatite Coating for Metallic Orthopedic Implants - **G. GUPTA**; Biomet, Inc., Warsaw, IN.

158. Diamond-on-Diamond Hip Simulator Study with Distraction **M. G. Naylor**[1], D. W. Schroeder[1], J. K. Taylor[2], S. DesPres[2], B. J. Pope[2]; [1]Biomet, Inc., Warsaw, IN, [2]Dimicron, Orem, UT.

159. Long-Term Bone Remodeling Around Uncemented Proximally Porous Coated Femoral Stems: Comparison to Un-implanted Contralateral Side **G. Paleskar**, L. C. Jones, J-W. Bae, M. W. Hungerford, D. S. Hungerford, H. S. Khanuja; Johns Hopkins University, Baltimore, MD.

160. Bone Marrow Regeneration following Tibial Marrow Ablation in Rats is Age Dependent - **M. Fisher**, R. Guldberg, Z. Schwartz, B. D. Boyan; Georgia Institute of Technology, Atlanta, GA.

161. Release and Biopotency of Recombinant Human Platelet-Derived Growth Factor-BB Combined with a Collagen Matrix for Rotator Cuff Repair - **Y. Liu**[1], C. S. Young[1], J. C. Nickols[1], V. Kery[1], S. Goldman[2], M. Richter[2], M. R. Wells[3], C. E. Hart[1]; [1]BioMimetic Therapeutics, Inc, Franklin, TN, [2]Kensey Nash Corporation, Exton, PA, [3]Middle Tennessee State University, Murfreesboro, TN.

162. Determining an optimal medial-lateral resection angle for varus patients undergoing a total knee arthroplasty - **M. Aanstoos**[1], D. F. Scott[2], R. D. Bloebaum[3]; [1]University of Utah, Salt Lake City, UT, [2]Spokane Joint Replacement Center, Spokane, WA, [3]VA Medical Center SLC, Salt Lake City, UT.

163. Fluid Shear Stress Affects Differentiation of Growth Plate Chondrocytes - **T. A. Denison**, M. Doroudi, Z. Schwartz, B. D. Boyan; Georgia Institute of Technology, Atlanta, GA.

164. Evidence-based rational for the use of a novel biological scaffold in tendon and ligament repairs - **J. Brunelle**, G. Ritter, A. Ray, T. Sander, C. Nataraj; Pegasus Biologics Inc., Irvine, CA.

165. Hydrophilic Soft-tissue Replacements - **D. N. Ku**; SaluMedica, LLC, Atlanta, GA.

Biomaterials for Nanomedicine: From Bench to Bed

166. Development of a Novel Point-of-Care Wound Diagnostic Device using a Pigmented Thin-Film Substrate - **J. I. Azeke**, A. Ferrara, G. Schultz, O. Moloye, A. Maico, C. Batich; University of Florida, Gainesville, FL.

167. Influence of chemical treatement of electrospun naonofibers on protein adsorption and delivery - **D. S. Katti**, R. Vasita; Indian Institute of Technology Kanpur, Kanpur, INDIA.

168. High Resolution Inkjet Printing as a Tool for Creating Tissue Test Systems - **C. A. Parzel**, T. Burg, R. Groff, M. Hill, B. Stripe, T. Boland, K. Burg; Clemson University, Clemson, SC.

169. Withdrawn

170. Parallel Synthesis of Peptidic Dendrimers as Macromolecular Host for Enantioselective catalysis with the PSW1100 - **J. Schroer**; Chemspeed Technologies, NJ.

171. Fabrication of Nano Crystalline Hydroxyapatite-Polymer Composite **N. Meenakshisundaram**, M. Rajkumar, V. Rajendran; K.S.Rangasamy College of Technology, Tiruchengode Namakkaldt. Tamil Nadu, India.

Cell Interfacing Technologies

172. Agarose Microgels for Protein Delivery within Embryoid Body Microenvironments - **A. M. Bratt-Leal**, R. Carpenedo, T. McDevitt; Georgia Institute of Technology, Atlanta, GA.

173. Nanoscale Patterning of Active Adhesion Proteins - **S. Coyer**, A. García; Georgia Institute of Technology, Atlanta, GA.

174. Enhanced Mesenchymal Stem Cell Response on Biodegradable Poly(-Caprolactone) Nanowires for Applications in Bone Tissue Engineering - J. R. Porter**, K. C. Popat**; Colorado State Univeristy, Ft. Collins, CO.

175. Phthalimide Neovascular Factor 1 (PNF1) Modulates Endothelial MT1-MMP Activity - **K. A. Wieghaus**, E. P. Gianchandani, J. A. Papin, E. A. Botchwey; University of Virginia, Charlottesville, VA.

176. Phospholipase D Induced Differentiation in MG63 Osteoblast-like Cells in Response to Surface Energy Involves Protein Kinase C **M. Fang**[1], M. Wieland[2], B. D. Boyan[1], Z. Schwartz[1]; [1]Georgia Institute of Technology, Atlanta, GA, [2]Institut Straumann AG, Basel, SWITZERLAND.

177. Chitosan improves the in vivo biological response to soy-based biomaterials - **A. P. Marques**[1], T. C. Santos[1], R. M. P. da Silva[1], S. S. Silva[1], J. M. Oliveira[1], M. van Griensven[2], J. F. Mano[1], H. Redl[2], R. L. Reis[1]; [1]3B's Research Group, Braga, PORTUGAL, [2]Ludwig Boltzmann Institute, Vienna, AUSTRIA.

178. Preliminary Comparison of Titanium Mesh and Dacron Cuffs in Subcutaneous and Percutaneous Rabbit Models - **K. A. Chapman**[1], K. N. Richmond[2], L. L. Kunz[3], C. Mayton[4], A. D. Janis[1]; [1]DermaPort, Santa Clarita, CA, [2]BioDevelopment Associates LLC, Mountlake Terrace, WA, [3]BioGenetics Laboratories PS, Whidbey Island, WA, [4]Wasatch Histo Consultants, Winnemucca, NV.

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179. Withdrawn

180. The role of substrate stiffness on stem cell differentiation into osteogenic cells - **X. Li**[1], A. McClary[2], N. Zhang[3], A. Scott[4], G. D. Prestwich[5], X. Wen[3]; [1]Department of Bioengingeering, Clemson University, Charleston, SC, [2]South Carolina Governor School of Mathematics and Science, Orangeburg, SC, [3]Department of Bioengineering, Clemson University, Charleston, SC, [4]Glycosan BioSystems, Inc., Salt Lake City, UT, [5]Department of Medicinal Chemistry, University of Utah, Salt Lake City, UT.

181. Human Astrocytoma Cells Are Differentially Susceptible to the Cytotoxic Effects of Metal Oxide Nanoparticles - **J. C. K. Lai**; Idaho State University College of Pharmacy, Pocatello, ID.

182. Mechanical and Biochemical Cues for Adipose Stem Cell Differentiation into Heart Valve Interstitial Cells - **R. S. Stowers**, A. Simionescu, D. T. SIMIONESCU; Clemson University, Clemson, SC.

183. Bone marrow stromal cell function on hybrid microparticles **A. Bhat**, A. C. Jayasuriya; University of Toledo, Toledo, OH.

184. Quantifying Biofilm-Surface Interactions Using Quartz Crystal Microbalance with Dissipation - **M. A. Poggi**[1], H. Uddenberg[2]; [1]Q-Sense Inc, Geln Burnie, MD, [2]Q-Sense AB, Goteborg, SWEDEN.

185. Differential Effects of Surfactants on DNA and Protein Transport through a Semipermeable Membrane - **S. W. Leung**, J. C. K. Lai, C. K. Daniels, C. S. Bartolin; Idaho State U, Pocatello, ID.

Tissue Engineering Strategies

186. Enrichment of Adipose-Derived Stem Cells - **J. J. Lazin**, C. Erdman, J. Chen, R. Olivares-Navarette, H. R. Moyer, B. D. Boyan, Z. Schwartz; Georgia Institute of Technology, Atlanta, GA.

187. Comparison between Static and Rotational Culture on Chondrocyte/Silk Fibroin-based Scaffolds - **Y. Wang**[1], C. Lee[1], A. Motta[2], E. Bella[2], C. Migliaresi[2], Z. Schwartz[1], B. Boyan[1]; [1]Department of Biomedical Engineering and Institute of Bioengineering and Bioscience, Georgia Institute of Technology, Atlanta, GA, [2]Department of Materials Engineering and Industrial Technologies, University of Trento, Via Mesiano, ITALY.

188. Development of a Composite Scaffolding System for Vascular Graft Applications - **S. Lee**, J. Liu, S. Oh, S. Soker, A. Atala, J. J. Yoo; Wake Forest Institute for Regenerative Medicine, Winston-Salem, NC.

189. Mechano-morphological Properties of Electrospun Micro/Nano-fibrous Vascular Scaffold of Protein/Polyglyconate Blends by Carbodiimide **X. Zhang**, V. Thomas, Y. K. Vohra; University of Alabamat at Birmingham, Birmingham, AL.

190. *In Vitro* Expanded Living Skin Matrices for Reconstructive Procedures **M. R. Ladd**, S. Lee, A. A. Atala, J. J. Yoo; Wake Forest Institute for Regenerative Medicine, Winston-Salem, NC.

191. Scale up and optimization of hybrid microparticles for bone regeneration - **A. C. Jayasuriya**, A. Bhat; University of Toledo, Toledo, OH.

192. Human Vascular Smooth Muscle Cell Calcification on Poly-lactic Acid 2D Films - **B. Zhu**[1], S. R. Bailey[2], C. M. Agrawal[1]; [1]The University of Texas at San Antonio, San Antonio, TX, [2]The University of Texas Health Science Center at San Antonio, San Antonio, TX.

193. Modeling Oxygen Transport in Modular Tissue Engineering **L. E. Corstorphine**, M. V. Sefton; University of Toronto, Toronto, ON, CANADA.

194. Biocompatibility of PGG-Stabilized Collagen Scaffolds used for Heart Valve Tissue Engineering - **M. E. Tedder**, D. T. Simionescu; Clemson University, Clemson, SC.

195. Cell recruitment strategies for in vivo vascular tissue engineering **A. A. Kurane**, N. Vyavahare; Clemson University, Clemson, SC.

196. Numerical Modeling and Cell Adhesion of a Tissue Engineered Loop of Henle Device - **J. L. Charest**; Draper Laboratory, Cambridge, MA.

197. Development of an In Vitro Model for Skin Substitutes with Endothelialized Microvasculature - **W-H. Liang**[1], V. Janakiraman[2], F. Berthiaume[2], H. Baskaran[1]; [1]Case Western Reserve University, Cleveland, OH, [2]Massachusetts General Hospital, Harvard Medical School and Shriners Burns Hospital, Boston, MA.

198. Effect of permeability and pore size on mechanical performance of hydroxyapatite scaffolds post in vitro culture - **T. Guda**, M. Appleford, J. Son, S. Oh, J. L. Ong; University of Texas at San Antonio, San Antonio, TX.

199. Concentrated Plasma as a Carrier for Stem Cell Delivery **J. E. Woodell-May**[1], B. Han[2], J. Martin[1], Z. Welch[1], M. Swift[1]; [1]Biomet, Inc., Warsaw, IN, [2]University of Southern California, Los Angeles, CA.

200. Characteristics of Heparin-functionalized Porous PLGA Scaffold for Tissue Regeneration - **J. S. Son**[1], S. Oh[2], K. Park[1], D. K. Han[1]; [1]Biomaterials Research Center, Korea Institute of Science and Technology, Seoul, Republic of Korea, [2]The University of Texas at San Antonio, San Antonio, TX.

201. Tissue-Engineered Human Embryonic Extracellular Matrix for Therapeutic Device Applications - **R. S. Kellar**, F. Zeigler, E. Pinney, G. Naughton; Histogen, Inc., San Diego, CA.

202. Alterations in metabolic activity of human umbilical vein endothelial cells cultured on gas-plasma treated poly(d,l-lactic) acid scaffolds **A. R. Shah**[1], P. D. Bowman[2], J. C. Wenke[2], C. M. Agrawal[1]; [1]University of Texas at San Antonio, San Antonio, TX, [2]Institute of Surgical Research, San Antonio, TX.

203. A collagen/vascular smooth muscle cells (SMCs) incorporating elastic scaffold for tissue-engineered vascular graft - **I. Park**; Korea Institute of Science and Technology, Seoul, Republic Of Korea.

204. Porous Elastin Scaffolds with Controlled Degradation Rate for Vascular Grafts - **T-H. Chuang**, D. Simionescu; Clemson University, Clemson, SC.

205. Pulsatile Bioreactor for Conditioning Tissue Engineered Heart Valves **L. N. Sierad**, A. Simionescu, D. T. Simionescu; Clemson University, Clemson, SC.

206. Alginate Microencapsulation Technology for Percutaneous Delivery of Human Adipose Derived Stem Cells (ADSCs) - **H. R. Moyer**[1], J. K. Williams[2], Z. Schwartz[3], B. D. Boyan[3]; [1]Emory University, Atlanta, GA, [2]Children's Healthcare of Atlanta, Atlanta, GA, [3]Georgia Institute of Technology, Atlanta, GA.

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207. Effect of Degradation Media on Physical Properties of Porous Plga 86/15 Scaffolds - **H. E. Naguib**[1], J. Perron[2], J. Daka[3], A. Chawla[3], R. Wilkins[3]; [1]University of Toronto, Toronto, ON, CANADA, [2]University of Ottawa, Toronto, ON, CANADA, [3]Health Canada, Ottawa, ON, CANADA.

208. Proliferation constant study of the CRL-1888 mouse tumor cell-line for the application of hyperthermia animal model - **Y. Kim**, E. Hwang; Inje University, Kimhae City, REPUBLIC OF KOREA.

Novel Biomaterials

209. Osteoblast Proliferation and Differentiation are Sensitive to Substrate Stiffness - **S. Hyzy**, K. Smith, R. Olivares-Navarrete, K. Gall, Z. Schwartz, B. D. Boyan; Georgia Institute of Technology, Atlanta, GA.

210. Piezoresponse Force Microscopy of Biological Materials and Cells **G. L. Thompson, III**[1], B. Rodriguez[2], S. Kalinin[2], S. Hohlbauch[3], R. Proksch[3], A. Vertegel[1]; [1]Clemson University, Clemson, SC, [2]Center for Nanophase Materials Science and Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN, [3]Asylum Research, Santa Barbara, CA.

211. Contraction of 3D Designed Polycaprolactone Scaffolds During Post-Processing - J. M. Kemppainen, A. G. Mitsak, K. L. Wolff, S. J. Hollister, **C. Flannigan**; University of Michigan, Ann Arbor, MI.

212. Fabrication and Function of Three-Dimensional Device Made of Amino-Group-Modified Titanium Dioxide/Polymer NanoComposite Fibers **M. Masuda**[1], M. Okada[1], Y. Kogai[1], N. Nitta[2], A. Kaya[2], T. Yamane[2], T. Taguchi[3], T. Furuzono[1]; [1]Department of Bioengineering, National Cardiovascular Center Research Institute, Suita/city.Osaka, JAPAN, [2]National Institute of Advanced Industrial Science and Technology, Tsukuba/city.Ibaraki, JAPAN, [3]National Institute for Materials Science, Tsukuba/city.Ibaraki, JAPAN.

213. Withdrawn

214. Toughness and Modulus of Photopolymerizable Acrylate-based Networks are Altered under Physiological Conditions - **K. Smith**; Georgia Institute of Technology, Atlanta, GA.

215. Development of a Multi-functional Red Blood Cell Analog Using Polyelectrolyte Complex Microparticles - **T. T. Thula**; University of Florida, Gainesville, FL.

216. Degradation Behavior of a Resorbable Composite - **E. M. Perepezko**; Biomet Inc., Warsaw, IN.

217. Development of a swine model for the evaluation of novel compounds in the prevention of postoperative adhesions **M. E. Cheung**[1], B. Fenton[2], M. Chapman[2], M. Kovacik[2], D. Noe[2], N. Ree[2], S. Lopina[1]; [1]The University of Akron, Akron, OH, [2]Summa Health Systems, Akron, OH.

218. Neomycin Bbinding to BHVs Prevent Glycosaminoglycan Loss after Storage and In Vitro Cyclic Fatigue - **D. Raghavan**, N. Vyavahare; Clemson University, Clemson, SC.

219. New Biodegradable Elastic Polymers and Scaffold-Sheet Tissue Engineering Strategy - **J. Yang**, J. Dey, P. Thevenot, L. Tang, K. Nguyen; The University of Texas at Arlington, Arlington, TX.

220. A Novel Bioabsorbable Omega-3 Fatty Acid Based Biomaterial **J. F. Ferraro**, P. Martakos, T. Karwoski; Atrium Medical Corporation, Hudson, NH.

221. Stability of Autologous Clotting Factor Produced at the Point-of-Care **H. Enyart**, A. Landis, Z. Welch, J. Martin, J. Higgins; Biomet Biologics, Warsaw, IN.

222. Three Dimensional Polymer Scaffolds for High Throughput Cell-Based Assay Systems - **K. Cheng**, W. Kisaalita; University of Georgia, Athens, GA.

223. Characterization of phosphorylcholine-linked methacrylate polymer 1036 (PC1036) - **X. Xu**, E. Rexer, K. Cromack, C. C. Zhou; Abbott Laboratories, Abbott Park, IL.

224. Comparison of Sterilization Methods for Resorbable Polymers **E. M. Perepezko**; Biomet Inc., Warsaw, IN.

225. Novel Absorbable Polymers from Functionalized Hydroquinone **R. S. Bezwada**; Bezwada Biomedical, LLC, Hillsborough, NJ.

226. The Study of Collagen-Chitosan Complex Film Containing VCR-microspheres - H. L. Chen, Jr., H. Chen, Jr., **Q. Q. Zhang, Sr.**, L. R. Liu, Sr., P. Yuan, Jr.; Institute of Biomedical Engineering, Chinese Academy of Medical Sciences, Tianjin, CHINA.