

Society for Biomaterials Annual Meeting and Exposition 2017

Where Materials Become Medicine

Transactions of the 40th Annual Meeting

Volume XXXVIII

Minneapolis, Minnesota, USA
5 – 8 April 2017

ISBN: 978-1-5108-3966-3

Copyright and Disclaimer

Society For Biomaterials
Transactions of the 40th Annual Meeting
Volume XXXVIII

Published by:
Society For Biomaterials
15000 Commerce Parkway, Suite C
Mount Laurel, NJ 08054
(856)439-0826

Copyright © 2017
Society For Biomaterials, USA
ISSN# 1526-7547

All rights reserved. No part of this publication may be reproduced in any form by Photostat, microfilm, retrieval system, or any other means, without written permission from the publisher. The materials published in this volume are not intended to be considered by the reader as statements of standards of care or definitions of the state of the art in patient care or applications of the scientific principles described in the contents. The statements of fact and opinions expressed are those of the respective authors who are identified in the abstracts. Publications of these materials by the Society For Biomaterials does not express or imply approval or agreement of the officers, staff, or agents of the Society with the items presented herein and should not be viewed by the reader as an endorsement thereof. Neither the Society For Biomaterials nor its agents are responsible for inaccuracies or omissions in this Publication.

Every effort has been made to faithfully reproduce these Transactions as submitted. No responsibility is assumed by the Organizers for any injury and/or damage to persons or property as a matter of product liability, negligence or otherwise, or from any use or operation of any methods, products, instructions or ideas contained in the material herein. Because of rapid advances in all sciences, we recommend that independent verification of the material presented should be made.

This product was produced for the Society For Biomaterials by Omnipress.

Duplication of this product and its content in print or digital form for the purpose of sharing with others is prohibited without permission from the Society For Biomaterials.

In no event will Omnipress or its suppliers be liable for any consequential or incidental damages to your hardware or other software resulting from the installation and/or use of this product.

No part of the product navigation and "Help" files may be reproduced or used without written permission from Omnipress.

©2017 Omnipress - All rights reserved.

TABLE OF CONTENTS

***BTI* TRANSLATION OF TISSUE ENGINEERING TECHNOLOGIES**

DEVELOPMENT AND APPLICATION OF ELECTROSPUN SUPRAMOLECULAR ABSORBABLE MEDICAL DEVICES IN PRECLINICAL TO CLINICAL TRIALS	1
<i>Martijn Cox</i>	
IN SITU FIBRILLIZING COLLAGEN SOLUTIONS FOR SOFT TISSUE AUGMENTATION	2
<i>Dale Devore</i>	
EFFECT OF HORMONE LEVELS, GENDER, BODY MASS INDEX, AGE AND LIFE-STYLE PARAMETERS ON HUMAN CRANIOFACIAL BONE REGENERATION WITH TRICALCIUM PHOSPHATE GRAFTS	3
<i>Christine Knabe</i>	
CELL-SEEDED SYNTHETIC SCAFFOLD FOR ESOPHAGEAL REGENERATION	4
<i>Sherif Soliman</i>	
ELECTRICAL APPLICATION ON TITANIUM IMPLANTS STIMULATING BONE GROWTH	N/A
<i>Júlio Souza</i>	
A NEW TREATMENT OPTION FOR FETAL AQUEDUCTAL STENOSIS: VENTRICULO-AMNIOTIC SHUNT	5
<i>Puneeth Shridhar</i>	
WOVEN COLLAGEN BIOTEXTILES FOR ROTATOR CUFF TENDON REPAIR - AN IN VIVO PILOT INVESTIGATION	6
<i>Greg Learn</i>	

ACELLULAR BIOMATERIALS FOR MYOCARDIAL REPAIR 1

DESIGN OF THERMORESPONSIVE HYDROGELS AND BIODEGRADABLE, THERMOPLASTIC ELASTOMERS FOR INTERVENTIONS IN CARDIAC WALL REMODELING FOLLOWING MYOCARDIAL INFARCTION	7
<i>William Wagner</i>	
THERAPEUTIC MICROPARTICLES FUNCTIONALIZED WITH BIOMIMETIC CARDIAC STEM CELL MEMBRANES AND SECRETOME	8
<i>Ke Cheng</i>	
TRANSCATHETER TISSUE-ENGINEERED VEIN VALVE	9
<i>Zeeshan Syedain</i>	
DUAL DELIVERY OF TGFβ RECEPTOR 2 BINDING PEPTIDE AND OXYGEN TO CONTROL CARDIAC FIBROSIS	10
<i>Jianjun Guan</i>	
DEVELOPING DUAL-DELIVERY NANOGELS FOR TREATMENT OF MYOCARDIAL INFARCTION	11
<i>Emily Mihalko</i>	
INJECTABLE ACELLULAR GUEST-HOST HYDROGEL FOR MIR-302 DELIVERY PROMOTES CARDIOMYOCYTE PROLIFERATION	12
<i>Leo Wang</i>	

BIOMATERIALS FOR REGENERATIVE ENGINEERING 1

POROUS HYDROGEL PATCH SEEDED WITH STEM CELLS FOR TREATING ALVEOLAR AIR LEAKS	N/A
<i>Gordana Vunjak-Novakovic</i>	
IMMUNE MODULATORY BIOMATERIALS FOR CELL BASED THERAPIES	13
<i>Omid Veisheh</i>	
INJECTABLE AND RESORBABLE NANOCRYSTALLINE-POLY(ESTER-URETHANE) BONE CEMENTS EXHIBIT BONE-LIKE STRENGTH AND ENHANCE CELLULAR ACTIVITIES	14
<i>Sichang Lu</i>	
BRAIN HYDROGEL DELIVERY OF CLUSTERED VASCULAR ENDOTHELIAL GROWTH FACTOR PROMOTES BEHAVIORAL RECOVERY AFTER STROKE	15
<i>Lina Nih</i>	
TUNING HETEROGENEITIES INTO PHOTOCCLICKABLE SYNTHETIC HYDROGELS FOR IMPROVED CARTILAGE TISSUE ENGINEERING	16
<i>Margaret Schneider</i>	
ENGINEERING PRE-VASCULARIZED SKELETAL MUSCLE WITH PHYSIOLOGICALLY-RELEVANT CELLULAR ORGANIZATION FOR TREATMENT OF VOLUMETRIC MUSCLE LOSS	17
<i>Ngan Huang</i>	
HARNESSING SPHINGOSINE-1-PHOSPHATE SIGNALING AND NANOTOPOGRAPHICAL CUES TO REGULATE SKELETAL MUSCLE MATURATION AND VASCULARIZATION	18
<i>Deok-Ho Kim</i>	

BIOMATERIALS WITH DYNAMIC PROPERTIES

ENGINEERING DYNAMIC REVERSIBLE PEG HYDROGELS USING LIGHT-SENSING PROTEINS	19
<i>Joshua Hammer</i>	
DYNAMIC AND REVERSIBLE STIFFNESS MODULATION IN PHOTORESPONSIVE PROTEIN-POLYMER HYDROGELS	20
<i>Cole Deforest</i>	
DYNAMIC SUBSTRATES BASED ON IMPEDED CRYSTALLIZATION POLYMER NETWORKS FOR REGULATING CELL BEHAVIOR	21
<i>Shanfeng Wang</i>	
ENZYME-MEDIATED STIFFENING HYDROGELS FOR STUDYING PANCREATIC CELL MALIGNANCY	22
<i>Hung-Yi Liu</i>	
MODULATION OF CELLULAR RESPONSE USING MECHANICALLY DYNAMIC PDMS SUBSTRATES	23
<i>Yi-Cheun Yeh</i>	
AMPLIFIED PHOTODEGRADATION OF CELL-LADEN HYDROGELS THROUGH AN ADDITION-FRAGMENTATION CHAIN TRANSFER REACTION	24
<i>Tobin Brown</i>	
SHAPE CHANGING PHOTODEGRADABLE HYDROGELS FOR 2D TO 3D CELL CULTURE	25
<i>Stephanie Delgado</i>	
TEMPERATURE-CONTROLLED CAPTURE AND RELEASE OF HEPARIN-BINDING PROTEINS AND CELLS ON HEPARIN-IMMOBILIZED THERMORESPONSIVE CELL CULTURE SUBSTRATES	26
<i>Jun Kobayashi</i>	
CELL MIGRATION IN CONFINED MICROENVIRONMENTS: STIFFNESS MATTERS	27
<i>Konstantinos Konstantopoulos</i>	

CELL MIGRATION AND BIOMATERIALS

EFFECT OF NUCLEAR SOFTENING AND FIBER STIFFNESS ON CELL MIGRATION INTO DENSE FIBROUS NETWORKS	28
<i>Kwanghoon Song</i>	
NON-SWELLING MICROFLUIDIC HYDROGELS REVEAL THAT MATRIX DEGRADABILITY CONTROLS COLLECTIVITY OF ANGIOGENIC INVASION	29
<i>Brendon Baker</i>	
3D TUMOR MODEL TO INVESTIGATE NATURAL KILLER CELL-CANCER CELL INTERACTIONS	30
<i>Isaac Adjei</i>	
SINGLE CELL MIGRATION SPEED ON NANOFIBERS IS RHO/ROCK AND FOCAL ADHESION STRUCTURE DEPENDENT	31
<i>Daniel Bowers</i>	
MICROPATTERNS ENHANCE ENDOTHELIAL CELL MIGRATION UNDER FLOW CONDITIONS	32
<i>Chelsea Magin</i>	
MICROGEL THIN FILMS DIRECT CELL SPREADING AND MIGRATION RESPONSES	33
<i>Daniel Chester</i>	

EMERGING APPLICATIONS IN ENGINEERING CELLS AND THEIR MICROENVIRONMENTS

MINERALIZED COLLAGEN MATRICES INCREASE BREAST CANCER BONE METASTATIC POTENTIAL	34
<i>Siyong Choi</i>	
CONTRACTILE ABNORMALITIES INDUCED BY BIOMECHANICAL MISMATCH IN HUMAN IPS-BASED CARDIAC MICROTISSUES	35
<i>Zhen Ma</i>	
SERUM FROM transcatheter AORTIC VALVE REPLACEMENT PATIENTS REVEALS LINKS TO VALVULAR INTERSTITIAL CELL ACTIVATION	36
<i>Brian Aguado</i>	
DESIGN OF MULTIDIMENSIONAL CULTURE SYSTEMS FOR PROBING THE ROLE OF INTEGRIN BINDING IN FIBROBLAST ACTIVATION	37
<i>Megan Smithmyer</i>	
INTEGRIN LIGAND-SPECIFIC, LYMPHOID NICHE TO STUDY LYMPHOMA TUMORS	38
<i>Shivem Shah</i>	
ENHANCED VASCULARIZATION OF THE SUBCUTANEOUS SPACE USING A VASCULAR REGENERATIVE BIOMATERIAL	39
<i>Virginie Coindre</i>	
VASCULOGENIC DEGRADABLE HYDROGEL TO ENHANCE ISLET ENGRAFTMENT, FUNCTION, AND SURVIVAL WITHIN EXTRAHEPATIC TRANSPLANT SITES	40
<i>Jessica Weaver</i>	
NON-GENETIC, TRANSIENT ENGINEERING OF MESENCHYMAL STEM CELL SECRETOME VIA INTRACELLULAR CONTROLLED DRUG DELIVERY	41
<i>Sudhir Ranganath</i>	

NUCLEIC ACID DELIVERY SYSTEMS FOR RNA THERAPY AND GENE EDITING	42
<i>N/A</i>	

NUCLEIC ACID DELIVERY

FUNCTIONAL POLYESTERS ENABLE SELECTIVE SMALL RNA DELIVERY TO ORTHOTOPIC LUNG TUMOR CELLS OVER NORMAL CELLS	43
<i>Daniel Siegwart</i>	
IN VIVO NANOPARTICLE-MEDIATED RNAI IN BONE MARROW ENHANCES HEMATOPOIETIC STEM CELL MOBILIZATION AND HARVESTING	44
<i>Michael Mitchell</i>	
DELIVERY OF MICRORNA USING L-TYROSINE POLYURETHANE NANOPARTICLES AS A THERAPY FOR LIVER FIBROSIS	45
<i>Yang Yun</i>	
UTILIZING INJECTABLE DECELLULARIZED EXTRACELLULAR MATRIX HYDROGELS FOR THE SLOW RELEASE OF MICRORNAS	46
<i>Melissa Hernandez</i>	
POLYETHYLENIMINE-COATED SPHERICAL NUCLEIC ACID NANOPARTICLES AS EFFICIENT, LOW DOSE GENE REGULATORY AGENTS	47
<i>Jilian Melamed</i>	
NANOTHERAPEUTICS FOR COMBINATION DRUG AND GENE THERAPY IN TREATING GLIOBLASTOMA MULTIFORME	48
<i>Angela Alexander-Bryant</i>	

ORTHOPAEDIC BIOMATERIALS 1

UNIAXIAL BCP/COLLAGEN BI-LAYERED SCAFFOLD FOR OSTEOCHONDRAL REGENERATION BY STEM CELLS MIGRATION	49
<i>Yun-Jeong Seong</i>	
ELECTROCHEMICAL INDUCED CELL DEATH OF MONOCYTE INFLAMMATORY CELLS ON COCRM O ALLOY IN VITRO	50
<i>Michael Wiegand</i>	
MOLECULAR ENGINEERING OF ARTHRITIC HUMAN CARTILAGE EX VIVO USING BIOMIMETIC PROTEOGLYCANS.....	51
<i>Evan Phillips</i>	
THE PREVALENCE OF A COLUMN-LIKE DAMAGE PATTERN WITHIN COCRM FEMORAL HEAD TAPERS	52
<i>Deborah Hall</i>	
UNIAXIALLY AND BIAXIALLY STRETCHED POLYCAPROLACTONE FILMS FOR REGULATING MC3T3-E1 CELL FUNCTIONS	53
<i>Shanfeng Wang</i>	
EFFECTS OF COBALT AND CHROMIUM IONS ON MACROPHAGE OXYGEN CONSUMPTION	54
<i>Zeina Salloum</i>	
NOVEL ANTIBACTERIAL COATING ON ORTHOPEDIC IMPLANTS.....	55
<i>Dmitry Gil</i>	
FINAL RESULTS OF A CLINICALLY RELEVANT BONE REGENERATION STUDY IN THE GOAT CALVARIA MODEL.....	56
<i>Ophir Ortiz</i>	
MICROARCHITECTURE PARAMETERS INFLUENCING BONE MINERALIZATION IN AN IN VITRO STUDY.....	N/A
<i>Jennyann Pura</i>	

***BTI* MEASUREMENTS AND STANDARDS FOR ADVANCING THE DEVELOPMENT OF TISSUE-ENGINEERED MEDICAL PRODUCTS**

USE OF QUALITY-BY-DESIGN METHODS TO DEVELOP SCALABLE, BIOLOGIC MANUFACTURING PROCESSES	57
<i>Jan Jensen</i>	
A BIODEGRADABLE SCAFFOLD FOR MANUFACTURING STEM CELL DERIVED RETINAL PIGMENT EPITHELIUM TISSUE	58
<i>Vladimir Khristov</i>	
TOWARDS STANDARDIZATION OF MICROCT AS A TOOL FOR CHARACTERIZING TISSUE ENGINEERED SCAFFOLDS	59
<i>Maureen Dreher</i>	
MEASUREMENT ASSURANCE SYSTEM FOR CELL CULTURE SCAFFOLD.....	60
<i>Faribourz Payvandi</i>	

SQUIRE - SIMPLE QUANTITATIVE IMAGING OF RETINAL EPITHELIAL CELLS FOR REPRODUCIBLE CELL METRICS.....	61
<i>Nicholas Schaub</i>	
MEASUREMENT ASSURANCE FOR ASSESSING NANOFIBER DIAMETER.....	62
<i>Carl Simon</i>	

DENTAL IMPLANTS

INTERFACIAL FRACTURE TOUGHNESS OF DENTAL ADHESIVE FORMULATIONS CONTAINING ANTIMICROBIAL DI-VINYL MONOMERS.....	63
<i>Yasaman Delaviz</i>	
DESIGN OF MULTIFUNCTIONAL IONIC LIQUID COATINGS FOR ZIRCONIA DENTAL IMPLANT APPLICATIONS.....	64
<i>Pavan Sandhu</i>	
THE USE OF ALLOGENEIC BLOCK BONE GRAFTS AS AN EFFECTIVE BONE SUBSTITUTE DURING IMPLANT INSERTION.....	65
<i>D. Joshua Cohen</i>	
AN IN VITRO EVALUATION ON BIOCOMPATIBILITY OF THE SELECTED MAX PHASES: Ti3AlC2, Ti3SiC2 AND Ti2AlN.....	N/A
<i>Ke Chen</i>	
IN VITRO TESTS TO EVALUATE THE SURFACE OF DENTAL IMPLANTS IN SIMULATED ORAL ENVIRONMENT.....	N/A
<i>Sathyarayanan Sridhar</i>	
THE IMPACT OF IN VITRO ACCELERATED AGING, APPROXIMATING 30 AND 60 YEARS IN VIVO, ON COMMERCIALY AVAILABLE ZIRCONIA DENTAL IMPLANTS.....	66
<i>Mona Monzavi</i>	

DEVICE- AND IMPLANT-BASED DRUG DELIVERY

A THIN POROUS SHEATH TO MITIGATE THE FOREIGN BODY RESPONSE: IMPLICATIONS FOR DRUG DELIVERY.....	67
<i>Kelsey Willson</i>	
MICROFABRICATED IMMUNE-ISOLATING DEVICES FOR TRANSPLANTING THERAPEUTIC CELLS IN VIVO.....	68
<i>Suman Bose</i>	
TUNING STRATEGIES FOR SEQUENTIAL DELIVERY OF MULTIPLE ACTIVE BIOLOGICAL FACTORS.....	69
<i>Liisa Kuhn</i>	
UNVEILING MACROPHAGE POPULATIONS AND MECHANISMS DRIVING THE BETTER REMODELING OUTCOMES ASSOCIATED WITH SHIFTING PHENOTYPE IN THE HOST RESPONSE AGAINST BIOMATERIALS.....	70
<i>Daniel Hachim</i>	
CONTROLLED INSERTION OF MICRONEEDLE FOR ENHANCED INTRASCLERAL DRUG DELIVERY.....	71
<i>Seung Hyun Park</i>	
SMART CONTACT LENS FOR OCULAR THERANOSIS.....	72
<i>Do Hee Keum</i>	

IMMUNOMODULATION 1

MICROGELS PRESENTING SA-FASL ACHIEVE ALLOGENEIC ISLET GRAFT ACCEPTANCE WITHOUT CHRONIC IMMUNOSUPPRESSION.....	73
<i>Devon Headen</i>	
IMPACT OF MACROPHAGE PHENOTYPE ON ENGINEERED TISSUE VASCULARIZATION.....	74
<i>Pamela Graney</i>	
A DUAL-MICROPARTICLE SYSTEM PREVENTS AND REVERSES TYPE 1 DIABETES IN NON-OBESSE DIABETIC MICE.....	75
<i>Joshua Stewart</i>	
MODULATORY MECHANISMS OF IMMUNE HOST RESPONSE AND ANTIMICROBIAL PEPTIDE EXPRESSION INDUCED BY POLY(4-HYDROXY BUTYRATE).....	76
<i>Catalina Pineda</i>	
AMINO ACID CHIRALITY IN PARTICLE-BASED SCAFFOLDS FOR LOCALIZED CONTROL OF ADAPTIVE IMMUNE RESPONSE IN VIVO.....	77
<i>Tatiana Segura</i>	
BIOMATERIAL CUES FOR MODULATING MACROPHAGE AND SCHWANN CELL PHENOTYPE FOLLOWING PERIPHERAL NERVE INJURY.....	78
<i>Melissa Wrobel</i>	

REGULATING STEM CELL DIFFERENTIATION

MICROSTRUCTURED AND HYDROPHILIC TITANIUM SURFACES MEDIATE SEMAPHORIN SIGNALING TO REGULATE BONE MODELING DURING IMPLANT OSSEointegration	79
<i>Ethan Lotz</i>	
LAYER-BY-LAYER ASSEMBLED ‘MULTI-TRILAYER’ NANOFILM FOR HIGH ENCAPSULATION EFFICIENCY OF PROTEIN AND ITS APPLICATION IN INDUCED PLURIPOTENT STEM CELL CULTURE	80
<i>Uiyoung Han</i>	
ELECTRICAL DIFFERENTIATION OF MESENCHYMAL STEM CELLS INTO SCHWANN CELL-LIKE PHENOTYPES USING INKJET PRINTED GRAPHENE CIRCUITS	81
<i>Metin Uz</i>	
WHARTON’S JELLY DERIVED MESENCHYMAL STEM CELLS FORM FUNCTIONAL NEUROSPHERES WITH SILICA SPINAL CORD REPLICA	82
<i>Sze Wing Tang</i>	
DEVELOPMENT AND EVALUATION OF A PHYSIOLOGICALLY RELEVANT BIOREACTOR FOR BONE TISSUE ENGINEERING	83
<i>Akhilandeswari Ravichandran</i>	
TUNABLE BIOTRANSPORT PROPERTIES IN GELATIN HYDROGELS FOR HEMATOPOIETIC STEM CELL CULTURE	84
<i>Aidan Gilchrist</i>	

TISSUE ENGINEERING SCAFFOLD FABRICATION

GRADIENT NANO-ENGINEERED IN SITU FORMING HYDROGEL FOR OSTEOCHONDRAL TISSUE REGENERATION IN RABBIT	85
<i>Janani Radhakrishnan</i>	
3D PRINTING OF POLY(GLYCEROL SEBACATE) ELASTOMERIC SCAFFOLDS VIA THIOL-NORBORNENE PHOTOCHEMISTRY	86
<i>Yi-Cheun Yeh</i>	
MICROPOROUS SCAFFOLDS ASSEMBLED FROM MICROGEL BUILDING BLOCKS FOR HMSC DELIVERY AND BONE TISSUE ENGINEERING	87
<i>Shangjing Xin</i>	
COMPLETELY BIOLOGICAL ALLOGENIC ENGINEERED TISSUE FOR SURGICAL AND TRANSCATHETER HEART VALVE APPLICATION	88
<i>Zeeshan Syedain</i>	
MANIPULATION OF EXTRACELLULAR MATRIX COMPOSITION TO STUDY DISEASE ETIOLOGY IN EX VIVO ORGAN CULTURES	89
<i>Ana Porras</i>	
STEREOLITHOGRAPHY OF ENGINEERED TISSUES CONTAINING INTERPENETRATING VASCULAR NETWORKS	90
<i>Bagrat Grigoryan</i>	
NEW BIOMATERIAL PLATFORMS FOR 3D PRINTING AND THEIR PROMISE IN MEDICINE	91
<i>N/A</i>	

3D BIOPRINTING FOR MEDICAL APPLICATIONS

A GENERALIZABLE STRATEGY FOR BIOPRINTING HYDROGELS FROM NON-VISCOUS PHOTOCROSSLINKABLE INKS TO ENGINEER HETEROGENEOUS TISSUE CONSTRUCTS	92
<i>Christopher Highley</i>	
3D ROBOTIC ASSISTED IMPLANTATION OF GELATIN-NANO-SILICATE SCAFFOLDS FOR CRITICAL SIZED BONE DEFECT OSTEOGENESIS AND VASCULARIZATION	93
<i>Venu Varanasi</i>	
3D BIOPRINTING OF PERFUSABLE INTACT HEART	94
<i>Didarul Bhuiyan</i>	
3D PRINTED SCAFFOLD ARCHITECTURE CONTROLS STEM CELL DIFFERENTIATION	95
<i>Murat Guvendiren</i>	

DEGRADABLE METAL BIOMATERIALS

BIORESORBABLE RARE-EARTH-FREE MAGNESIUM SCREWS USED FOR OSTEOSYNTHESIS IN A SHEEP MODEL	N/A
<i>Johannes Eichler</i>	
3D POROUS POLYCAPROLACTONE-BASED MAGNESIUM SCAFFOLD FOR BONE TISSUE ENGINEERING	96
<i>Kelvin Yeung</i>	

REGULATION OF THE CHRONIC ARTERIAL INFLAMMATORY RESPONSE TO BIODEGRADABLE ZINC-BASED IMPLANT MATERIALS BY CORROSION	97
<i>Elisha Earley</i>	
POROUS IRON-MANGANESE-HYDORXYAPATITE COMPOSITES FOR BIODEGRADABLE ORTHOPAEDIC APPLICATIONS	98
<i>Lia Stanciu</i>	
NANO-SURFACE MODIFICATIONS OF DEGRADABLE PURE ZINC SUBSTRATES YIELD VARYING IN-VIVO INTRALUMINAL RESPONSES	99
<i>Roger Guillory</i>	
INFLUENCE OF STRAIN ON THE CORROSION OF BIODEGRADABLE METALS	100
<i>Karin Beaussant Törne</i>	

DRUG DELIVERY

PEG-POLY(ω-PENTADECALACTONE-CO-P-DIOXANONE) NANOPARTICLES FOR INTRACRANIAL DELIVERY OF RADIOSENSITIZING AGENTS	101
<i>Evan Chen</i>	
ERYTHROMYCIN MODIFICATION TO IMPROVE THE ACIDIC STABILITY WHILE OPTIMIZING IT FOR INFECTION SITE-SPECIFIC RELEASE	102
<i>Erika Cyphert</i>	
OLIGONUCLEOTIDE HYBRIDIZED HYDROGELS FOR SUSTAINED RELEASE OF SMALL MOLECULE (APTAMER) THERAPEUTICS	103
<i>Nikunj Agrawal</i>	
EFFECT OF PARTICLE SHAPE AND SIZE ON MARGINATION AND WALL-LOCALIZATION IN VASCULAR DRUG DELIVERY	104
<i>Michaela Cooley</i>	
ENHANCED ENDOVASCULAR DRUG DELIVERY AND EFFICACY BY LINEARLY MICRO-PATTERNED DRUG ELUTING BALLOON	105
<i>Kang Ju Lee</i>	
NON-VIRAL CRISPR/CAS GENE EDITING IN VITRO AND IN VIVO ENABLED BY CO-DELIVERY OF MRNA AND SGRNA INSIDE OF SYNTHETIC LIPID NANOPARTICLES	106
<i>Daniel Siegwart</i>	

ENGINEERING CELLS AND THEIR MICROENVIRONMENTS

MECHANICALLY COMPETENT 3-D COLLAGEN-BASED TUMOR EXTRACELLULAR MATRIX MODELS FOR INVESTIGATION OF MELANOMA	107
<i>Vipul Kishore</i>	
DIRECTING THE SELF-ASSEMBLY OF TUMOR SPHEROIDS WITHIN 3D BIOPRINTED CELLULAR HETEROGENEOUS IN VITRO MODELS	108
<i>Tao Jiang</i>	
IMPACT OF VEGF PRESENTATION AND GLIOBLASTOMA ON VASCULARIZATION OF GELMA	109
<i>Mai Ngo</i>	
IN SITU OXYGEN DELIVERY WITHIN IMMUNOISOLATED DEVICES LEADS TO DIABETES REVERSAL IN AN DIABETIC RODENT MODEL	N/A
<i>Maria Coronel</i>	
FABRICATION AND CHARACTERIZATION OF VASCULAR SMOOTH MUSCLE CELL SHEETS ON ENZYMIC SACRIFICIAL HYDROGEL FOR POTENTIAL VASCULAR TISSUE PATCH APPLICATION	110
<i>Nae Gyune Rim</i>	
THE USE OF PERFUSION FLOW AND CO-CULTURES TO PROMOTE MICROVESSEL DEVELOPMENT IN A 100% SYNTHETIC SCAFFOLD	111
<i>Meghan Wright</i>	

ORTHOPAEDIC BIOMATERIALS 2

NF-κB DECOY OLIGODEOXYNUCLEOTIDE MITIGATES POLYETHYLENE WEAR PARTICLE-INDUCED BONE LOSS BUT HAS NO EFFECTS ON EXOGENOUS MACROPHAGE INFILTRATION IN A MURINE CONTINUOUS FEMORAL PARTICLE INFUSION MODEL	112
<i>Tzu-Hua Lin</i>	
PARTICLES FOR OSTEOARTHRITIS TREATMENT: INJECTED WET PARTICULATE OF COLLAGEN-ELASTIN-GLYCOSAMINOGLYCAN MATRIX INTO SYNOVIAL FLUID, MECHANICALLY CUSHION JOINT WITH LONG DURATION	113
<i>David Masters</i>	
DOES METAL ION-INDUCED OXIDATIVE STRESS ACTIVATE THE INFLAMMASOME IN MACROPHAGES?	114
<i>Maxime-Alexandre Ferko</i>	

IN VIVO REGENERATIVE RESPONSE ENHANCED IN CRITICAL SIZE BONE DEFECTS USING HIGH PERFORMANCE MICRO ENVIRONMENTS	115
<i>Sergio Montelongo</i>	

SUPRAMOLECULAR MATERIALS FOR BIOMEDICAL APPLICATIONS

DESIGNING MULTIFUNCTIONAL COLLAGEN MIMETIC PEPTIDES TO INCORPORATE HIERARCHAL STRUCTURE WITHIN ROBUST HYDROGEL BIOMATERIALS	116
<i>Amber Hilderbrand</i>	
MODULATING CORNEA-MIMETIC COLLAGEN SELF-ASSEMBLY USING ARTIFICIAL CHAPERONES	117
<i>Shoumyo Majumdar</i>	
MODULAR PEPTIDE AMPHIPHILE MICELLES IMPROVE AN ANTIBODY-MEDIATED IMMUNE RESPONSE TO GROUP A STREPTOCOCCUS	118
<i>John Barrett</i>	
MULTIFUNCTIONAL PEPTIDE MICELLE FOR MONOCYTE TARGETING AND GENE THERAPY TO REDUCE ATHEROSCLEROSIS	119
<i>Christopher Poon</i>	
DEVELOPMENT OF MULTIVALENT PROTEIN-CONJUGATED GNPS AS VIRAL ENTRY INHIBITORS	120
<i>Allison Siehr</i>	

BIOMATERIALS FOR THERAPEUTIC DRUG DELIVERY 1

CONTINUOUS MICROFLUIDIC ASSEMBLY OF BIODEGRADABLE POLY(BETA-AMINO ESTER)/DNA NANOPARTICLES FOR ENHANCED GENE DELIVERY	121
<i>Jordan Green</i>	
HYPOXIA AND H₂O₂ DUAL-SENSITIVE VESICLES FOR ENHANCED GLUCOSE-RESPONSIVE INSULIN DELIVERY	122
<i>Jicheng Yu</i>	
A DYNAMICALLY DISASSEMBLING FILAMENTOUS SCAFFOLD FOR SUSTAINED MICELLAR DELIVERY	123
<i>Nicholas Karabin</i>	
STIMULI SENSITIVE POLYURETHANE-BASED HYDROGELS FOR THE CONTROLLED AND TRIGGERED RELEASE OF ANTI-INFLAMMATORY DRUGS AND ANTI-BACTERIAL IONS	124
<i>Gianluca Ciardelli</i>	
SLOW, SUSTAINED RELEASE OF CORTICOSTEROIDS FROM A POLYMERIC LIQUID FOR USE IN OSTEOARTHRITIS	125
<i>Edgardo Rivera-Delgado</i>	
IMIDAZOLE-MODIFIED CHITOSAN NANOPARTICLES FOR DELIVERY TO LUNG EPITHELIAL CELLS IN AIR-LIQUID INTERFACE CULTURES	126
<i>Blake Lash</i>	
ACID-LABILE INTERLOCKED CYCLODEXTRIN POLYMERS FOR THERAPEUTIC APPLICATIONS TO RARE DISEASES	127
<i>Atsushi Tamura</i>	
HYDROGELS CROSSLINKED BY PHOTOACTIVE RUTHENIUM COMPLEX FOR RAPID PROTEIN RELEASE IN RESPONSE TO VISIBLE LIGHT	128
<i>Christopher Highley</i>	

CARDIOVASCULAR BIOMATERIALS

FABRICATING AND TUNING AN ELASTOMERIC BLOOD VESSEL FOR USE IN CORONARY ARTERY BYPASS SURGERIES	129
<i>Harleigh Warner</i>	
HUMAN IPSC-DERIVED CARDIOMYOCYTE RESPONSE TO 3D FETAL AND ADULT DECELLULARIZED HEARTS	130
<i>Ana Silva</i>	
ELUCIDATING ENDOTHELIAL CELL HEMOSTATIC REGULATION BY ISOLATING INTEGRIN-MEDIATED ADHESION TO BIOACTIVE HYDROGELS	131
<i>Allison Post</i>	
IN VIVO ANASTOMOSIS AND PERFUSION OF A 3D PRINTED PEG HYDROGEL CONTAINING MICROVASCULAR NETWORKS	132
<i>Samantha Paulsen</i>	
EFFICIENT AORTIC VALVE CELL SEEDING INTO DECELLULARIZED PERICARDIAL MEMBRANE: ADVANCEMENTS INTO MANUFACTURE OF ENGINEERED VALVE TISSUE FOR THE DESING OF ‘OFF THE SHELF’, LIVING, VALVE BIOIMPLANTS	133
<i>Rosaria Santoro</i>	
IMPACT OF PERITONEAL PRE-CONDITIONING ON TISSUE ENGINEERED VASCULAR GRAFT INTIMAL HYPERPLASIA AND INFLAMMATION	134
<i>Mozhgan Shojaee</i>	

RAPID FABRICATION OF INJECTABLE ENGINEERED CARDIAC TISSUE SPHEROIDS USING A NOVEL MICROFLUIDIC DEVICE	135
<i>Ferdous Finklea</i>	
SHAPE-SPECIFIC NANOCERIA ALLEVIATE OXIDATIVE STRESS IN PATIENT-DERIVED VALVULAR INTERSTITIAL CELLS	136
<i>Shilpa Sant</i>	

DESIGN, FABRICATION AND CHARACTERIZATION OF MULTISCALE AND MULTIFUNCTIONAL BIOMATERIALS 1

EXPLORING THE POTENTIAL OF MULTIFILAMENT ELECTROSPUN SUTURES FOR SOFT TISSUE REPAIR	137
<i>Pierre-Alexis Mouthuy</i>	
A COMPARISON BETWEEN ELECTRO AND ROTARY-JET SPINNING TO PRODUCE MICRO/NANO-FIBERS OF DIFFERENT CONCENTRATIONS OF POLYCAPROLACTONE	138
<i>Mirian Machado De Paula</i>	
DEVELOPMENT OF MULTIFUNCTIONAL SHEAR-THINNING GUEST-HOST ASSEMBLED COLLOIDAL HYDROGELS	139
<i>Joshua Mealy</i>	
CHROMONIC LIQUID CRYSTAL HYDROGELS AS ANISOTROPIC, ACTIVE BIOMATERIALS	140
<i>Taylor Ware</i>	
DESIGNING HIGH-WATER-CONTENT AND RESILIENT PEG-BASED HYDROGELS	141
<i>Yu Zhang</i>	
ENGINEERING ANISOTROPIC JANUS-TYPE POLYMER NANOFIBER SCAFFOLDS VIA CENTRIFUGAL JET SPINNING	142
<i>Prashanth Ravishankar</i>	
CAPILLARY FORCES AND MULTISCALE POROSITY SYNERGISTICALLY ENHANCE OSTEOINTEGRATION IN BIPHASIC CALCIUM PHOSPHATE SCAFFOLDS	143
<i>Amy Wagoner Johnson</i>	
PROFILING A PROPHYLACTIC LOCAL TRIPLE THERAPY HYDROGEL PATCH TO TREAT AND PREVENT CANCER RECURRENCE	144
<i>Natalie Artzi</i>	

ENGINEERED BIOMATERIALS FOR NEURAL APPLICATIONS 1

BLOOD-BRAIN-BARRIER DISRUPTION DICTATES NANOPARTICLE ACCUMULATION FOLLOWING BRAIN INJURY	145
<i>Vimala Bharadwaj</i>	
PARTICLE HYDROGELS LEAD TO DRAMATIC DECREASE IN GLIOSIS AND PROMOTE NPC MIGRATION AFTER STROKE	146
<i>Elias Sideris</i>	
OLIGODENDROCYTE SURVIVAL, PROLIFERATION, AND INTRACELLULAR REDOX STATE IS DEPENDENT ON 3D HYDROGEL MECHANICS AND DEGRADATION	147
<i>Kyle Lampe</i>	
ASTROCYTE EXTRACELLULAR MATRIX INCORPORATION IMPROVES NEURITE GROWTH ON HYALURONIC ACID HYDROGELS	148
<i>Russell Thompson</i>	
DIRECTING NEURON AND GLIAL RESPONSE UTILIZING SURFACE CHEMISTRY, TOPOGRAPHY AND ELECTRICAL STIMULATION	149
<i>Kendell Pawelec</i>	
CNTS NANOSTRUCTURED SCAFFOLDS: A POTENTIAL WAY TO TUNE NEURAL NETWORK	150
<i>Ilaria Rago</i>	

ORTHOPAEDIC BIOMATERIALS 3

TRIBOCORROSION HEREDITY INTEGRAL MODELING OF ABRASION-CURRENT-IMPEDANCE-VOLTAGE RELATIONSHIPS	151
<i>Jeremy Gilbert</i>	
SILK-REINFORCED BIOMATERIALS FOR LOAD-BEARING FIXATION DEVICES	152
<i>Bryant Heimbach</i>	
COMBINATORIAL HYDROGELS FOR DECIPHERING THE ROLE OF CELL-HYDROGEL INTERACTIONS ON MSC CHONDROGENESIS	153
<i>Sebastian Vega</i>	
REMODELING OF SETTABLE, WEIGHT-BEARING POLYURETHANE COMPOSITE BONE GRAFTS IN A TIBIAL PLATEAU DEFECT MODEL IN SHEEP	154
<i>Madison McEnery</i>	
BIOACTIVE SURFACE-POROUS PEKK	155
<i>Bo Yuan</i>	

MECHANICALLY ASSISTED ELECTROCHEMICAL DEGRADATION OF ALUMINA-TiC COMPOSITE	156
<i>Hetal Maharaja</i>	

TISSUE ENGINEERING AND ORGANOID DEVELOPMENT

3D CARDIAC MICROTISSUES WITH INTEGRATED FORCE SENSORS FOR NON-INVASIVE READOUT OF CONTRACTILE FORCE.....	157
<i>Jacqueline Bliley</i>	
MIGRATION-PERMISSIVE HYDROGELS AS BIOMIMETIC MATRICES FOR HUMAN SALIVARY GLAND ENGINEERING.....	158
<i>Daniel Harrington</i>	
CELLULAR INHIBITION OF RADICAL-MEDIATED POLYMERIZATION OF POLY(ETHYLENE GLYCOL) HYDROGELS FORMED VIA THIOL-NORBORNENE CLICK CHEMISTRY.....	159
<i>Stanley Chu</i>	
HYDROGEL COMPOSITION REGULATES CHONDROGENESIS BY MESENCHYMAL STEM CELLS AND ENDOCHONDRAL OSSIFICATION INENGINEERED CARTILAGINOUS INTERFACIAL TISSUES.....	160
<i>Jingming Chen</i>	
PROBING OXYGEN TENSION OF TISSUE ENGINEERED GRAFTS USING OXYGEN IMAGING	161
<i>Mrignayani Kotecha</i>	
GROWTH FACTOR PRESENTATION TO MSCS WITHIN MICRO-FIBER/COLLAGEN COMPOSITES FOR LIGAMENT TISSUE ENGINEERING	162
<i>Aaron Goldstein</i>	

3D PRINTING AND ITS IMPACT ON BIOMEDICINE

HYDROCOLLOID INKS FOR SOLID FREEFORM FABRICATION OF POROUS HYDROGEL CONSTRUCTS.....	163
<i>Karli Gold</i>	
FABRICATION OF A BIOENGINEERED 3D PRINTED CALCIUMALKALIPHOSPHATE-BASED BONE GRAFT WITH HOMOGENOUSLY DISTRIBUTED OSTEOBLASTS AND MINERALIZING BONE MATRIX IN VITRO.....	164
<i>Christine Knabe</i>	
PHOTOCURABLE BIOINKS FOR INKJET 3D PHARMING OF HYDROPHILIC DRUGS	165
<i>Chase Linsley</i>	
OSTEOBLAST FUNCTIONS OF BIOACTIVE 3D PRINTED INTERCONNECTED POROUS TI-6AL-4V MESH STRUCTURES	166
<i>Krishna Nune</i>	
3D PRINTING OF TISSUE ENGINEERING SCAFFOLDS WITH “ON-THE-FLY” ADJUSTMENT OF FILAMENT DIAMETER	167
<i>Paul Dalton</i>	
A MECHANICALLY STIFF 3D PRINTED STRUCTURE COMBINED WITH A CHONDROGENIC HYDROGEL FOR CARTILAGE DEFECT REPAIR.....	168
<i>Elizabeth Aisenbrey</i>	

BIOMATERIALS FOR THERAPEUTIC DRUG DELIVERY 2

DEGRADABLE POLY(ETHYLENE GLYCOL) (PEG) HYDROGELS TO TEMPORALLY CONTROL DELIVERY OF SIRNA THERAPEUTICS	169
<i>Yuchen Wang</i>	
EFFECT OF PDGF-BB DELIVERY FROM HEPARINIZED COLLAGEN SUTURES ON HEALING OF LACERATED FLEXOR TENDON IN-VIVO.....	170
<i>Mousa Younesi</i>	
ZWITTERIONIC CRYOGELS FOR SUSTAINED RELEASE OF PROTEINS	171
<i>Gulsu Sener</i>	
DYNAMICALLY CROSSLINKED HYALURONIC ACID HYDROGELS FOR INSULIN DELIVERY	172
<i>Kun Xue</i>	
INTRACELLULAR DELIVERY OF ANTIBODY BY SELF-ASSEMBLED PROTEIN NANOPARTICLES.....	173
<i>Julie Champion</i>	
COMPOSITION OF EXTRACELLULAR MATRIX PROTEIN BASED COMPOSITES AFFECTS RHBMP-2 RELEASE.....	174
<i>Quynh Nguyen</i>	
BIOMEDICAL APPLICATIONS OF MAGNETIC NANOPARTICLES: REMOTE CONTROL OF CELLS.....	175
<i>J. Dobson</i>	

CANCER NANOTECHNOLOGY

HYALURONATE CONJUGATED MOLYBDENUM DISULFIDE FOR PHOTOACOUSTIC CANCER THERANOSIS	176
<i>Myeonghwan Shin</i>	
DEVELOPMENT OF TARGETED MICELLAR NANOTHERANOSTICS FOR METASTATIC BREAST CANCER	177
<i>Amrutha Manigandan</i>	
IN VITRO BREAST TUMOR MODEL TO INVESTIGATE THE ROLE OF TUMOR MICROENVIRONMENT IN DISEASE PROGRESSION	178
<i>Srivatsan Kidambi</i>	
A SEMI-AUTOMATED MICROFLUIDIC PLATFORM FOR REAL-TIME TRACKING OF CANCER CELLS AND INVESTIGATION OF NANOPARTICLES CELLULAR UPTAKE	179
<i>Mariana Carvalho</i>	
DUAL DELIVERY NANOSCALE DEVICE FOR MIR-345 AND GEMCITABINE CO-DELIVERY TO TREAT PANCREATIC CANCER	180
<i>Metin Uz</i>	

IMMUNOMODULATION 2

MACROPHAGE-TARGETED DRUG DELIVERY SYSTEM FOR THE TREATMENT OF RHEUMATOID ARTHRITIS	181
<i>Amanda Pentecost</i>	
COMBINATION NANOVACCINE PROVIDES PROTECTION AGAINST INFLUENZA IN AGED MICE	182
<i>Kathleen Ross</i>	
DISPLAYING ANTI-NEUTROPHIL ANTIBODIES AT THE HOST-SKIN GRAFT INTERFACE USING IGG-BINDING INJECTABLE FIBRILS	183
<i>Wen Liu</i>	
PEPTIDE-LOADED NANOPARTICLES REDUCE POSITIVE CO-STIMULATORY EXPRESSION AND INDUCE ANTIGEN-SPECIFIC TOLERANCE	184
<i>Robert Kuo</i>	
EVALUATION OF IMMUNOMODULATORY BIOMATERIAL IN ZEBRAFISH	185
<i>Claire Witherell</i>	
ENHANCING THE DELIVERY OF THERAPEUTIC ANTIBODIES TO TUMOR DRAINING LYMPH NODES VIA LYMPHATIC-DRAINING POLY(PROPYLENE SULFIDE) NANOPARTICLES FOR CANCER IMMUNOTHERAPY	186
<i>David Francis</i>	

MULTIFUNCTIONAL BIOMATERIAL DESIGN FOR REGENERATIVE TISSUE ENGINEERING

HYDROXYAPATITE COATED MICRORIBBON-BASED HYDROGELS INDUCE ROBUST OSTEOGENESIS AND MINERALIZATION OF MESENCHYMAL STEM CELLS IN 3D	187
<i>Bogdan Conrad</i>	
PRODUCTION OF CONTRACTILE MUSCLE TISSUE CONSTRUCTS BASED ON CELL SHEET TISSUE ENGINEERING	188
<i>Hironobu Takahashi</i>	
INTRAFIBRILLARLY-MINERALIZED AND ANTIMICROBIAL ELASTIN-LIKE SCAFFOLD FOR ENDODONTIC APPLICATIONS	189
<i>Conrado Aparicio</i>	
A HIGH THROUGHPUT PEPTIDE MICROARRAY PLATFORM FOR PROBING CELLULAR BEHAVIOR IN 3-D	190
<i>Sadhana Sharma</i>	
TRI-CROSSLINKING OF ALGINATE-BASED SUPRAMOLECULAR HYDROGELS FOR CARTILAGE REGENERATION	191
<i>Jennifer Etter</i>	
EX VIVO STUDY OF NANOWIRES IN MINI-GUTS	192
<i>Yijun(Sherry) Qi</i>	

SURFACE CHARACTERIZATION AND MODIFICATION

CROSSLINKING-DEPENDENT MORPHOLOGY, LUBRICITY AND MECHANICS OF PVP GEL COATINGS CHARACTERIZED BY AFM	193
<i>Greg Haugstad</i>	
INVESTIGATING THE DEGRADATION OF ALKANETHIOL SELF-ASSEMBLED MONOLAYER SURFACES IN MESENCHYMAL STEM CELL CULTURE	194
<i>Anita Shukla</i>	

MELT BLENDED PHASE SEPARATED POLYETHYLENE-B-POLYETHYLENE AND POLYPROPYLENE BLENDS FOR ENHANCED ANTI-FOULING: EFFECT OF POLYETHYLENE GLYCOL CHAIN LENGTH AND SURFACE DENSITY ON PROTEIN ADSORPTION	195
<i>Amit Garle</i>	
SELECTIVE CAPTURE OF REGULATORY T CELLS FOR CANCER IMMUNOTHERAPY	196
<i>Tsuyoshi Kimura</i>	
BIOMINERALIZED DIAMOND-LIKE CARBON FILMS WITH TITANIUM DIOXIDE - STUDY ON STAPHYLOCOCCUS AUREUS BIOFILM.....	197
<i>Fernanda Marciano</i>	

***BTI* FROM BENCHTOP TO CLINICAL TRIAL: EXAMPLES OF TECHNOLOGY DEVELOPMENT**

A PEG-FIBRINOGEN HYDROGEL FOR CARTILAGE REPAIR: FROM VISION TO CLINICAL EXPERIENCE	198
<i>Roni Wechsler</i>	
THE DEVELOPMENT OF A SUPERIOR DECELLULARIZED HUMAN DERMAL PRODUCT FOR ADVANCED WOUND CARE	199
<i>Paul Gratzler</i>	
FROM BENCHTOP TO CLINICAL TRIAL – EXOGENOUS CROSSLINKING TO TREAT DISC DEGENERATION AND LOW BACK PAIN	200
<i>Thomas Hedman</i>	
BIOMATERIALS AS MEDICINE: SUCCESSFUL TREATMENT OF HUMAN MRSA BACTEREMIA WITH A SORBENT HEMOPERFUSION DEVICE	201
<i>Robert Ward</i>	
TISSUE REMODELING OF A RESORBABLE POLY-4-HYDROXYBUTYRATE SCAFFOLD FOR SOFT TISSUE REPAIR.....	202
<i>David Martin</i>	

3RD SFB BUSINESS PLAN COMPETITION

HYDRUSTENT – BIODEGRADABLE URETERAL STENT	203
<i>Alexandre Barros</i>	
LAUNCHPAD MEDICAL, LLC	204
<i>Fioleda Prifiti</i>	
20/20 OPTIMEYES: DRUG DELIVERY SOLUTIONS TO IMPROVE OCULAR HEALTH.....	205
<i>Frances Lasowski</i>	
TECH WOUND SOLUTIONS: KARE POWDER CHRONIC WOUND DRESSING	206
<i>Tucker King</i>	
NEUROGEL; AN INJECTABLE SOLUTION TO PERIPHERAL NERVE INJURY	207
<i>Travis Prest</i>	
THE RESCUE STENT FOR NON-COMPRESSIBLE TRAUMATIC HEMORRHAGE	208
<i>Puneeth Shridhar</i>	

BIOMATERIAL-TISSUE INTERACTION

TOLL-LIKE RECEPTOR 2-MEDIATED NF-κB ACTIVATION BY DAMAGE-ASSOCIATED MOLECULAR PATTERNS ON BIOMATERIAL SURFACES.....	209
<i>Lindsay Fitzpatrick</i>	
OXYGEN-CONTROLLABLE HYDROGELS FOR ENGINEERED TISSUE MODELS.....	210
<i>Kyung Min Park</i>	
EFFECTS OF AGING UPON THE HOST RESPONSE TO BIOMATERIALS.....	211
<i>Bryan Brown</i>	
AN ELASTIC, PRECISION-ENGINEERED POROUS POLYURETHANE MATERIAL MITIGATES FOREIGN BODY CAPSULE FORMATION AND PROMOTES TISSUE INTEGRATION IN VIVO	212
<i>Le Zhen</i>	
PROTEASE-DEGRADABLE MICROGELS FOR PROTEIN DELIVERY FOR VASCULARIZATION	213
<i>Greg Foster</i>	
DIRECT TRANSPORTATION OF POLYMER NANOPARTICLES TO THE CELL NUCLEUS BY SURFACE DECORATION WITH MULTI-OLIGOPEPTIDES.....	215
<i>Kazuhiko Ishihara</i>	

ENGINEERING MATERIALS AND DELIVERY SYSTEMS FOR MODERN VACCINES

CATIONIC POLYMER-BASED STABILIZATION STRATEGIES FOR SINGLE-ADMINISTRATION INACTIVATED POLIO VACCINE.....	216
<i>Stephany Tzeng</i>	

ADJUVANT FREE PEPTIDE NANOFIBERS ELICIT CD8+ T CELL RESPONSES AFTER INTRANASAL ADMINISTRATION.....	217
--	-----

Yi Wen

BINARY POLYMER BLENDS AS MUCOADHESIVE WAFERS FOR SUBLINGUAL DELIVERY OF PROTEIN VACCINES.....	218
---	-----

Samuel Hanson

IMMUNOMODULATION 3

EXPANSION OF TUMOR-SPECIFIC T CELLS USING IMMUNE POLYELECTROLYTE MULTILAYERS ASSEMBLED ON MICRONEEDLES.....	219
---	-----

Qin Zeng

EXPANSION OF EXHAUSTED T CELL POPULATIONS VIA ELECTROSPUN POLY(DIMETHYL SILOXANE)-BASED FIBROUS MESHES.....	220
---	-----

Alex Dang

SELF-ASSEMBLY OF POLYIONIC IMMUNE SIGNALS TO PROGRAM MYELIN-SPECIFIC TOLERANCE.....	221
---	-----

Christopher Jewell

EX VIVO IMMUNE ORGANOIDS WITH PROTEIN-SEQUESTERING NANOPARTICLES REGULATE KINETICS OF B CELL DIFFERENTIATION.....	222
---	-----

Alberto Purwada

TARGETED EXTRACELLULAR INDOLEAMINE 2,3-DIOXYGENASE SUPPRESSES IMMUNE RESPONSES IN VITRO AND IN VIVO.....	223
--	-----

Evelyn Bracho-Sanchez

AMELIORATION OF INFLAMMATION THROUGH DAILY INFUSION OF UNMODIFIED POLY (LACTIDE-CO-GLYCOLIDE) PARTICLES.....	224
--	-----

Eiji Saito

ALPHA-HELICAL PEPTIDE NANOFIBERS AS NON-INFLAMMATORY SELF-ADJUVANTING VACCINES.....	225
---	-----

Yaoying Wu

REGENERATION OF CRANIOMAXILLOFACIAL TISSUE

EFFECT OF ECM SOURCE TISSUE ON REMODELING OF TMJ MENISCUS REPLACEMENT DEVICE.....	226
---	-----

Samuel Lopresti

CULTURING TGFBR2 EXPRESSING PROGENITOR CELLS ON TEXTILE SCAFFOLDS FABRICATED FROM RESORBABLE PLLA FOR REGENERATION OF TENDON-BONE JUNCTION.....	227
---	-----

Harshini Ramakrishna

A FAST-DEGRADING THIOL-ACRYLATE HYDROGEL AS A CELL CARRIER FOR CRANIOFACIAL BONE REGENERATION.....	228
--	-----

Alarbi Emmakah

MATERIAL DESIGN CONTROLLING OSTEOCLASTIC BIODEGRADATION AND SUBSEQUENT BONE FORMATION UTILIZING BIOACTIVE OCTACALCIUM PHOSPHATE CRYSTALS.....	229
---	-----

Osamu Suzuki

HEATED BLOOD PLASMA AND SERUM – A NEW SHIFTING APPROACH FOR PREPARATION OF BARRIER MEMBRANE AND BONE-GRAFT REPLACING MATERIAL IN THE GUIDE TISSUE REGENERATION IN DENTISTRY.....	230
--	-----

Jasmin Fidoski

DEVELOPMENT OF A SELF-EXPANDING PATCH FOR FETOSCOPIC MYELOMENINGOCELE REPAIR.....	231
---	-----

Rigwed Tatu

***BTI* COMMERCIALIZATION OF BIOMATERIALS AND MEDICAL PRODUCTS**

DEVELOPMENT OF A SPRAYABLE BIOPOLYMER HYDROGEL FOR THE PREVENTION OF POSTOPERATIVE ADHESIONS.....	232
---	-----

Christopher Tison

COMPARATIVE OSTEOINDUCTIVE CHARACTERISTICS OF SILICON NITRIDE, ALUMINA, AND TITANIUM.....	233
---	-----

Bryan McEntire

DYNAMIC, REVERSIBLE 3D CELL CULTURE MATRICES.....	234
---	-----

Kristian Stipe

EXPLOITATION OF BIOMARKERS FOR TRIGGERED DELIVERY OF THERAPEUTICS FROM INFECTION-RESPONSIVE COATING TECHNOLOGY.....	235
---	-----

Nicola Irwin

ACELLULAR BIOMATERIALS FOR MYOCARDIAL REPAIR 2

COMPLEX COACERVATE LOADED WITH PROTEINS FOR GREATER FUNCTIONAL RECOVERY POST-MI	236
<i>Yadong Wang</i>	
SILK-ECM COMPOSITE PATCHES AMELIORATE LEFT VENTRICULAR REMODELING FOLLOWING MYOCARDIAL INFARCTION	237
<i>Whitney Stoppel</i>	
AN INJECTABLE AND THERMOSENSITIVE HYDROGEL CAPABLE OF DUAL DELIVERING MATRIX METALLOPROTEINASE-2 INHIBITOR AND BASIC FIBROBLAST GROWTH FACTOR TO PRESERVE AND VASCULARIZE CARDIAC ECM AFTER MYOCARDIAL INFARCTION	238
<i>Jianjun Guan</i>	
TARGETING EXOSOMES TO MYOCARDIAL INFARCTION IMPROVES CARDIAC REGENERATION FOLLOWING ISCHEMIA/REPERFUSION INJURY	239
<i>Adam Vandergriff</i>	
MYOCARDIAL SCAFFOLD-BASED CARDIAC TISSUE ENGINEERING	240
<i>Jun Liao</i>	
BIODEGRADABLE POLYURETHANE CARDIAC PATCH MECHANICALLY MATCHING WITH NATIVE MYOCARDIUM	241
<i>Cancan Xu</i>	
DECELLULARIZATION OF PORCINE CAROTID ARTERIES FOR TISSUE ENGINEERING	242
<i>Ammar Hassanbhai</i>	
POROUS INJECTABLE BIO-HYBRID HYDROGELS FACILITATE CELL INFILTRATION AND PRO-M2 MACROPHAGE POLARIZATION	243
<i>Yang Zhu</i>	

ADVANCES IN ANTIMICROBIAL BIOMATERIALS

DRY POWDER INHALABLE BACTERIOPHAGE-POLYMERIC PARTICLES REDUCE LUNG CYSTIC FIBROSIS BACTERIAL INFECTIONS	244
<i>Rachit Agarwal</i>	
PEG BOTTLE BRUSH COPOLYMERS FOR LYSIS OF MICROBIAL MEMBRANE MIMICS BY ENTROPIC TEMPLATING	245
<i>Amit Garle</i>	
ANTIMICROBIAL SMART MATERIALS: FROM RESPONSIVE HYDROGELS TO POLYMER-DRUG CONJUGATES	247
<i>Anita Shukla</i>	
EFFECTS OF QUATERNIZED CHITOSAN ON BIOFILM ERADICATION AND PREVENTION	248
<i>Wei Lv</i>	
LYSOSTAPHIN AND BMP-2 CO-DELIVERY REDUCES S. AUREUS INFECTION AND REPAIRS BONE IN A MOUSE MODEL OF BONE REPAIR	249
<i>Christopher Johnson</i>	
NANO-TEXTURED MAGNESIUM OXIDE MICRORODS: THE OPTIMIZATION OF ANTIMICROBIAL ACTIVITY AND THE UTILIZATION IN POLYMER-BASED IMPLANT COATINGS	250
<i>Nemanja Anicic</i>	
BACTERIAL ADHESION ON DUAL FUNCTIONALIZED BIOMATERIAL SURFACES WITH TEXTURING AND NITRIC OXIDE RELEASE	251
<i>Li-Chong Xu</i>	
CALCIUM FLUORIDE COATING WITH BIOCOMPATIBLE AND ANTI-BACTERIAL EFFECT ON TI BY E-BEAM DEPOSITION FOR DENTAL IMPLANT APPLICATION	252
<i>Kwanghee Cheon</i>	

BIOMATERIALS FOR REGENERATIVE ENGINEERING 2

A BIO-INSPIRED HYBRID NANOSACK TO ENHANCE ISLET ENGRAFTMENT IN THE OMENTUM	253
<i>Patrick Hwang</i>	
UTILITY OF VEGF MIMETIC QK PEPTIDE IN A NOVEL LIBRARY OF INJECTABLE HYDROGELS TO PROMOTE VASCULARIZATION	254
<i>Mehdi Nikkhah</i>	
CHONDROGENIC POTENTIAL OF MICROSPHERES ENCAPSULATING DECELLULARIZED CHONDRAL EXTRACELLULAR MATRIX AND THEIR INCORPORATION IN 3D PRINTED SCAFFOLDS FOR THE TREATMENT OF LARGE OSTEOCHONDRAL DEFECTS	255
<i>Paulomi Ghosh</i>	
BIOACTIVE SILK BIOMATERIALS FOR REGENERATIVE ENGINEERING	256
<i>Michael Wöltje</i>	
SYNTHESIS AND CHARACTERIZATION OF INTERCONNECTED MACROPOROUS FIBRIN/PEG-BASED SEMI-INTERPENETRATING POLYMER NETWORKS FOR DERMAL TISSUE ENGINEERING	257
<i>Olfat Gsib</i>	

PROMOTING BIOACTIVE HYDROXYAPATITE NUCLEATION ON MODIFIED POLYURETHANE BY ADOPTING GLYCEROL PHOSPHATE	258
<i>Eun-Ho Song</i>	
‘EASY ACCESS CELLS’ FOR INTRA-OPERATIVE PREPARATION OF CELL-BASED BONE REGENERATIVE CONSTRUCTS	259
<i>Jeroen Jip Van Den Beucken</i>	
PAPER-BASED ENGINEERED BIOMATERIALS	260
<i>Gulden Camci-Unal</i>	

BIOMATERIALS FOR THERAPEUTIC DRUG DELIVERY 3

SYSTEMIC DELIVERY OF GLI-INHIBITOR VIA ROS-RESPONSIVE AND BONE-TARGETED POLYMERIC NANOCARRIERS BLOCKS TUMOR INVASION TO BONE	261
<i>Joseph Vanderburgh</i>	
TRACKING SIRNA-TREATED SUBMANDIBULAR GLAND CELL FATE AND FUNCTION VIA CO-DELIVERY OF 4-HYDROXYTAMOXIFEN	262
<i>Jomy Varghese</i>	
NITRIC OXIDE RELEASING FIBRIN DEGRADATION PRODUCTS FOR INCORPORATION INTO INJECTABLE PEG-FIBRINOGEN HYDROGELS	263
<i>Breanne Spalding</i>	
NITRIC OXIDE RELEASING NANOMATRIX FOR DIALYSIS FISTULA MATURATION ENHANCEMENT	264
<i>Patrick Hwang</i>	
LOCALLY ADMINISTERED LOVASTATIN-ENCAPSULATING POLY(LACTIC-CO-GLYCOLIC) ACID NANOPARTICLES PROTECT AGAINST EXPERIMENTAL AUTOIMMUNE NEURITIS	265
<i>Kelly Langert</i>	
ROLIPRAM-LOADED POLYMERIC MICELLE REDUCES INFLAMMATORY RESPONSE AND APOPTOSIS IN RAT SPINAL CORD	266
<i>Christian Macks</i>	
PHOSPHOLIPID COATINGS RELEASE ACTIVE CONCENTRATIONS OF ANTIBIOTIC AND BIOFILM INHIBITOR	267
<i>Michael Harris</i>	
CONTROLLED RELEASE OF ANTIBIOTIC FROM SYNTHETIC POROUS SCAFFOLDS FOR APPLICATION IN GINGIVAL TISSUE ENGINEERING	268
<i>Meghan Wright</i>	
3D PRINTING FUNCTIONAL BIOMATERIALS & DEVICES	269
<i>M. McAlpine</i>	

DESIGN, FABRICATION AND CHARACTERIZATION OF MULTISCALE AND MULTIFUNCTIONAL BIOMATERIALS 2

USE OF A HIERARCHICAL ELECTROSPUN SCAFFOLD TO MIMIC LIGAMENT STRUCTURAL PROPERTIES AND PROMOTE COLLAGEN DEPOSITION	270
<i>Hannah Pauly</i>	
SYNTHESIS AND CHARACTERIZATION OF ELASTIN-LIKE POLYPEPTIDE-POLYETHYLENEIMINE BLOCK COPOLYMERS FOR USE IN COATINGS	271
<i>Jared Cobb</i>	
HYDROPHOBIC AND ANTIMICROBIAL PEPTIDE-COATED DENTIN FOR LONG-LASTING DENTAL RESTORATIONS	272
<i>Dina Moussa</i>	
NOVEL FIBRIN POLY-DOPAMINE COMPOSITE HYDROGELS FOR MARINE APPLICATIONS	273
<i>Ariana Tyo</i>	
NEW BIO-INSPIRED OXIME CROSSLINKED HYDROGELS FOR ANTI-POSTSURGICAL CARDIAC ADHESIONS	274
<i>Masaki Fujita</i>	
CHITOSAN-BASED HYDROGEL CONTAINING LIPOSOME-LOADED RICINOLEIC ACID FOR TOPICAL APPLICATIONS	N/A
<i>Ahmed Nada</i>	

***BTI* TRANSLATIONAL ORTHOPAEDIC BIOMATERIALS**

MICRORIBBON-BASED HYDROGELS GUIDED MESENCHYMAL STEM CELLS TO UNDERGO ENDOCHONDRAL OSSIFICATION IN VIVO	275
<i>Bogdan Conrad</i>	
CLINICAL TRANSLATION OF POROUS PEEK FOR SPINAL APPLICATIONS: FROM BENCHTOP TO BEDSIDE	276
<i>Frederick Torstrick</i>	

MICRO-AND NANO-SCALE SURFACE TOPOGRAPHIC CHARACTERIZATION OF A NOVEL PEEK TITANIUM STRUCTURAL COMPOSITE	277
<i>Samuel Fang</i>	
ANTIMICROBIAL PEPTIDE KILLS BACTERIA BUT PRESENTS LOW TOXICITY TOWARD HUMAN CELLS	278
<i>Bingyun Li</i>	
EVALUATION OF TRIBOCORROSION KINETICS AND BIOCOMPATIBILITY OF ELECTROCHEMICALLY INDUCED TRIBOLAYER FOR HIP IMPLANTS	279
<i>Mary Lyvers</i>	
NOVEL POROUS FULLY RESORBABLE CALCIUM PHOSPHATE MICROSPHERES FOR ORTHOBIOLOGIC APPLICATIONS	280
<i>Ifty Ahmed</i>	
BIOFILMS IN CHRONIC WOUNDS	281
<i>N/A</i>	

ACTIVE WOUND DRESSINGS FOR ADVANCED WOUND CARE

A NOVEL DUAL-CELL THERAPY FOR CHRONIC WOUNDS	282
<i>Ayesha Aijaz</i>	
MINOCYCLINE ENHANCES THE MESENCHYMAL STROMAL/STEM CELL PRO-HEALING PHENOTYPE IN TRIPLE ANTIMICROBIAL-LOADED HYDROGELS FOR INOCULATED CUTANEOUS WOUND HEALING	283
<i>Alberto Guerra</i>	
GOLD NANOSPHERE MICROGEL COMPOSITES: BIOMIMETIC AND ANTIMICROBIAL	284
<i>Erin Sproul</i>	
ON-DEMAND DISSOLUTION OF A HYDROGEL BURN DRESSING FOR FACILE AND PAIN-FREE DRESSING CHANGES	285
<i>Mark Grinstaff</i>	
A HIGHLY ELASTIC AND ANTIMICROBIAL COMPOSITE HYDROGEL-BASED DRESSING FOR WOUND HEALING	286
<i>Roberto Portillo Lara</i>	
BIOINSPIRED COLLAGEN-TARGETING ADHESIVE HYDROGEL FOR SCARLESS SKIN REGENERATION	287
<i>Hyung Joon Cha</i>	
IMPROVING ON "DISEASE-IN-A-DISH" WITH ENGINEERED NICHE	288
<i>A. Engler</i>	

BIOMATERIALS FOR CARDIOVASCULAR REGENERATION

MICROENGINEERED BIOMIMETIC BLOOD VESSELS: REVASCULARIZING THE INFARCTED HEART	289
<i>Teng Su</i>	
FIRST-ORDER MAPPING OF EPICARDIAL ELASTIN NETWORK IN PORCINE HEARTS	290
<i>Jun Liao</i>	
NOVEL NANOMATRIX REDUCES INFLAMMATION IN DYNAMIC CONDITIONS IN VITRO AND DILATES ARTERIES EX VIVO	291
<i>Grant Alexander</i>	
ANTIBODY-BASED TARGETING OF ELASTIC MATRIX REGENERATIVE NANOPARTICLES TO AORTIC ANEURYSMS	292
<i>Jonathan Fox</i>	
ISOLATING RARE CELLS THROUGH ANTIGEN SPECIFIC HYDROGEL ENCAPSULATION	293
<i>Anuhya Gottipati</i>	
BIOENGINEERING OF CARDIAC TISSUE CONSTRUCTS WITH ADULT CARDIOMYOCYTES	294
<i>Ze-Wei Tao</i>	

ENGINEERED BIOMATERIALS FOR NEURAL APPLICATIONS 2

THE EFFECT OF PEPTIDE AFFINITY IN NEURAL STEM CELL MECHANOSENSING	295
<i>Jessica Stukel</i>	
AN INTRAOCULAR DRUG DELIVERY SYSTEM USING TARGETED NANOCARRIERS ATTENUATES RETINAL GANGLION CELL DEGENERATION	296
<i>Shaoqin Gong</i>	
COMBINING HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED NEURONAL GRAFTS WITH LOCAL DELIVERY OF CHONDROITINASE ABC FOR TREATMENT OF SPINAL CORD INJURY	297
<i>Tobias Fuehrmann</i>	
BLENDED POLYESTER NANOPARTICLES TO MODULATE RETINOID SIGNALING IN A TRANSGENIC MURINE MODEL OF ALS	298
<i>David Medina</i>	

ENHANCING PERIPHERAL NERVE REGENERATION THROUGH NANOFIBERS, MICROSPHERES AND PHYSICAL THERAPY	299
<i>Harini Sundararaghavan</i>	
RELEASE PROFILE OF EXOGENOUS SDF-1 DIFFERENTIALLY AFFECTS CORTICAL SDF-1/CXCR4 SIGNALING IN VIVO	300
<i>Dipankar Dutta</i>	
MAGNETIC ALIGNMENT OF ELECTROSPUN POLY-L LACTIC ACID FIBERS FOR DIRECTED CELL GUIDANCE AFTER SPINAL CORD INJURY	301
<i>Christopher Johnson</i>	
MECHANICALLY-TUNABLE EXTRACELLULAR MATRIX HYDROGEL SCAFFOLD FOR USE IN A TISSUE-ENGINEERED ELECTRONIC NERVE INTERFACE (TEENI)	302
<i>Benjamin Spearman</i>	
THE USE OF ACOUSTIC RADIATION FORCE WITH CELL-LOADED HYDROGELS FOR BONE REPAIR	303
<i>N/A</i>	

EVALUATION OF TISSUE ENGINEERING CONSTRUCTS

EVALUATION OF BIODEGRADABLE HYDROGELS IN A FEMORAL BONE PLUG MODEL	304
<i>David Puleo</i>	
CONTROLLED BMP2 RELEASE FROM KERATIN-BASED HYDROGELS MODULATES OSTEOINDUCTION	305
<i>Sharon Hyzy</i>	
DESIGN, FABRICATION, AND CHARACTERIZATION OF MICROSCALE BICUSPID VALVES 3D PRINTED IN BIOCOMPATIBLE HYDROGELS	306
<i>Samantha Paulsen</i>	
CYTOCOMPATIBILITY OF HAFNIUM OXIDE (HFO₂) NANOPARTICLES FOR DIAGNOSTIC IMAGING AND SENSING	307
<i>Tracie McGinnity</i>	
INVESTIGATING OXYGEN DYNAMICS OF STEM CELLS IN A MINERALIZED OSTEOGENIC SCAFFOLD	308
<i>Mrignayani Kotecha</i>	
NON-INVASIVE FRACTURE PROPERTY ANALYSIS OF LUMBAR VERTEBRAE AFFECTED BY OSTEOPOROSIS	309
<i>Marianna Oppenheimer-Velez</i>	

INJECTABLE BIOMATERIALS FOR DELIVERY OF CELL, GENE AND PROTEIN THERAPY

INTRAMUSCULAR INJECTION OF STEM CELLS IN AN IN SITU-GELLING HYDROGEL SCAFFOLD: CELL RETENTION, ANGIOGENESIS, AND INFLAMMATION	310
<i>Stuart Young</i>	
M1 MACROPHAGE-LOADED HYDROGELS REDUCE THE VIABILITY AND PROLIFERATION OF HEPATOCELLULAR CARCINOMA IN VITRO AND IN VIVO	311
<i>Alberto Guerra</i>	
INJECTABLE GUEST-HOST HYDROGELS FOR CELL AND IL-10 CO-DELIVERY TO THE HEART	312
<i>Minna Chen</i>	
INJECTABLE BIOMIMETIC LIQUID CRYSTALLINE SCAFFOLDS ENHANCE MUSCLE STEM CELL TRANSPLANTATION	313
<i>Benjamin Cosgrove</i>	
INJECTABLE AND INHERENTLY VASCULARIZING SIPN FOR DELIVERING CELLS TO THE SUBCUTANEOUS SPACE	314
<i>Redouan Mahou</i>	
BIODEGRADABLE, IMAGABLE, INJECTABLE, AND THERMOSENSITIVE HYDROGELS FOR CARDIAC CELL THERAPY	315
<i>Hong Niu</i>	
MULTIFUNCTIONAL BIODEGRADABLE POROUS MICROSPHERES TO ACT AS STEM CELL DELIVERY VEHICLES AND LOCAL DRUG DELIVERY PLATFORM FOR BONE TISSUE REGENERATION	316
<i>Eric Sandhurst</i>	
CHARACTERIZATION OF PROTEIN INTERACTIONS WITH MOLECULARLY IMPRINTED HYDROGELS THAT POSSESS ENGINEERED AFFINITY FOR HIGH ISOELECTRIC POINT BIOMARKERS	317
<i>John Clegg</i>	

***BTI* COMMERCIALIZATION OF BIOMATERIALS AND MEDICAL PRODUCTS**

BIOMINERAL COATING PROMOTES OSTEOSTIMULATORY RESPONSES OF PEEK IMPLANTS	318
<i>Leena Jongpaiboonkit</i>	

A DATA ANALYTICS APPROACH FOR OPTIMIZATION OF HERNIA MESH FOR VENTRAL HERNIA REPAIR THROUGH THE IDENTIFICATION OF PATIENT SUBPOPULATIONS AND THE CORRELATION OF PATIENT OUTCOMES TO IMPLANT MATERIAL	319
<i>Rachel Slappy</i>	
SYNTHESIS, DEGRADATION, AND MECHANICAL PROPERTIES OF STRATAPRENE® 3534, AN ELASTIC-LIKE BIORESORBABLE POLYMER	320
<i>Seth McCullen</i>	
MECHANICAL AND MICROSTRUCTURAL ANALYSIS OF AN EXPANDABLE VASCULAR CONDUIT FOR PEDIATRIC CARDIOVASCULAR SURGERY	321
<i>Denver Faulk</i>	
SUPERCRITICAL FLUID PROCESSING APPLICATIONS IN BIOMATERIALS	322
<i>Michael Favaloro</i>	

ACTIVE WOUND DRESSINGS FOR ADVANCED WOUND CARE

PH SENSITIVE METHACRYLATED CHITOSAN HYDROGELS WITH TUNABLE PHYSICAL AND CHEMICAL PROPERTIES	324
<i>Lida Zhu</i>	
RAPID HEMOSTASIS WITHOUT COMPRESSION USING A NOVEL COMPOSITE BIOPOLYMER GEL	325
<i>Omar Ahmad</i>	
A COLLAGEN-BASED CELL SPRAY ADHESIVE	326
<i>Cheryl Simpliciano</i>	
ANTIBACTERIAL AND BIOCOMPATIBLE HYALURONIC ACID-CALCIUM FLUORIDE NANOCOMPOSITE HYDROGEL FOR EFFECTIVE WOUND HEALING	327
<i>Seol-Ha Jeong</i>	
MULTIFUNCTIONAL BIOPOLYMER HYDROGEL FOR DIABETIC FOOT ULCER TREATMENT	328
<i>Abitha Heimback</i>	
CHARACTERIZATION OF NOVEL SOL-GEL DERIVED BIOACTIVE GLASS FORMULATIONS FOR HEMOSTATIC AND BONE GRAFTING APPLICATIONS	329
<i>Chloë Goldbach</i>	
FLUORIDE RELEASING ALGINATE COMPOSITE HYDROGEL FOR ANTIBACTERIAL WOUND DRESSING	330
<i>Da Yong Shin</i>	
EVALUATION OF ELECTROSPUN SCAFFOLDS FOR CLOSING FULL AND PARTIAL THICKNESS WOUNDS	331
<i>Robert Diller</i>	
CHARACTERISTICS OF BIOLOGICAL SKIN SUBSTITUTE DERIVED FROM BIOACTIVE COLLAGEN MATRIX TO TREAT WOUNDS AND ULCERS	332
<i>Subramanian Gunasekaran</i>	

BIOMATERIALS AND MEDICAL PRODUCTS COMMERCIALIZATION

INVESTIGATING A CHANDLER LOOP SYSTEM FOR THROMBOGENICITY TESTING OF BIOMATERIALS	333
<i>Jessica Yau</i>	
EFFECT OF SODIUM AZIDE CONCENTRATION ON WEAR AND BACTERIA GROWTH IN A KNEE SIMULATION TEST	334
<i>Amber Metcalfe</i>	
NOVEL CYANOACRYLATE MONOMERS FOR INTERNAL WOUND APPROXIMATION: A PRELIMINARY STUDY	335
<i>Kyle Garcia</i>	
FACTORS INFLUENCING ANCHORING PERFORMANCE OF POLYDIOXANONE BARBED SURGICAL SUTURES	336
<i>Hui Cong</i>	
EFFICACY OF THE MIXTURE OF HYALURONIC ACID AND HYDROXYETHYL STARCH IN PREVENTION OF ADHESION AFTER ENDOSCOPIC SINUS SURGERY	337
<i>Kyung-Su Kim</i>	

BIOMATERIAL-TISSUE INTERACTION

ESTIMATING WORST-CASE NI RELEASE IN BENCHTOP STUDIES OF NITINOL	338
<i>Eric Sussman</i>	
HISTOLOGICAL ANALYSIS OF SUBCUTANEOUSLY IMPLANTED PEG-COLLAGEN WITH CROSSLINKED CHONDROMODULIN-1 AND VEGF-C	339
<i>Liam Lang</i>	
SELF-ASSEMBLED BIONANOMATRIX COATED COILS FOR INTRACRANIAL ANEURYSM HEALING	340
<i>Patrick Hwang</i>	

ADHESIVE ALGINATE-BASED PATCH SYSTEM FOR LUNG TISSUE REPAIR	341
<i>Spencer Fenn</i>	
DEVELOPING A MOBILEHEALTH SOLUTION FOR TREATMENT OF PLANTAR FASCIITIS	342
<i>John McGreevey</i>	
ENGINEERING A HIGHLY ELASTIC PROTEIN-BASED SURGICAL SEALANT	343
<i>Nasim Annabi</i>	
COMPARATIVE PRESSURE ANALYSIS OF BIOMATERIAL SOLUTIONS IN PIG URINARY BLADDERS	344
<i>Horacio Reyna</i>	
HOST RESPONSE AND DEGRADATION PROFILE FOR SYNTHETIC SURGICAL MESHES USED IN ABDOMINAL WALL REPAIR	345
<i>Maryellen Sandor</i>	
MODULATION OF HUMAN STEM CELL BEHAVIOR USING MONOLAYER BINARY COLLOIDAL CRYSTALS	346
<i>Peng-Yuan (George) Wang</i>	
SYSTEMS ANALYSIS IDENTIFIES CORE COMPONENTS OF FOREIGN BODY RESPONSE TO BIOMATERIAL IMPLANTS	348
<i>Joshua Doloff</i>	

GLYCOMATERIALS

CHITOSAN HYDROGEL IS MORE EFFECTIVE THAN CHITOSAN FLUID TO PREVENT POSTSURGICAL ABDOMINAL ADHESION FORMATION	349
<i>Yu-Long Sun</i>	

***BTI* COMMERCIALIZATION OF BIOMATERIALS AND MEDICAL PRODUCTS**

THIXOTROPIC HYDROGELS FOR ANTIBACTERIAL APPLICATION	350
<i>Kristian Stipe</i>	

ADVANCES IN ANTIMICROBIAL BIOMATERIALS

THE EFFECT OF NANOGRATINGS ON BACTERIAL ATTACHMENT AND AGGREGATION	351
<i>Chang Quan Lai</i>	
SYNERGISTIC EFFECTS OF NO-RELEASING POLYMER WITH SURFACE CROSS-LINKED POLYZWITTERION FOR ANTIMICROBIAL APPLICATION	N/A
<i>Priyadarshini Singha</i>	
ANTIBACTERIAL POTENTIAL OF PLATELET LYSATE MEMBRANES FOR ORTHOPEDIC APPLICATIONS	352
<i>Raquel Costa-Almeida</i>	
BACTERIOSTATIC CHARACTERISTICS OF SILICON NITRIDE, POLYETHERETHERKETONE, AND TITANIUM BIOMATERIALS	353
<i>Bryan McEntire</i>	
ANTIBACTERIAL PROPERTIES OF MAGNESIUM AND PLATINUM DOPED HYDROXYAPATITE NANOPARTICLES	354
<i>Jeniffer Caballero Sarmiento</i>	
PREPARATION AND CHARACTERISATION OF ACRYLATE-BASED MICROPARTICLES, OF VARYING COMPOSITIONS AND SIZES, FOR PHOTOSENSITISER INCORPORATION	355
<i>Jessica Moore</i>	
STABLE ENCAPSULATION OF TRIANGULAR SILVER NANOPLATES WITH A SILICA SHELL FOR TARGETED AND PHOTOTHERMAL	356
<i>Chih-Sheng Chiang</i>	
ANTIMICROBIAL ACTIVITIES OF SILVER NANOPARTICLE IMPREGNATED POLY(GLYCEROL SEBACATE) COATING	N/A
<i>Ming Fang</i>	
AMINO ACID – BASED ZWITTERIONIC ANTIFOULING POLYMERS: DEVELOPMENT, BIOFOULING PROPERTIES AND APPLICATIONS	357
<i>Lingyun Liu</i>	

BIOMATERIALS FOR IMMUNOTHERAPY

THE EFFECT OF POLYANHYDRIDE CHEMISTRY IN PARTICLE-BASED CANCER VACCINES ON THE MAGNITUDE OF THE ANTITUMOR IMMUNE RESPONSE	358
<i>Emad Wafa</i>	
DEVELOPMENT OF IL-2 ENCAPSULATED LIPOSOMES FOR TARGETED T-CELL PROLIFERATION AND CANCER IMMUNOTHERAPY	N/A
<i>Nitin Agrawal</i>	

PHOTOTHERMAL THERAPY IN COMBINATION WITH IMMUNOTHERAPY TO INHIBIT CANCER GROWTH AND METASTASIS	359
<i>Jun Chen</i>	

DELIVERY OF THERAPIES TO SUPPRESS AUTOIMMUNITY AND ENHANCE TRANSPLANT PERFORMANCE

DEVELOPMENT OF TACROLIMUS-LOADED POLYMERIC LOCAL DELIVERY SYSTEM FOR IMMUNOSUPPRESSION	360
<i>Joseph Molde</i>	
DRUG DELIVERY BY TRANSPLANTED ISLETS	361
<i>Robert Kane</i>	
IMMUNE-SUPPRESSIVE HYDROGELS FOR STEM CELL THERAPY AFTER TRAUMATIC BRAIN INJURY	362
<i>Melissa Alvarado-Velez</i>	
GENERATING INJECTABLE, FUNCTIONAL THYMUS ORGANOID WITH SELF-ASSEMBLING HYDROGEL TO RESTORE ADAPTIVE IMMUNE FUNCTION	363
<i>Stephanie Wong-Noonan</i>	

ENGINEERING MATERIALS AND DELIVERY SYSTEMS FOR MODERN VACCINES

DENDRITIC CELL TARGETED NANO-VACCINE DELIVERY SYSTEM ENGINEERED FROM A PLANT POLYMER BASED TOLL-LIKE RECEPTOR-4 AGONIST INULIN ACETATE	364
<i>Siddharth Kesharwani</i>	
PH-INDUCED VOMOCYTOSIS FOR INTRA-LYMPH NODAL DELIVERY OF MICROPARTICLE VACCINES	365
<i>Amir Bolandparvaz</i>	
HARNESSING CONTROLLED RELEASE POLYMER-NANOPARTICLE HYDROGEL TO PRODUCE ROBUST LONG-TERM IMMUNITY	366
<i>Gillie Agmon</i>	
SUNITINIB-LOADED POLYMERIC NANOPARTICLES TO DEplete MYELOID-DERIVED SUPPRESSOR CELLS AND ENHANCE THE EFFICACY OF A CANCER IMMUNOTHERAPY	367
<i>Cristina Maria De Barros</i>	

IMMUNOMODULATION IN REGENERATIVE MEDICINE

THE EFFECT OF CELL DEBRIS WITHIN BIOLOGIC SCAFFOLDS UPON THE HOST RESPONSE	368
<i>Ricardo Londono</i>	
DIFFERENTIATION AND HETEROGENEITY OF BIOMATERIAL-INDUCED MULTINUCLEATED GIANT CELLS: CONNECTION BETWEEN INFLAMMATION AND TISSUE REGENERATION	369
<i>Mike Barbeck</i>	
KERATIN BIOMATERIALS AUGMENT ANTI-INFLAMMATORY MACROPHAGE PHENOTYPE IN-VITRO	370
<i>Michele Waters</i>	
THE EFFECT OF METHACRYLATE ANHYDRIDE MODIFIED GELLAN GUM HYDROGELS ON BOTH MACROPHAGE AND FIBROBLAST PHENOTYPES	371
<i>Zhuqing Li</i>	
ESTABLISHMENT OF NF-KB SENSING AND IL-4 SECRETING MESENCHYMAL STEM CELLS AS AN "ON-DEMAND" DRUG DELIVERY SYSTEM TO MODULATE INFLAMMATION	372
<i>Tzu-Hua Lin</i>	
ROLE OF MACROPHAGE-PRODUCED CYTOKINES BY STIMULATION OF CALCIUM PHOSPHATE CERAMICS IN THE MATERIAL-MEDIATED OSTEOBLASTIC DIFFERENTIATION OF MESENCHYMAL STEM CELLS	373
<i>Xiangdong Zhu</i>	
PROSTAGLANDIN IMMOBILIZED SCAFFOLD REGULATE INFLAMMATION AND OSTEOGENESIS IN BONE REGENERATION	374
<i>Yangxi Liu</i>	
TREATMENT OF PARTICLE INDUCED OSTEOLYSIS WITH DELAYED IL-4 DELIVERY IN A NOVEL MURINE MODEL	375
<i>Jukka Pajarinen</i>	
A GOLD NANOPARTICLE-BASED TRANSFECTION AGENT TO DIRECT MACROPHAGE POLARIZATION	376
<i>Chelsea Kraynak</i>	
DEVELOPMENT OF A CLINICALLY RELEVANT RABBIT SURGICAL MODEL FOR INVESTIGATION OF THE HOST RESPONSE TO POLYPROPYLENE MESH FOR PELVIC ORGAN PROLAPSE	377
<i>Aimon Iftikhar</i>	

GENE EXPRESSION OF MACROPHAGE PHENOTYPE PROFILE REGULATED BY DIFFERENT MATRICES	378
<i>Hui Li</i>	
IMMUNOMODULATORY EFFECT OF AMINO ACID BASED POLYURETHANES	379
<i>Melissa González-Rendón</i>	

MODULATING IMMUNE MICROENVIRONMENTS USING BIOMATERIALS

LYMPH NODE STIFFNESS MIMICKING HYDROGELS REGULATE HUMAN B CELL LYMPHOMA GROWTH AND CELL SURFACE RECEPTOR EXPRESSION IN A MOLECULAR SUBTYPE-SPECIFIC MANNER	380
<i>Ankur Singh</i>	
IMMUNO-NANOTHERAPEUTICS TO IMPROVE THE TUMOR MICROENVIRONMENT IN NON-SMALL CELL LUNG CANCERS	381
<i>Dhruv Seshadri</i>	
CROSS-TALK BETWEEN SMOOTH MUSCLE CELLS AND MONOCYTES ON COBALT CHROMIUM ALLOY	382
<i>Jordan Anderson</i>	
IMMUNE RESPONSE OF CHITOSAN NANOPARTICLES FUNCTIONALIZED WITH DIFFERENT PROTEINS IN HUMAN WHOLE BLOOD	383
<i>Yixian Zhang</i>	
IN VIVO EFFECT OF LOCALLY-DELIVERED RESOLVIN D1 ON CYTOKINE PRODUCTION AND MACROPHAGE ACTIVATION	384
<i>Kamel Alkhatib</i>	
LYMPH NODE TARGETING NANOPARTICLE VACCINE DELIVERY PLATFORM FOR MALARIA TRANSMISSION BLOCKING VACCINES	385
<i>Gregory Howard</i>	
DYNAMIC MATRIX STIFFENING REDUCES MACROPHAGE ABILITY TO POLARIZE TO AN INFLAMMATORY PHENOTYPE	386
<i>Shane Allen</i>	
MODULAR, INTEGRIN LIGAND-SPECIFIC IMMUNE ORGANIDS DIFFERENTIALLY REGULATE EX VIVO B CELL ACTIVATION	387
<i>Shivem Shah</i>	
GUT MICROBIOME AND ASSOCIATED SYSTEMIC INFLAMMATION REGULATES TRAFFICKING OF ENGINEERED NANOVACCINES	388
<i>Matthew Mosquera</i>	
FREE RADICAL MODULATING NANOPARTICLES INDUCE INNATE IMMUNE RESPONSE	389
<i>Shilpa Sant</i>	

TECHNOLOGY DEVELOPMENT/NEW BIOMATERIALS FOR IMMUNE ENGINEERING

IMPACT OF MOLECULAR WEIGHT ON THE INTRINSIC IMMUNOGENICITY OF RAPIDLY-DEGRADABLE POLYMERIC CARRIERS	390
<i>Christopher Jewell</i>	
SYNERGISTICALLY SYNERGISTICALLY TRANSCUTANEOUS IMMUNOTHERAPY ENHANCES ANTITUMOR IMMUNE RESPONSES THROUGH BLOCKADE OF PD1 AND IDO	391
<i>Yanqi Ye</i>	
SYNTHETIC MULTIVALENT NANOBODIES FOR MYELOID DERIVED SUPPRESSOR CELL DEPLETION IN CANCER IMMUNOTHERAPY	392
<i>Jiaying Liu</i>	
SUBLINGUAL ADMINISTRATION OF ADJUVANTED PEPTIDE OR PEPTIDE NANOFIBERS ELICITS ANTIGEN-SPECIFIC CD4 T CELLS	393
<i>Sean Kelly</i>	
ENHANCED TUMOR IMMUNOTHERAPY MEDIATED BY NANOELLISPOIDAL ARTIFICIAL ANTIGEN PRESENTING CELLS	394
<i>Randall Meyer</i>	
NOVEL POLY (ETHYLENE GLYCOL) HYDROGEL WITH SPATIALLY CONTROLLED DEGRADATION PROMOTES OVARIAN ENDOCRINE FUNCTION IN MICE	395
<i>James Day</i>	
SYNTHETIC POLY (ETHYLENE GLYCOL)-VINYL SULFONE AND THERACYTE IMMUNOISOLATES ALLOGENEIC OVARIAN TISSUE AND RESTORES ENDOCRINE FUNCTION IN OVARIECTOMIZED MICE	396
<i>Anu David</i>	
A NOVEL “ANTI-VACCINE” FOR THE TREATMENT OF COLLAGEN-INDUCED ARTHRITIS	397
<i>Riley Allen</i>	

SURFACE CHARACTERIZATION AND MODIFICATION

OSTEOCLASTOGENESIS ON POLYDOPAMINE AND POLYPHENOL FUNCTIONALIZED TITANIUM SURFACES	N/A
<i>Chris Steffi</i>	
SURFACE MODIFIED SILICONE HYDROGELS VIA DENSELY GRAFTED 2-METHACRYLOYLOXYETHYL PHOSPHORYLCHOLINE POLYMERS	398
<i>Alysha Spadafora</i>	
FUNCTIONALIZATION OF BOVINE PERICARDIUM WITH CARBON DIOXIDE COLD PLASMA	399
<i>Lenaldo Rocha</i>	
ADSORBING GLYCOCALYX-INSPIRED DENSE GLYCOSAMINOGLYCAN BRUSHES: TOWARDS IMPROVED BLOOD-COMPATIBILITY	400
<i>Mohammadhasan Hedayati</i>	
SURFACE CHANGES ON TITANIUM AFTER ELECTRICAL CURRENT STIMULATION IN A SIMULATED PHYSIOLOGICAL MEDIUM	N/A
<i>Leticia Bins-Ely</i>	

DENTAL/CRANIOFACIAL BIOMATERIALS

MEMBRANE ENRICHED WITH GRAPHENE FOR GUIDED BONE REGENERATION STRONGLY IMPROVE OSTEOGENIC COMMITMENT OF GINGIVAL DERIVED STEM CELLS AND SUPPORT THE REGENERATION	401
<i>Barbara Zavan</i>	
NANOMETRIC HYDROXYAPATITE COVERED IMPLANT SURFACE EVALUATED BY BONE REGENERATION RELATED GENE EXPRESSION. IN VIVO STUDY IN HEALTHY AND DIABETIC RATS	402
<i>Sergio Souza</i>	
NOVEL FIR TYPE OF BIOCERAMICS (A MATERIAL OF EMITTING HIGH PERFORMANCE FAR-INFRARED RAY IRRADIATION) – POTENTIALITY FOR USING AS BONE TISSUE SCAFFOLD IN DENTISTRY	403
<i>Jasmin Fidoski</i>	
A COMPARATIVE STUDY ON THE USE OF TILAPIA COLLAGEN MEMBRANES FOR GUIDED BONE REGENERATION	404
<i>Chau Sang Lau</i>	
FINITE ELEMENT METHODS FOR BIOMECHANICAL SIMULATION OF TEMPOROMANDIBULAR PROSTHESIS	405
<i>Yriu Rodrigues</i>	
NEWLY DEVELOPED FIR BIOCERAMICS-BASED ROOT CANAL SEALERS (A MATERIAL OF EMITTING HIGH PERFORMANCE FAR-INFRARED RAY IRRADIATION) – IN VIVO STUDY ON THE BIOCOMPATIBILITY	406
<i>Jasmin Fidoski</i>	
NEW CALCIUM PHOSPHATE BIOCERAMIC FOR BONE REGENERATION: A STUDY IN RABBIT CRITICAL-SIZED CALVARIAL DEFECTS	407
<i>Fernando Guastaldi</i>	
FINITE ELEMENT METHODS FOR BIOMECHANICAL SIMULATION OF TEMPOROMANDIBULAR PROSTHESIS	408
<i>Yriu Rodrigues</i>	
QUALITY OF OSTEOINTEGRATION SURROUNDING DENTAL IMPLANTS AFFECTED BY SURFACE MODIFICATION: A NANOINDENTATION STUDY	409
<i>Ryan Doud</i>	
EFFECT OF GELLING AGENT'S VISCOSITY ON THE TEAR STRENGTH OF IRREVERSIBLE HYDROCOLLOID DENTAL IMPRESSION MATERIALS	410
<i>Volkan Sahin</i>	

BIOMATERIALS WITH DYNAMIC PROPERTIES

IN VITRO EFFECTS OF SHORT TERM MAGNETIC STIMULATION AND NANOPARTICLE LOADING ON MESENCHYMAL STEM CELL BEHAVIOR	411
<i>Adedokun Adedoyin</i>	
PERMEABILITY, MECHANICAL STRENGTH AND MAGNETIC PROPERTIES OF MAGNETIC BACTERIAL NANOCELLULOSE COMPOSITES	412
<i>Sandra Arias</i>	
IN VITRO MECHANICAL PROPERTIES OF HIGH GLYCOLIDE CONTENT MONOFILAMENTS	413
<i>Veronica Rodriguez-Rivera</i>	
THE EFFECTS OF ULTRASOUND STIMULATION ON PLATELET-LIKE-PARTICLE MEDIATED MATRIX DEFORMATION	414
<i>Seema Nandi</i>	

GUIDED OSTEOGENIC DIFFERENTIATION OF MESENCHYMAL STEM CELLS VIA TUNING MINERALIZED SCAFFOLD ARCHITECTURE ON THE BASIS OF POROSITY AND SURFACE ROUGHNESS	415
<i>Melissa Krebs</i>	
NANOSCALE DRUG RELEASE VEHICLES FOR TARGETING KINASE PATHWAYS IN TUMOR CELLS	416
<i>Ipsita Banerjee</i>	
TEMPORAL REGULATION OF HYDROGEL STIFFNESS THROUGH ORTHOGONAL ENZYMATIC REACTIONS	417
<i>Matthew Arkenberg</i>	
CHEMICAL AND STRUCTURAL ANALYSIS OF OSSEOUS TISSUE WITHIN SYNTHETIC INTERVERTEBRAL SPINAL SPACERS	418
<i>Bryan McEntire</i>	
ENDOTOX REMOVAL FROM TYPE A GELATIN USING SURFACTANTS	N/A
<i>Jos Olijve Olijve</i>	

CANCER NANOTECHNOLOGY

THE COMBINATION OF BIBF 1120 (BIBF) AND PACLITAXEL (PTX) INDEPENDENTLY LOADED IN PLGA NANOPARTICLES AS A TREATMENT FOR ENDOMETRIAL CANCER (EC)	419
<i>Kareem Ebeid</i>	
NANOBODY-CONJUGATED, QUANTUM DOT-BASED UNIMOLECULAR MICELLES FOR TARGETED TRIPLE NEGATIVE BREAST CANCER THERAPY	420
<i>Shaoqin Gong</i>	
PHOTO-TRIGGERED N₂-GENERATING SUBMICROPARTICLES FOR CANCER CELL KILLING	421
<i>Weijun Tong</i>	
AUNR@MSIO₂@AU THERANOSTICS FOR CANCER SERS DETECTION AND COMBINED THERAPY	422
<i>Qingwen Guan</i>	
PH-SENSITIVE OXIDATIVE STRESS-INDUCING POLYSACCHARIDE NANOPARTICLES AS ANTICANCER THERAPEUTICS	423
<i>Eunmi Hong</i>	
DESIGN OF 3D BONE MIMETIC SCAFFOLDS FOR BONE TISSUE REGENERATION AND CANCER METASTASIS MODELS	N/A
<i>Kalpana Katti</i>	
ELECTRODEPOSITED MAGNETIC NANOWIRES SHOW POTENTIAL AS MAGNETIC RESONANCE IMAGING CONTRAST AND MAGNETIC HYPERTHERMIA PARTICLES	424
<i>Daniel Shore</i>	
BIFUNCTIONAL GOLD NANOPARTICLE FOR TRACKING CANCER AND TREATMENT BY PHOTOTHERMAL THERAPY	425
<i>Kabir Dhada</i>	
OPTICAL SURVEILLANCE OF MULTI-ORGAN METASTASES VIA RARE EARTH ALBUMIN NANOCOMPOSITES AS CANCER THERANOSTICS	426
<i>Harini Kantamneni</i>	
BINDING KINETICS AND ISOTHERM OF IMMUNOTARGETED AU NPS FOR HER2+ BREAST CANCER CELLS	427
<i>Tracie McGinnity</i>	
QUANTITATIVE MOLECULAR IMAGING OF BREAST MICROCALCIFICATIONS USING TARGETED GOLD NANOPARTICLES AND SPECTRAL CT	428
<i>Lisa Irimata</i>	

CELL MIGRATION AND BIOMATERIALS

GRADIENT BIOMATERIALS MEDIATE THE RATE AND DIRECTION OF CELL MIGRATION	429
<i>Changyou Gao</i>	
IN VITRO 3D MODEL FOR GLIOBLASTOMA CELL MIGRATION: THE ROLE OF CELL-MATRIX INTERACTION	430
<i>Yixiao Cui</i>	
ENGINEERED NANO-CLAY BASED 3D TUMOR MODEL AS A TEST-BED TO EVALUATE MESENCHYMAL TO EPITHELIAL TRANSITION (MET) IN PROSTATE CANCER METASTASIS	431
<i>Md Shahjahan Molla</i>	
MODULATION OF THE STIFFNESS GRADIENT ON THE SURFACE OF POLYACRYLAMIDE SUBSTRATE TO REGULATE THE MIGRATION OF OSTEOBLAST PRECURSOR CELLS	432
<i>Koji Yamamoto</i>	
TOWARDS THE MECHANISM OF FIBROBLAST CONTACT GUIDANCE IN ALIGNED FIBER NETWORKS	433
<i>Alex Nelson</i>	

DESIGN, FABRICATION AND CHARACTERIZATION OF MULTISCALE AND MULTIFUNCTIONAL BIOMATERIALS

MICRON/NANO HIERARCHICAL TOPOGRAPHY OF TITANIUM SURFACE INFLUENCES ADHESION AND MULTI-DIFFERENTIATION BEHAVIOURS OF MESENCHYMAL STEM CELLS	434
<i>Takao Hanawa</i>	
GRID PATTERNS ON TITANIUM SURFACE PROMOTE ADHESION AND DIFFERENTIATION OF MESENCHYMAL STEM CELLS	435
<i>Peng Chen</i>	
CHARACTERISTIC DIFFERENCES BETWEEN WATER DIALYZED AND BUFFER DIALYZED KERATOSE BIOMATERIAL	436
<i>Nils Potter</i>	
ANALYSIS OF BIOACTIVITY AND CYTOTOXICITY IN CA-P COATINGS WITH SI AND AG INCLUSION OBTAINED BY PLASMA ELECTROLYTIC OXIDATION ON Ti6Al4V	437
<i>Sara Leal Marin</i>	
HYDROGEL MATERIALS INTERACTING WITH POLYSACCHARIDE WETTING AGENTS FOR CONTACT LENS APPLICATION	438
<i>Lina Liu</i>	
NEAR SUPERHYDROPHOBIC SURFACE REDUCES SHEAR-INDUCED RED BLOOD CELL DAMAGE	439
<i>Chang Quan Lai</i>	
SWITCHABLE POLYMER BRUSHES FOR CONTROLLED DETECTION OF HEPATITIS C VIRUS	440
<i>Serkan Demirci</i>	
SURFACE CHARACTERISTIC DEPENDENT EX SITU AND IN VITRO BIOCOMPATIBILITY ANALYSIS OF NITI ALLOYS	N/A
<i>Mine Toker</i>	
TAILORING MECHANICAL PROPERTIES AND PROTEIN RELEASE OF ALGINATE-CHITOSAN POLYELECTROLYTE COMPLEXES	441
<i>Nathan Fletcher</i>	
GOLD NANOROD CORE-MESOPOROUS SILICA SHELL NANODEVICE FOR CANER TARGETING, IMAGING AND CONTROLLED DRUG RELEASE	442
<i>Qingwen Guan</i>	
CATECHOL-MODIFIED LAYER-BY-LAYER ASSEMBLY: A FISH-NET LIKE MODEL WITH ENHANCED STABILITY AND FACILE LOADING OF COPPER IONS FOR IN-SITU CATALYTIC GENERATION OF NITRIC OXIDE	443
<i>Rifang Luo</i>	
POLYETHYLENIMINE MEDIATED SYNTHESIS OF GOLD NANOPARTICLES FOR BIOMEDICAL APPLICATIONS	444
<i>Prem Pandey</i>	
RECOMBINANT HUMAN HAIR KERATINS FOR THE DEVELOPMENT OF TAILORED BIOMATERIALS	446
<i>Rachael Parker</i>	
A MECHANISTIC EVALUATION OF INTRINSIC CROSSLINKING PROPERTIES AND SYNTHESIS PROCEDURES FOR KERATIN-BASED MICROPARTICLES	447
<i>Marc Thompson</i>	
COMPUTERIZED ROTATIONAL JET SPRAYING OF POLYMERS FOR BIOFABRICATION OF COMPOSITE TUBULAR SCAFFOLDS	448
<i>Umit Erol</i>	
EVALUATION OF TITANIUM DIOXIDE SURFACE PROPERTIES: EFFECTS ON BONE-FORMING AND SOFT TISSUE CELL ATTACHMENT AND HEALING ABUTMENT RETRIEVAL ANALYSIS	N/A
<i>Sutton Wheelis</i>	
DECOUPLING BULK PROPERTIES FROM THE CELLULAR MICROENVIRONMENT	449
<i>Brad Berron</i>	
IMPROVING GELATION EFFICIENCY OF VISIBLE LIGHT POLYMERIZED THIOL-NORBORNENE HYDROGELS VIA ADDITION OF SOLUBLE TYROSINE	450
<i>Hung-Yi Liu</i>	
MULTISCALE MODELING APPROACH FOR THE DESIGN OF BIOMATERIALS AND SCAFFOLDS FOR BONE TISSUE ENGINEERING	N/A
<i>Dinesh Katti</i>	
FACILE POLYMERSOME ASSEMBLY AND LOADING VIA MULTI-IMPINGEMENT FLASH NANOPRECIPITATION	452
<i>Sean Allen</i>	
EFFECTS OF FLUORIDE OR HYDROGEN PEROXIDE GELS ON THE SURFACE OF TITANIUM IMPLANT SYSTEMS	453
<i>Jililio Souza</i>	
FLUORESCENT ULTRATHIN FIBERS CONTAINING WATER-SOLUBLE GRAPHENE QUANTUM DOTS FOR TISSUE ENGINEERING APPLICATIONS	454
<i>Anderson Lobo</i>	
LAMINATED POLY(ETHYLENE GLYCOL)-PROTEIN FIBERS COMPOSITES EXHIBITING SHAPE MEMORY CHARACTERISTICS	455
<i>Xing Zhang</i>	

DIRECTED IRRADIATION SYNTHESIS (DIS) ON DENSE AND POROUS TITANIUM SURFACE FOR ENHANCED STEM CELL ADHESION AND PROLIFERATION	456
<i>Akshath Shetty</i>	
FABRICATION OF POLYETHYLENE GLYCOL-BASED TEMPLATED MACROPOROUS HYDROGELS	457
<i>Mozhdeh Imaninezhad</i>	
ELECTROSPINNING AND CHARACTERIZATION OF LOW FRICTION ZWITTERIONIC POLYURETHANE FIBERMAT COMPOSITES	458
<i>Allen Osaheni</i>	
INFLUENCE OF ALGINATE CALCIUM ON THE PHASE TRANSFORMATION AND CRYSTAL STRUCTURE OF CALCIUM PHOSPHATE	459
<i>Yumei Xiao</i>	
MORPHOLOGICAL, ELECTRICAL AND MECHANICAL CHARACTERIZATION OF NEONATAL CARDIOMYOCYTES CULTURED ON WRINKLED PDMS	460
<i>Bruce Gao</i>	
TAILORING THE PHYSICAL PROPERTIES OF A POLYDIOXANONE YARN WITH POTENTIAL TO IMPROVE SOFT TISSUE REPAIR	461
<i>Roxanna Abhari</i>	
STRUCTURE - PROPERTY RELATIONSHIP OF PHOTOACTIVABLE POLYAMIDOAMINE BASED BIOADHESIVES	N/A
<i>Ankur Shah</i>	
HIGHLY ELASTIC PVA-GELATIN HYDROGELS FOR ELASTIC SOFT TISSUE ENGINEERING	462
<i>Patrick Charron</i>	
TI-DIOXIDE NANOTUBES WITH SUPERIOR HYDROPHILICITY FOR HARD TISSUE IMPLANTS	463
<i>Tolou Shokuhfar</i>	
LAYER BY LAYER ASSEMBLY OF NANOSCAFFOLDS FOR NEURAL TISSUE REGENERATION	464
<i>Ipsita Banerjee</i>	
POLYMER INFILTRATION TOUGHENED HYDROXYAPATITE BIOMATERIAL HYBRIDS BY BIO-INSPIRED MATERIALS DESIGN	465
<i>Rohit Khanna</i>	
MICROFLUIDIC GENERATION OF PHOTORESPONSIVE DROPLETS ENABLE THE FORMATION OF MULTIPLE MICROPARTICLE GEOMETRIES	466
<i>Sasha Cai Leshner-Perez</i>	

EMERGING APPLICATIONS IN ENGINEERING CELLS AND THEIR MICROENVIRONMENTS

IMMOBILIZATION OF NUCLEIC ACID APTAMERS ON MACROPHAGES FOR THE CAPTURE OF TUMOR CELLS	467
<i>Yasuhiko Iwasaki</i>	
USING A NOVEL SEMI-AUTOMATED APPROACH FOR MEASURING AN ARRAY OF CELL SHAPE DESCRIPTORS: EFFECT OF 2D AND 3D FIBRIN SCAFFOLDS OVER TIME ON MESENCHYMAL STROMAL CELL MORPHOLOGY	468
<i>Melanie Hart</i>	
THE USE OF A SUSPENDED CARBON FIBER CULTURE TO MODEL MYELINATION BY HUMAN SCHWANN CELLS	469
<i>Antonio Merolli</i>	
SUBCUTANEOUS TRANSPLANTATION OF RECONSTITUTED PSEUDO-ISLETS IN DIABETIC SCID/BG MICE	470
<i>Alexander Vlahos</i>	
INTERACTIONS OF PLATELETS WITH ENDOTHELIAL AND SMOOTH MUSCLE CELLS CO-CULTURED ON COBALT CHROMIUM SURFACES: AN IN VITRO POST-IMPLANT MODEL	472
<i>Thomas Vierhout</i>	
ELASTOMERIC SUBSTRATES WITH TUNABLE TOPOGRAPHY TO MIMIC EPIDERMAL-DERMAL INTERFACE	N/A
<i>Murat Guvendiren</i>	
MULTIPOTENT ADULT PROGENITOR CLASS CELLS ENCAPSULATED IN ALGINATE HYDROGELS RETAIN VIABILITY AND UPREGULATE ANGIOGENIC AND IMMUNOGENIC CYTOKINE PRODUCTION	473
<i>Jeff Bossert</i>	
OVARIAN-SPECIFIC HYDROGELS FOR FOLLICLE DEVELOPMENT AND FERTILITY PRESERVATION	474
<i>Michael Buckenmeyer</i>	
MONITORING SPATIOTEMPORAL PROTEOLYTIC ACTIVITY IN TUMOR MICROENVIRONMENTS WITH FLUOROGENIC MICROGEL SENSORS	475
<i>Della Shin</i>	
ASCORBIC ACID AND TUNABLE MECHANICS OF SILK SCAFFOLDS MAINTAIN TISSUE CELL NICHE	476
<i>Joseph Pearson</i>	
COLLAGEN ALIGNMENT ALTERS VASCULAR NETWORK MORPHOLOGY AND PRO-ANGIOGENIC FACTOR SECRETION	477
<i>Michael McCoy</i>	

CONDITIONING CELLS TO THE COMPLIANCE OF THE SOFT UNDERLYING SUBSTRATE	478
<i>Sana Syed</i>	
HYDROGEL-BASED IN VITRO GLIOBLASTOMA SPHEROID MODELS	479
<i>Lindsay Hill</i>	
TISSUE ENGINEERED BONE-MIMETIC 3D IN VITRO MODEL TO STUDY BREAST CANCER BONE METASTASIS	480
<i>Sumanta Kar</i>	
HYDROGELS TO STUDY VASCULOGENESIS IN HYPOXIC MICROENVIRONMENTS	481
<i>Michael Blatchley</i>	

ENGINEERED BIOMATERIALS FOR NEURAL APPLICATIONS

NANOFIBER BASED MATERIALS FOR NEURAL INTERFACING	482
<i>Lauren Costella</i>	
CEREBRAL DECELLULARIZED EXTRACELLULAR MATRIX AS IN VITRO MODEL FOR NEURAL DEVELOPMENT	483
<i>Rolando Gittens</i>	
DEVELOPING MUSSEL ADHESIVE PROTEIN-BASED NERVE CONDUIT TO ACCELERATE NERVE REGENERATION	484
<i>Hogyun Cheong</i>	
IN VITRO AND IN VIVO EVALUATION OF DIFFERENT GELLAN GUM FORMULATIONS FOR PERIPHERAL NERVE REGENERATION	485
<i>Cristiana Carvalho</i>	
REGION-SPECIFIC LAMININ-FUNCTIONALIZED HYDROGELS FOR DELIVERY OF NEURAL STEM/PROGENITOR CELLS	486
<i>Daniela Barros</i>	
THE EFFECT OF TOPOGRAPHY AND TETHERED-PEPTIDE ON EMBRYONIC STEM CELL NEURAL DIFFERENTIATION	487
<i>Rebecca Willits</i>	
CROSSLINKED HYALURONAN-BASED HYDROGELS FOR GLIOMA NEURAL STEM CELL CULTURE	488
<i>Laura Smith</i>	
BALANCING CELL REMOVAL AND PRESERVATION OF INTRICATE ECM MICROSTRUCTURES DURING CHEMICAL DECELLULARIZATION OF PERIPHERAL NERVE	489
<i>Michaela Mertz</i>	
ELECTRICALLY CONDUCTIVE HYDROGEL WITH POSITIVELY CHARGED SURFACES FOR NERVE TISSUE ENGINEERING	490
<i>Xifeng Liu</i>	
USING INTERPENETRATING NETWORKS TO STUDY THE RELATIVE EFFECTS OF SUBSTRATE STIFFNESS ON NEURAL PHENOTYPE MODULATION IN 2D AND 3D MICROENVIRONMENTS	491
<i>Dany Munoz-Pinto</i>	
CARBON NANOTUBES-HYDROGEL COMPOSITES FOR NEURAL TISSUE ENGINEERING APPLICATIONS	492
<i>Mozhdeh Imaninezhad</i>	
POLYANHYDRIDE-BASED NANOMEDICINE PLATFORM FOR COMBATING NEURODEGENERATION	493
<i>Benjamin Schlichtmann</i>	
INJECTABLE CHITOSAN-PEG BASED HYDROGELS FOR SPINAL CORD LOCAL DELIVERY IN SYRINGOMYELIA MODELS	494
<i>Mahmoud Farrag</i>	
MODULATING NEUROINFLAMMATION WITH POROUS TEMPLATED SCAFFOLDS	495
<i>Ian Dryg</i>	
DEVELOPMENT OF A SEMI-INTERPENETRATING NETWORK HYDROGEL TO STUDY THE EFFECTS OF MILD TRAUMATIC BRAIN INJURY ON ASTROCYTE REMODELING	496
<i>Nasya Sturdivant</i>	
FUNCTIONALIZED ROSETTE NANOTUBES ALTER PERIPHERAL NEURON MORPHOLOGY	497
<i>Abigail Koppes</i>	
ACETAZOLAMIDE MITIGATES ASTROCYTE CELLULAR EDEMA FOLLOWING MILD TRAUMATIC BRAIN INJURY	N/A
<i>Nasya Sturdivant</i>	
ENGINEERED NERVE-REGENERATION IN DISRUPTIVE BRACHIAL PLEXUS LESIONS: AN IN-VIVO PILOT STUDY	498
<i>Antonio Merolli</i>	
BDNF-MIMETIC PEPTIDE AMPHIPHILES FOR NEURAL REGENERATION	499
<i>Alexandra Edelbrock</i>	
MAGNETICALLY ORIENTED COLLAGEN HYDROGELS FOR DIRECTING AND DIFFERENTIATING NEURAL GROWTH	500
<i>Merav Antman-Passig</i>	

ENGINEERING CELLS AND THEIR MICROENVIRONMENTS

ENRICHMENT OF PATIENT DERIVED GLIOBLASTOMA STEM CELLS IN THREE-DIMENSIONAL PNIPAAAM SCAFFOLDS	501
<i>John Heffernan</i>	
PROCESSING OF CHITOSAN-HYALURONIC ACID SCAFFOLDS TO PRODUCE AN OPTIMIZED BREAST CANCER TUMOR MICROENVIRONMENT	502
<i>Stephen Florczyk</i>	
MODULATING PRIMARY HUMAN HEPATOCYTE FUNCTIONS VIA GROWTH FACTOR DELIVERY FROM CHITOSAN-HEPARIN POLYELECTROLYTE MULTILAYERS	503
<i>Salman Khetani</i>	
MECHANICAL AND MORPHOLOGICAL ANALYSIS OF CANCER CELLS ON NANOSTRUCTURED SUBSTRATES	504
<i>Ming Su</i>	

MULTIFUNCTIONAL BIOMATERIAL DESIGN FOR REGENERATIVE TISSUE ENGINEERING

TGF-B1 CONJUGATED AND COLLAGEN IMPREGNATED CHITOSAN HYDROGELS ENHANCE CHONDROGENIC DIFFERENTIATION OF HUMAN MESENCHYMAL STEM CELLS	505
<i>Jinku Kim</i>	
FUNCTIONALIZED NANOFIBROUS SCAFFOLD FOR ENDOGENOUS BONE REGENERATION	506
<i>Qingqing Yao</i>	
MULTI-RESPONSIVE BIOMATERIALS BASED ON MULTIWALLED CARBON NANOTUBES, GRAPHENE OXIDE AND POLYMERIC ULTRATHIN FIBERS	507
<i>Anderson Lobo</i>	
ANTI-INFLAMMATORY EFFECTS OF PEG-BIS-AA/HA-DXM HYDROGEL IN RAT TRAUMATIC BRAIN INJURY	508
<i>Da Un Jeong</i>	
MICROSTRUCTURE AND MECHANICS OF POLYCAPROLACTONE BASED POLYURETHANE MICROGELS	509
<i>Yuan Yuan</i>	
CHONDROGENIC-INDUCTIVE NANOFIBROUS SUBSTRATES BIOFUNCTIONALIZED WITH IMMOBILIZED AUTOLOGOUS TGF-B3 AND IGF-I	510
<i>Marta Casanova</i>	
COMPOSITE-MEDIATED ANGIOGENESIS TO ENHANCE THE SURVIVAL OF TRANSPLANTED HUMAN ADIPOSE STEM CELLS	511
<i>Xiaowei Li</i>	

PRINTING AND PATTERNING OF CELL MICROENVIRONMENTS

3D PRINTING INDUCES POLYMER FIBER ALIGNMENT AND CELL ORGANIZATION	512
<i>Ting Guo</i>	
FABRICATION OF CONCOMITANT NEUTRAL AND ACIDIC LOCAL PH MULTI-ARRAYS MIMICKING NATIVE AND CANCER MICROENVIRONMENTS BY LAYER-BY-LAYER INKJET PRINTING	513
<i>Yudai Shioji</i>	
MANIPULATING THE ORIENTATION OF CARDIAC CELLS AND VASCULAR NETWORK BY USING THERMO-RESPONSIVE POLYMER GEL AND 3D PRINTING SYSTEM	514
<i>Yoshinari Tsukamoto</i>	
DEVELOPMENT OF GROWTH FACTOR BASED NANO FILM THROUGH INK-JET PRINTING	515
<i>Moonhyun Choi</i>	
TWO PHOTON LASER MICRO-PROCESSING OF GELATIN METHACRYLATE	516
<i>Zheng Xiong</i>	
3D PRINTING OF COLLOIDAL BUILDING BLOCKS FOR MODULAR TISSUE ENGINEERING	517
<i>Jeremy Norley</i>	
SPATIALLY CONTROLLED PHOTO-PATTERNING OF MULTI-MATERIAL BIOACTIVE HYDROGELS	518
<i>Bagrat Grigoryan</i>	

BIOMATERIALS FOR THERAPEUTIC DRUG DELIVERY

ELECTROSPUN CHITOSAN FOR ORAL INSULIN DELIVERY	519
<i>Michael Lancina</i>	
DEVELOPMENT AND CHARACTERIZATION OF STIMULI-RESPONSIVE HYDROGEL MICROCARRIERS FOR ORAL PROTEIN DELIVERY	520
<i>Colleen O'Comor</i>	
SUPRAMOLECULAR ASSEMBLIES OF ALKANE FUNCTIONALIZED POLY ETHYLENE GLYCOL COPOLYMER FOR DRUG DELIVERY	521
<i>Lida Zhu</i>	

SMART HEPARIN TRANSCUTANEOUS PATCH	522
<i>Yuqi Zhang</i>	
DEVELOPMENT OF A NOVEL TOPICAL CONTROLLED RELEASE SYSTEM FOR OTIC DRUG DELIVERY	523
<i>Liza Bruk</i>	
LYSOZYME-TRIGGERED INCREASE IN THE RELEASE RATE OF DEXTRAN FROM OLIGOMER-CROSSLINKED ALGINATE	524
<i>Laura Wells</i>	
DRUG LOADED POLY(GLYCEROL CARBONATE) FILMS AND MESHES FOR THE PREVENTION OF LUNG TUMOR RECURRENCE FOLLOWING SURGICAL RESECTION	525
<i>Mark Grinstaff</i>	
EFFECTS OF SOLVENTS IN FABRICATION METHODS OF PLGA-BASED ULTRASOUND CONTRAST AGENTS: A COMPARATIVE ANALYSIS	526
<i>Tanzeel Ur Rehman</i>	
CONTROLLED AND LOCALIZED DRUG DELIVERY PLATFORMS BASED ON MUSSEL ADHESIVE PROTEIN NANOPARTICLES FOR CANCER THERAPY	527
<i>Yeonsu Jeong</i>	
EXPLORING PRESSURISED GYRATION AND ELECTROHYDRODYNAMIC ATOMISATION METHODS FOR PRODUCING PRESSURISED DRUG-LOADED MUCOADHESIVE FIBRES	528
<i>Francis Brako</i>	
DEVELOPING A DOPANT-FREE POLYESTER BASED PHOTOLUMINESCENT HYDROGEL	529
<i>Xiaoyang Xu</i>	
NONAQUEOUS SEMI-SOLID NANOCOMPOSITES FOR SYNERGISTIC DELIVERY OF COMBINATION DRUGS	530
<i>Macallum Brabender</i>	
RECRUITMENT OF THE AUTOPHAGIC MACHINERY BY THE ACID-LABILE POLYROTAXANES EXERTING INTRACELLULAR RELEASE OF METHYLATED β-CYCLODEXTRINS	531
<i>Kei Nishida</i>	
NOVEL BIODEVICE REDUCES CELLULAR GENOTOXICITY OF AN IN VITRO OXIDATIVE STRESS MODEL OF ALZHEIMER'S DISEASE	532
<i>Anderson Lobo</i>	
THE USE OF MICROFLUIDIC MIXING DEVICES FOR MINIMIZING POLYPLEX NANOPARTICLE SIZE AND INCREASING TUMOR PENETRATION	533
<i>Ayisha Jackson</i>	
MEETING THE POLYPHARMACY CHALLENGE: DEVELOPMENT OF POLYMERIC CARRIERS CO-ENCAPSULATION OF MULTIPLE DRUGS USING ELECTROHYDRODYNAMIC ATOMIZATION	534
<i>Talayeh Shams</i>	
HYDROGEL PATCHES ON LIVE CELL THROUGH SURFACE MEDIATED POLYMERIZATION	535
<i>Pei-Jung Wu</i>	
EFFECT OF TANNIC ACID ON THE MECHANICAL PROPERTIES OF DENSE COLLAGEN MATRICES AND MELANOMA CELL PROLIFERATION	536
<i>Vipul Kishore</i>	
IN VITRO EVALUATION ON EFFECTS OF POROSITY AND PORE SIZE ON CHITOSAN SPONGE CHARACTERISTICS	537
<i>Logan Boles</i>	
ADSORPTION OF NANOSPHERES ONTO SUBSTRATES: STRUCTURAL INVESTIGATIONS AND QCM STUDIES	538
<i>Sanjeeva Murthy</i>	
CONTINUOUS PRODUCTION AND PURIFICATION OF DNA NANOPARTICLES USING FLASH NANOCOMPLEXATION AND TANGENTIAL FLOW FILTRATION	539
<i>Heng-Wen Liu</i>	
TUNABLE, DELAYED PROTEIN RELEASE FROM LAYERED POLYESTER MICROPARTICLES	540
<i>Kassandra Hickey</i>	
APTAMER-FUNCTIONALIZED HYDROGELS FOR SKIN WOUND HEALING	541
<i>Nan Zhao</i>	
TUNABLE RELEASE OF POLYGLUTAMATE MODIFIED VEGF MIMETIC PEPTIDES FROM BONE GRAFTS ELICITS A PROANGIOGENIC RESPONSE	542
<i>Nicholas Pensa</i>	
CHITOSAN PASTE FOR LOCAL ANTIBIOTIC DELIVERY: AN ASSESSMENT OF IN VITRO ANTIBIOTIC ELUTION AND DEGRADATION	543
<i>Christopher Alexander</i>	
RELEASE PROFILE, IN VIVO AND IN VITRO RESPONSE TO CARBON MONOXIDE RELEASING MOLECULES LOADED WITHIN ELECTROSPUN SCAFFOLDS	544
<i>Chris Bashur</i>	
TUNABLE AND BIODEGRADABLE PEG MICROGELS FOR TEMPORALLY CONTROLLED DELIVERY OF PLATELET-RICH PLASMA	545
<i>Era Jain</i>	
SOFT, NONRESORBABLE POLYMER COMPOSITES FOR SUSTAINED ZERO-ORDER CISPLATIN DELIVERY TO THE ABDOMEN	546
<i>Aikaterini Mantzavinou</i>	

DEVICE- AND IMPLANT-BASED DRUG DELIVERY

DEVELOPMENT OF TUNABLE SELF-ASSEMBLED NANOPARTICLES FOR DELIVERY OF SMALL MOLECULE THERAPEUTICS	547
<i>Alex Sevit</i>	
COMPARING SWELLING RATIO OF DIFFERENT PEG-DMA LENGTHS IN CHITOSAN DRUG LOADING MATRIX	548
<i>Leslie Pace</i>	
METAL ION-ASSISTED SELF-ASSEMBLED COMPLEXES FOR LOCAL DELIVERY OF MINOCYCLINE FOR SPINAL CORD REPAIR	N/A
<i>Yinghui Zhong</i>	
ELECTRICAL STIMULATION BASED CONTROLLED DRUG DELIVERY FROM POLYPYRROLE COATED POLYVINYLIDENE FLUORIDE	549
<i>Solaleh Miar</i>	
MANIPULATION OF EMULSION PH IMPROVES QUINISINOSTAT LOADING IN PLA-PEG NANOPARTICLES TO ENABLE TREATMENT OF INTRACRANIAL GLIOBLASTOMA	550
<i>Kyle Householder</i>	
FORMATION OF PLANT-INSPIRED POLYPHENOL COMPLEX FOR AN OCULAR DRUG DELIVERY	551
<i>Whuisu Shim</i>	
MODELING THE OXIDATIVE CONSUMPTION OF CURCUMIN FROM CONTROLLED RELEASED POLY(BETA AMINO ESTER) MICROPARTICLES IN THE PRESENCE OF FREE RADICAL GENERATING SYSTEMS	552
<i>Carolyn Jordan</i>	
SYNTHESIS AND CHARACTERIZATION OF POLYMER NANOGELS FOR THE DELIVERY OF THERAPEUTIC SMALL MOLECULE ANALOGS	553
<i>Marissa Wechsler</i>	
RELEASE OF AMPHOTERIC PABA FROM CHITOSAN SCAFFOLDS IN BUFFERED SOLUTION WITH ELECTRICAL STIMULATION	554
<i>Jennifer Miller</i>	
TRANSPORT OF NANOMEDICINE THROUGH BLOOD-BRAIN BARRIER	555
<i>Eunjo Kim</i>	
DEVELOPING SHORT PEPTIDE BASED NANOASSEMBLIES AS DRUG CARRIERS	556
<i>Ipsita Banerjee</i>	
FOOD-GRADE ZEIN NANOPARTICLES FOR ORAL DELIVERY OF EPIGALLOCATECHIN-3-GALLATE (EGCG)	557
<i>Vibin Muthunayagam</i>	
LOCALIZED BIOCATALYSIS VIA SELF-ASSEMBLED ENZYME-GALECTIN FUSIONS	558
<i>Shaheen Farhadi</i>	
DEVELOPMENT OF A SELF-DEPLOYING DRUG RELEASE DEVICE	559
<i>Hirokazu Kaji</i>	
USING ULTRASOUND TO ENHANCE TUMOR CELL KILLING BY ANTI-PD1 AND DOXORUBICIN-LOADED PARTICLES	560
<i>Anh-Vu Do</i>	
RASPBERRY KEYTONE ELUTION STUDY FOR ELECTROSPUN CHITOSAN MEMBRANES OF FOUR DIFFERENT TREATMENTS	561
<i>Paul Cameron</i>	
EFFECT OF SELECTED CYTOKINES ON VOCAL FOLD SCAR REDUCTION	562
<i>Hongyu Chen</i>	
A SWELLABLE DRUG-ELUTING URETERIC STENT FOR THE TREATMENT OF UROLOGICAL DISEASES	563
<i>Wei Shan Lim</i>	
TUBULAR NANOCARRIERS WITH OPTIMIZED DIMENSIONS FOR SUSTAINED RELEASE OF BIOMOLECULES	564
<i>Tolou Shokuhfar</i>	

DRUG DELIVERY

SYNTHESIS OF POLY(ESTER AMIDE) MICROPARTICLES FOR INTRA-ARTICULAR DRUG DELIVERY	565
<i>Ian Villamagna</i>	
COMBINATION OF RIFAMPIN AND CIPROFLOXACIN EXHIBIT ADDITIVE BIOFILM INHIBITION CAPABILITIES IN VITRO WHEN RELEASED FROM CHITOSAN-BASED LOCAL DELIVERY DEVICES	566
<i>Carlos M Wells</i>	
NEXT GENERATION LIPID NANOPARTICLES FOR THERMORESPONSIVE DRUG DELIVERY	567
<i>Mubashar Rehman</i>	
CONTROLLED RELEASE MICROPARTICLES: RESPONSE SURFACE METHODOLOGY FOR OPTIMIZATION OF HYDROPHILIC AND HYDROPHOBIC DRUGS	568
<i>Asadullah Madni</i>	
CYTOSOLIC DELIVERY OF DOXORUBICIN TO MULTIDRUG RESISTANT CANCER CELLS	569
<i>William Pitt</i>	

IN VITRO MODELING OF BACTERIA BIOFILM DYNAMICS	570
<i>Thomas Spoonmore</i>	
POLYDOPAMINE NANOPARTICLE SIZE OPTIMIZATION FOR SMART DRUG DELIVERY APPLICATIONS	571
<i>Serkan Yaman</i>	
POLYPHOSPHATE LOADED HYDROGEL NANOPARTICLES FOR SUPPRESSION OF BACTERIAL COLLAGENASE AND PROMOTION OF INTESTINAL HEALING	572
<i>Dylan Nichols</i>	
FOOD GRADE PROTEIN BIOPOLYMER BASED NANOPARTICLES FOR ORAL DRUG DELIVERY APPLICATIONS	573
<i>Md Saiful Islam</i>	
A SIMPLE, SELF-ASSEMBLED HYDROGEL DEPOT FOR LOCALIZED TREATMENT OF LARGE JOINT OSTEOARTHRITIS	574
<i>Xueyin He</i>	

GLYCOMATERIALS

CHEMICALLY TUNABLE SYNTHETIC GLYCOPOLYPEPTIDES BY NCA POLYMERIZATION	575
<i>Jessica Kramer</i>	
GENERATION OF MUCIN MIMETIC GLYCOPOLYMERS THROUGH ANIONIC POLYMERIZATION	N/A
<i>Daniel Honigfort</i>	
BOTTOM-UP HYDROGELS WITH HIERARCHICALLY ALIGNED NANOFIBERS VIA GLYCOPEPTIDE SELF-ASSEMBLY	576
<i>Antonietta Restuccia</i>	

INJECTABLE BIOMATERIALS FOR DELIVERY OF CELL, GENE AND PROTEIN THERAPY

INJECTABLE ANISOTROPIC NANOCOMPOSITE HYDROGELS WITH MAGNETICALLY ALIGNED CELLULOSE NANOCRYSTALS	577
<i>Kevin De France</i>	
IN SITU BIOFUNCTIONALIZATION OF POLY(NIPAAM) HYDROGELS WITH PROTEINS VIA EPOXIDE-MEDIATED CONJUGATION	578
<i>Meryem Pehlivaner</i>	
BIODEGRADABLE INJECTABLE POLYMER SYSTEMS EXHIBITING TEMPERATURE-RESPONSIVE IRREVERSIBLE COVALENT GELATION	579
<i>Yuichi Ohya</i>	
COACERVATED MUSSEL PROTEIN AS AN ADHESIVE STEM CELL DELIVERY CARRIER	580
<i>Tae Yoon Park</i>	
THE POTENTIAL ROLE OF FETUIN-A SUPPLEMENTATION IN REGULATING PHENOTYPIC DIFFERENTIATION IN CALCIFIED VASCULAR SMOOTH MUSCLE CELLS	581
<i>Justin McMahan</i>	
NANO-SILICA INCORPORATION IMPROVES IN VITRO OSTEOBLAST RESPONSE OF INJECTABLE CHITOSAN MICROPARTICLES	582
<i>Bipin Gaihre</i>	
AN N-ISOPROPYLACRYLAMIDE CO-POLYMER FOR THE DELIVERY AND TEMPORARY SUPPORT OF THERAPEUTIC CELLS IN THE RETINA	583
<i>Megan Dodd</i>	
CATIONIC AMPHIPHILIC POLYMERIC MICELLE AS THERAPEUTIC SIRHOA CARRIER FOR AXONAL REGENERATION IN SPINAL CORD INJURY	584
<i>So-Jung Gwak</i>	
OXIDIZED-ALGINATE MICROBEAD ENCAPSULATED OSTEOCLASTS AS A CELL-BASED THERAPY TO REVERSE VASCULAR CALCIFICATION	585
<i>Jarell Colston</i>	
ENHANCED CELL VIABILITY AND IN VIVO DEGRADATION OF INJECTABLE, REACTIVE OXYGEN SPECIES-SENSITIVE PEG HYDROGELS	586
<i>John Martin</i>	
INJECTABLE CELL-ADHESIVE POLYETHYLENE GLYCOL CRYOGEL SCAFFOLDS	587
<i>Joseph Bruns</i>	
ACETALATED DEXTRAN NANOPARTICLES FOR RAPID AND GLUCOSE RESPONSIVE INSULIN DELIVERY	588
<i>Lisa Volpatti</i>	
CA-P BIOCERAMICS AS BIOACTIVE SUPPORT FOR HUMAN GINGIVAL MESENCHYMAL STEM CELL OSTEOGENIC DIFFERENTIATION IN VITRO	589
<i>Juan Francisco Vivanco</i>	
INJECTABLE GELATIN/OXIDIZED-β-CYCLODEXTRIN HYDROGELS AS THERAPEUTIC IMPLANTS AND DRUG DELIVERY VEHICLES	590
<i>Ki Dong Park</i>	

GALECTIN 3 AS A RETENTION STRATEGY FOR DELIVERY OF PROTEINS TO MULTIPLE SITES IN VIVO	591
<i>Sabrina Freeman</i>	
FIRST TRIMESTER HUMAN UMBILICAL CORD PERIVASCULAR CELLS ACCELERATE AND ENHANCE NETWORK FORMATION OF HUMAN BLOOD OUTGROWTH ENDOTHELIAL CELLS IN 3D MATRIGEL ENVIRONMENTS	592
<i>Yarden Gratch</i>	
POLYETHYLENE OXIDE AS A NEXT GENERATION PLATFORM FOR DRUG-COATED BALLOON APPLICATION	593
<i>Jordan Anderson</i>	

LOCAL DRUG DELIVERY TO CARDIOVASCULAR TARGETS

EFFICACY OF PERIVASCULAR PLGA MICRONEEDLE MESHES FOR INHIBITING INTIMAL HYPERPLASIA IN BALLOON-INJURED RABBIT ABDOMINAL AORTA	594
<i>Jiyong Lee</i>	
DESIGN OF POLYMER CARRIERS TO FACILITATE CELL UPTAKE AND ENDOSOMAL ESCAPE OF AN MK2 INHIBITORY PEPTIDE	595
<i>Eric Dailing</i>	
INHIBITION OF SMOOTH MUSCLE CELLS PROLIFERATION USING SIROLIMUS LOADED, HEPARIN BOUND POLYMERIC-MICELLES	596
<i>Jayesh Betala</i>	

NUCLEIC ACID DELIVERY

A MULTIFUNCTIONAL GENE DELIVERY NANOVECTOR FOR CANCER TREATMENT	597
<i>Qingwen Guan</i>	
CHEMICALLY MODIFYING OF POLYETHYLENEIMINE (PEI) TO IMPROVE GENE DELIVERY TO TUMOR CELLS	598
<i>Yanhua Huang</i>	
NANOPARTICLE(NP)-MEDIATED SIRNA DELIVERY TO MESENCHYMAL STEM CELLS: EFFECT OF NP COMPOSITION AND CHARACTERISTICS	600
<i>Dominic Malcolm</i>	

TARGETED DRUG DELIVERY SYSTEMS

RELAY DRUG DELIVERY FOR AMPLIFYING TARGETING SIGNAL AND ENHANCING ANTICANCER EFFICACY	601
<i>Quanyin Hu</i>	
NEW MULTIFUNCTIONAL NANOPARTICLE PLATFORM FOR EFFICIENT DRUG DELIVERY	602
<i>Kyle Miller</i>	
CHEMOTHERAPEUTIC LOADING VIA TAILORING OF DRUG-CARRIER INTERACTIONS IN POLY(SIALIC ACID) MICELLES	603
<i>Gerald Pawlish</i>	
PENETRATING POROUS TISSUE WITH MAGNETIC TARGETING	604
<i>Randall Erb</i>	
ENZYME-TARGETED NANOPARTICLES FOR DELIVERY TO ISCHEMIC MUSCLE	605
<i>Jessica Ungerleider</i>	
BIODEGRADABLE POLYMERIC NANOPARTICLES TARGETED BY A NOVEL BIOMIMETIC PEPTIDE TO HUMAN BREAST CANCER	606
<i>Jayoung Kim</i>	
TARGETED DELIVERY OF P38 MAPK INHIBITORS FOR MULTIPLE SCLEROSIS THERAPY	607
<i>Rachael Oldinski</i>	
DESIGN OF NEW BIO-ORGANIC MIMICS FOR DRUG DELIVERY VEHICLES AND AN EXPLORATION OF THEIR INTERACTIONS WITH TUMOR CELLS	608
<i>Ipsita Banerjee</i>	
DEVELOPMENT OF ORGANIC LIGHT-EMITTING DIODE (OLED) FOR BIOMEDICAL APPLICATION	609
<i>Dmitry Gil</i>	

3D BIOPRINTING FOR MEDICAL APPLICATIONS

COMPARATIVE STUDY OF 3D PRINTED POLYCAPROLACTONE (PCL)/B- TRICALCIUM PHOSPHATE (B-TCP) AND COLLAGEN MEMBRANE AS GUIDED BONE REGENERATION IN A BEAGLE IMPLANT MODEL	610
<i>Joo-Yun Won</i>	

GENERATION OF CRIMPED, CROSSLINKED BIODEGRADABLE MICROFIBRE SCAFFOLDS VIA MELT ELECTROSPINNING WRITING	611
<i>Brian Amsden</i>	
CHARACTERIZING SINGLE-SOLUTION, VARIABLE-PROPERTY PHOTOPATTERNED BIOCOMPATIBLE HYDROGEL VIA PROJECTION STEREOLITHOGRAPHY	612
<i>Callie Fiedler</i>	
LOW COST BIOPRINTER FOR CELL CARRYING HYDROGELS	613
<i>Kevin Roehm</i>	
3D PRINTED HORMONE-DOPED PESSARIES AND IUD'S FOR USE IN HORMONE REPLACEMENT THERAPY	614
<i>David Mills</i>	
CHARACTERIZATION OF 3D PRINTED CONSTRUCTS FOR OSTEOCHONDRAL REGENERATIVE MEDICINE	615
<i>Asais Uzategui</i>	
PROLIFERATION OF FIBROBLAST ON PORE SIZE CONTROLLED THREE-DIMENSIONAL SCAFFOLDS BY THREE-DIMENSIONAL BIOPRINTING	616
<i>Dong Jin Choi</i>	
FREEFORM FABRICATION TRI-STIMULI-RESPONSIVE ALGINATE-BASED HYDROGELS	617
<i>Canaan McKenzie</i>	
CONDUCTIVE 3D-PRINTABLE GRAPHENE REINFORCED BIOINKS FOR NEURAL APPLICATIONS	618
<i>Tolou Shokuhfar</i>	

3D PRINTING AND ITS IMPACT ON BIOMEDICINE

3D PRINTED SCAFFOLDS FOR HAVERSIAN MICRO-ARCHITECTURE	619
<i>Brian Ruliffson</i>	
EFFECT OF POST-PROCESSING AND POROSITY ON FATIGUE PERFORMANCE OF SELECTIVE LASER MELTED Ti-6Al-4V ELI	620
<i>Frederick Torstrick</i>	
3D PRINTING OF PDMS ELASTOMER TOWARD PATIENT SPECIFIC WEARABLE DEVICES	N/A
<i>Sara Abdollahi</i>	
CONTROLLED DELIVERY OF FLUOROPHORES FROM 3D TWO-PHOTON PHOTOLITHOGRAPHIC PRINTED POLY(ETHYLENE GLYCOL) METHACRYLATE SCAFFOLDS	621
<i>Anh-Vu Do</i>	
ADDITIVE MANUFACTURING OF MULTI-STRUCTURAL IMPLANTS FOR REGENERATIVE MEDICINE	622
<i>Romy Brünler</i>	

ADVANCED BIOINKS FOR 3D PRINTING OF TISSUES AND ORGANS

IN VITRO AND IN VIVO STUDY OF BIORESORBABLE VASCULAR SCAFFOLDS PRODUCED USING A MULTI-AXIAL 3D PRINTING TECHNOLOGY	623
<i>Jie Zhang</i>	
CONTROL OF DRUG VECTOR RELEASE KINETICS FROM A 3D PRINTED THIOL-ENE CROSS-LINKED BIOINK	624
<i>Juergen Groll</i>	
3D CELL PRINTING SYSTEMS FOR PRECISE BUILDING OF COLLAGEN-BASED 3D CELL-LADEN CONSTRUCTS	625
<i>Geunseon Ahn</i>	
GENERATION OF VESSEL STRUCTURE USING GELATIN-BASED BIOINK AND BIOPRINTER	626
<i>Soyoung Hong</i>	
INFLUENCE OF POLYVINYLPIRROLIDONE-BASED BIO-INK PROPERTIES ON VIABILITY AND HOMOGENEITY OF PRINTED CELLS	627
<i>Wei Long Ng</i>	
CARTILAGE-DERIVED EXTRACELLULAR MATRIX METHACRYLAMIDE FOR 3D BIOPRINTING	628
<i>Zachary Galliger</i>	
ALGINATE/GELATIN AS A TUNABLE BIOPRINTING HYDROGEL TO STUDY TUMOR SPHEROID FORMATION	629
<i>Tao Jiang</i>	

BIOMATERIAL PLATFORMS FOR GUIDING ORGANOID DEVELOPMENT AND ORGAN CULTURE

A THREE-DIMENSIONAL BRAIN ORGANOID PLATFORM FOR DISEASE MODELING AND DRUG SCREENING	630
<i>Mehdi Jorfi</i>	
OXYGEN MICROENVIRONMENT SENSING IN THREE-DIMENSIONAL HUMAN INTESTINE-LIKE TISSUE	631
<i>Ge-Ah Kim</i>	

SYNTHETIC HYDROGELS FOR HUMAN INTESTINAL ORGANOID GENERATION AND COLONIC WOUND ENGRAFTMENT	632
<i>Ricardo Cruz-Acuña</i>	
ADIPOGENIC DIFFERENTIATION OF HUMAN ADIPOSE-DERIVED STEM CELLS GROWN AS THREE-DIMENSIONAL IN VITRO MODEL	633
<i>Sarah Fitzgerald</i>	
NEURAL NETWORK RECONSTRUCTION ON SLICED ACELLULAR BRAINS FOR BRAIN ORGANOIDS	634
<i>Tsuyoshi Kimura</i>	
BIOMIMETIC SURFACE MODIFICATION PLATFORM FOR PLLA SCAFFOLDS	635
<i>Cortes Williams</i>	
NOVEL ANALYSIS OF IN VITRO BREAST TISSUE TEST SYSTEM	636
<i>Sarah Rowlinson</i>	
SYNTHETIC HYDROGEL SCAFFOLDS FOR MODELING INTESTINAL EPITHELIAL HOMEOSTASIS IN VITRO	637
<i>Reid Wilson</i>	
ENGINEERING A LONG-TERM AND HIGHLY FUNCTIONAL 3D HUMAN LIVER MODEL USING SILK SCAFFOLDS	638
<i>Salman Khetani</i>	
3-DIMENSIONAL CHEMICALLY MODIFIED BIODEGRADABLE HYDROGELS FOR THE STUDY OF VALVULAR INTERSTITIAL CELL PHENOTYPE IN VITRO	639
<i>Kent Coombs</i>	

BIOMATERIALS DESIGNS FOR TEMPORALLY CONTROLLED RELEASE OF MULTIPLE FACTORS TO PROMOTE TISSUE REGENERATION

CONTROLLED LINOLEIC ACID RELEASE IN A HYDROGEL-BASED MAMMARY ADIPOSE TISSUE MODEL	640
<i>Kerri Andre</i>	

BIOMATERIALS FOR REGENERATIVE ENGINEERING

ENGINEERING A DUAL-LAYER CHITOSAN-LACTIDE HYDROGEL TO CREATE ENDOTHELIAL CELL AGGREGATE-INDUCED MICROVASCULAR NETWORKS IN VITRO AND INCREASE BLOOD PERFUSION IN VIVO	641
<i>Sungwoo Kim</i>	
INVESTIGATING THE SHEAR-INDUCED FORMATION OF A GEL LAYER (A.K.A. LAMINA SPLENDENS) IN SYNOVIAL FLUID	642
<i>Sierra Cook</i>	
POROUS PLGA SCAFFOLDS INCORPORATING DECELLULARIZED EXTRACELLULAR MATRICES FOR KIDNEY TISSUE REGENERATION	643
<i>Dong Keun Han</i>	
GELLAN GUM-POLY-L-LYSINE COMPLEXES FOR CELL ENCAPSULATION	644
<i>Silvia Vieira</i>	
DESIGN OPTIMIZATION OF PEG-BASED PEPTIDE-CONJUGATED HYDROGELS THROUGH MULTISCALE MOLECULAR MODELING METHODS	645
<i>Xianfeng Li</i>	
EXTRACELLULAR MATRIX BIOFIBERS	646
<i>Kevin Roberts</i>	
INTEGRATING EXPERIMENTS AND MOLECULAR DYNAMICS SIMULATIONS TO UNDERSTAND THE DEGRADATION MECHANISMS OF BIORESORBABLE FIBERS	647
<i>Radhika Vaid</i>	
COLLAGEN- AND ELASTIN-RICH BIOMATERIAL ISOLATED FROM THE SKIN OF APLYSIA CALIFORNICA	648
<i>Victoria Webster</i>	
A STUDY OF LOAD TRANSITION IN PARTIALLY ABSORBABLE HERNIA MESH ON THE HEALING RESPONSE OF A CHRONIC ABDOMINAL WALL DEFECT IN A RABBIT MODEL	649
<i>M. Scott Taylor</i>	
SMOOTH MUSCLE CELL RESPONSES TO POLYCAPROLACTONE TRIACYLATES PHOTO-CROSSLINKED FOR DIFFERENT TIME	N/A
<i>Shanfeng Wang</i>	
EFFECT OF PH ON HYDRODYNAMIC SIZE OF CHONDROITIN SULFATE AND BIOMIMETIC PROTEOGLYCAN DISSOLVED IN AQUEOUS SOLUTION	650
<i>Alicia Kriete</i>	
CELL-SEEDED SYNTHETIC SCAFFOLD FOR ESOPHAGEAL REGENERATION	651
<i>Sherif Soliman</i>	
MOLECULAR DYNAMICS SIMULATIONS OF PLA USING REACTIVE FORCE-FIELD	652
<i>Chirag Gajjar</i>	
PROCESS-PROPERTY RELATIONSHIPS FOR BIOABSORBABLE POLYMERS	653
<i>Chirag Gajjar</i>	

EVALUATION OF GELATIN BASED HYDROGEL AS BIO-INK APPLICATION	654
<i>Ji Seon Kim</i>	
MICROSTRUCTURAL CHARACTERIZATION AND IN VITRO BIOACTIVITY OF ALIGNED POLYMER/HYDROXYAPATITE SCAFFOLDS FOR BONE REGENERATION BY SYNCHROTRON RADIATION X-RAY MICROTOMOGRAPHY	655
<i>Svetlana Gorodzha</i>	
BOVINE PERICARDIUM PATCH AS AN IMPLANT FOR SURGICAL REPAIR APPLICATIONS.....	656
<i>Surendra Batra</i>	
ENDOTOXIN REMOVAL FROM TYPE A GELATIN USING SURFACTANTS.....	657
<i>Jos Olijve</i>	
FOLIC ACID-STABILIZED COPPER METAL-ORGANIC FRAMEWORKS IMPROVE WOUND HEALING IN DIABETES	658
<i>Guillermo Ameer</i>	

ENZYME-ASSISTED BIOMATERIAL FABRICATION AND MODIFICATION FOR BIOLOGICAL APPLICATIONS

ENZYME-IMMOBILIZED HYDROGELS FOR IN VITRO HYPOXIC CANCER CELL CULTURE.....	659
<i>Camron Dawes</i>	
TRANSGLUTAMINASE CROSSLINKING OF RESILIN-BASED PROTEINS FOR VASCULAR APPLICATIONS.....	660
<i>Julie Liu</i>	

EVALUATION OF TISSUE ENGINEERING CONSTRUCTS

DESIGN AND ANALYSIS OF BIOENGINEERED MODELS OF ALZHEIMER'S DISEASE	661
<i>Laura Walker</i>	
SPACE & COST SAVER BIOREACTOR FOR ENGINEERING MUSCLE/TENDON TISSUE.....	662
<i>Ting He</i>	
RECONSTRUCTION OF FULL THICKNESS HUMAN SKIN BY 3D BIO-PRINTING WITH SKIN BIOINK	663
<i>Joo Yun Won</i>	
EVALUATION OF BONE SUBSTITUTES USING A RABBIT POSTEROLATERAL LUMBAR INTERTRANSVERSE PROCESS SPINAL FUSION (PLF) MODEL: A SUBCHRONIC PILOT STUDY	664
<i>Michel Assad</i>	

GENOME EDITING TOOLS FOR TISSUE REGENERATION

HIGH CONTENT ANALYSIS PLATFORM FOR OPTIMIZATION OF LIPID MEDIATED CRISPR-CAS9 DELIVERY STRATEGIES IN HUMAN CELLS.....	665
<i>Krishanu Saha</i>	

GLYCOMATERIALS

BRANCHED NEOPROTEOGLYCAN FOR DIRECTING GERM LAYER SPECIFICATION IN EMBRYONIC STEM CELLS.....	N/A
<i>Yinan Wang</i>	
CHITOSAN FIBERS FOR VARIOUS BIOMEDICAL APPLICATIONS.....	666
<i>Michael Wöltje</i>	

IMPROVED CONSTRUCTION OF STEM CELL-BASED BIOMATERIALS

EXPANDING THE SAMPLE SPACE – OPTIMIZING MATERIALS FOR COMPLEX, SPATIALLY- PATTERNED HUMAN ARTICULAR CARTILAGE.....	667
<i>Kirsten Parratt</i>	
EXTENT OF MODIFICATION OF HYALURONIC ACID INFLUENCES CD44 BINDING AND MSC CHONDROGENESIS.....	668
<i>Mi Kwon</i>	
ALIGNED SUBSTRATE TOPOGRAPHY INDUCES MSC TENOGENIC DIFFERENTIATION THROUGH THE RHO/ROCK PATHWAY	669
<i>Takayuki Suzuki</i>	
THE EFFECT OF FIBRINOGEN CONCENTRATION ON CHONDROCYTE PROLIFERATION	670
<i>Alex McNally</i>	
PLURIPOTENT STEM CELL MORPHOGEN DELIVERY VIA HEPARIN-BASED BIOMATERIALS	N/A
<i>Todd McDevitt</i>	

INTERFACIAL TISSUE ENGINEERING

COMBINATORIAL EFFECTS OF CYCLIC TENSILE STRAIN AND LOCAL BIOMATERIAL CUES ON TENDON-BONE-JUNCTION ENGINEERING	671
<i>William Grier</i>	

IRRADIATION OF BIOMATERIALS: RECENT DEVELOPMENT

ANNEALING EFFECTS ON POLY(GLYCOLIDE-CO-L-LACTIDE) MULTIFILAMENTS FOLLOWING IRRADIATION TREATMENT	672
<i>Meng Deng</i>	

MATERIALS ASPECT OF IN SITU TISSUE ENGINEERING

CELLULAR DYNAMICS OF NEOVASCULARIZATION AND OSTEOCONDUCTION IN PERI-IMPLANT ENDOSSEOUS WOUND HEALING	673
<i>Niloufar Khosravi</i>	

REGULATING STEM CELL DIFFERENTIATION

CONTROLLED REGULATION OF MESENCHYMAL STEM CELL RESPONSE IN VITRO USING LASER-ENGINEERED BIO-INTERFACES	674
<i>Valentina Dinca</i>	
THERANOSTIC NANOPARTICLES TO PROMOTE OSTEOGENESIS AND PHOTOACOUSTIC IMAGING OF MESENCHYMAL STEM CELLS	675
<i>Isaac Adjei</i>	
CALCIUM ALGINATE-COLLAGEN GELS AS DEPOTS OF DIFFERENTIATION FACTORS AND BIOACTIVE GLASSES FOR MESENCHYMAL STEM CELL OSTEOINDUCTION	676
<i>Emily Diaz</i>	
IMPACT OF CALCIUM CONCENTRATION ON CELL VIABILITY, TRANSFECTION EFFICIENCY, AND OSTEOGENIC DIFFERENTIATION IN BONE MARROW-DERIVED STEM CELLS	677
<i>Timothy Acri</i>	
SILICONE AND CARBON NANOTUBE SUBSTRATES WITH PULSED CURRENT FOR OSTEOBLASTIC MSCS DIFFERENTIATION	678
<i>Roche De Guzman</i>	
NANOFIBER SCAFFOLD FIBER DENSITY MODULATES MESENCHYMAL STEM CELL DIFFERENTIATION WITH CORRELATION TO CELL MORPHOLOGY	679
<i>Desu Chen</i>	
INFLUENCE OF CHITOSAN-ALGINATE SCAFFOLD PROPERTIES ON MESENCHYMAL STEM CELL DIFFERENTIATION	680
<i>Stephen Florczyk</i>	
DYNAMIC INTERSTITIAL FLUID FLOW AND MATRIX STIFFNESS INFLUENCE OSTEOGENESIS OF HUMAN MSCS IN A BILAYER HYDROGEL	681
<i>Aaron Aziz</i>	
NANOTOPOGRAPHY PROMOTED NEURONAL DIFFERENTIATION OF HUMAN INDUCED PLURIPOTENT STEM CELLS	682
<i>Yong Yang</i>	

SOFT TISSUE REGENERATION USING HIERARCHICAL STRUCTURES

CONSTRUCTION OF STROMAL TISSUE BALLS WITH HIGH-DENSITY ECM AND BLOOD CAPILLARY	683
<i>Misaki Komeda</i>	
SYNCYTIAL MYOBLAST FUSION IS REGULATED BY MUSCLE EXTRACELLULAR MATRIX AND INTEGRIN A7B1 SIGNALING	684
<i>Michael McClure</i>	
TUNING THE ARCHITECTURE OF 3D COLLAGEN-BASED HYDROGEL CONSTRUCTS USING POLYVINYLPIRROLIDONE MACROMOLECULES	685
<i>Wei Long Ng</i>	
TOWARDS BIO-INSTRUCTIVE SCAFFOLDS: IDENTIFYING GEOMETRY DIRECTED STEM CELL DIFFERENTIATION WITH RNA-SEQUENCING	686
<i>Brittany Banik</i>	

SUPRAMOLECULAR MATERIALS FOR BIOMEDICAL APPLICATIONS

PORPHYRIN MICRO-NANO PARTICLES MIMICKING VIRAL MORPHOLOGY FOR ENHANCED CELLULAR DELIVERY AND PHOTODYNAMIC THERAPY	687
<i>Wenbo Zhang</i>	

AFFINITY-CONTROLLED LECTIN DELIVERY VIA SELF-ASSEMBLED GLYCOPEPTIDE HYDROGELS	688
<i>Margaret Fettes</i>	
SELF-ASSEMBLING PEPTIDE NANOFIBER CONSTRUCTS AS DEFINED 3D CELL CULTURE MATRICES	689
<i>Fangqi Gu</i>	
PLATELET BEHAVIOR ON MICRON AND SUB-MICRON FIBRES OF BIORESORBABLE SUPRAMOLECULAR POLYMER	690
<i>Luke Burke</i>	
MANUFACTURING METHACRYLATED SODIUM ALGINATE BETA-CYCLODEXTRIN MICROSPHERES FOR DRUG DELIVERY	691
<i>Michael Karasinski</i>	

TISSUE ENGINEERED DISEASE MODELS

AN EX VIVO 3D-CANCER MODELS WITH BLOOD/LYMPH CAPILLARIES ELUCIDATE LOCAL SECRETION OF DIFFERENT TYPES OF MMPs DURING METASTASIS PROCESS	692
<i>Michiya Matsusaki</i>	
HUMAN AORTIC VALVE INTERSTITIAL CELLS MECHANOTRANSDUCTION BY AN OUTSIDE-IN YAP-DEPENDENT SIGNAL TRANSDUCTION PATHWAY	693
<i>Rosaria Santoro</i>	
A RAT MODEL OF SEVERE OSTEOPOROSIS FOR TESTING BONE REGENERATION CONSTRUCTS	694
<i>Michele Waters</i>	
AGED SKELETAL MUSCLE ECM PROMOTES ENHANCED PRO-INFLAMMATORY MACROPHAGE RESPONSE	695
<i>Samuel Lopresti</i>	
SURFACE MARKER EXPRESSION OF BONE MARROW- AND ADIPOSE-DERIVED STEM CELLS FROM A RAT MODEL OF SEVERE OSTEOPOROSIS	696
<i>Michele Waters</i>	
ONTOMIMETIC DIFFERENTIATION OF PATIENT-DERIVED HIPSCS TO STUDY CONGENITAL HEART DISEASE	697
<i>Morgan Ellis</i>	
GENERATION OF GLYCOSAMINOGLYCAN-ENRICHED SCAFFOLDS TO DECIPHER AORTIC VALVE DISEASE PATHOBIOLOGY	698
<i>Ana Porras</i>	

TISSUE ENGINEERING

A COMPARATIVE STUDY OF THE BONE REGENERATIVE EFFECT OF CHEMICALLY MODIFIED RNA ENCODING BMP-2 OR BMP-9	699
<i>Behmoush Khorsand</i>	
SEAMLESS SCAFFOLDS CONTAINING GRADIENTS OF MICROSPHERES FOR TISSUE ENGINEERING	700
<i>Amir Najarzadeh</i>	
NERVE REGENERATION USING LYSOPHOSPHATIDYLCHOLINE AND NERVE GROWTH FACTOR	701
<i>Ryan Wood</i>	
COVALENTLY-LINKED MODIFIERS FOR PROTEIN ADSORPTION AND CELL ATTACHMENT ONTO PEG GELS	702
<i>Kimberly Lewis</i>	
EVALUATION AND ULTRASOUND-MEDIATED HYDROGELATION OF SHORT, SELF-ASSEMBLING PEPTIDES FOR USE AS MODULAR TISSUE ENGINEERING SCAFFOLDS	703
<i>Alexander Noblett</i>	
BIOACTIVE GLASS SCAFFOLDS FOR DENTAL PULP AND DENTIN TISSUE ENGINEERING	704
<i>Hassan Shawli</i>	
UTILIZATION OF 3D SPHEROID CULTURE SYSTEM AND VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) TO ENHANCE ENDOTHELIAL DIFFERENTIATION OF HUMAN ADIPOSE DERIVED STEM CELLS	705
<i>Amol Janorkar</i>	
NOVEL AMORPHOUS SILICA FUSED FIBER MATRIX FOR BONE TISSUE ENGINEERING	706
<i>Syam Nukavarapu</i>	

TISSUE ENGINEERING SCAFFOLD FABRICATION

FORMATION OF NANOFIBROUS 3D SCAFFOLDS AND INJECTABLE MICROSPHERES: FROM THEORY TO PRACTICE	707
<i>Chi Ma</i>	
PHYSICAL CHARACTERIZATION OF ELASTIN-LIKE POLYPEPTIDE AND COLLAGEN COMPOSITES WITH VARIED SCAFFOLD FORMULATIONS	708
<i>Bhuvaneswari Gurumurthy</i>	

A NEW GENERATION OF ELECTROSPUN 3D NANOFIBROUS SCAFFOLD WITH INTERCONNECTED AND HIERARCHICALLY STRUCTURED PORES FOR BONE TISSUE ENGINEERING	709
<i>Hongli Sun</i>	
DEVELOPMENT OF TISSUE SCAFFOLDS FOR BIOMEDICAL APPLICATIONS USING COMPUTER AIDED TISSUE ENGINEERING	710
<i>Nitin Sahai</i>	
NANOCELLULOSE-PE-B-PEG COPOLYMER NANOHYBRID SHISH-KEBAB STRUCTURE AND INTERACTION WITH MC3T3-E1 CELLS	711
<i>Dilip Depan</i>	
EVALUATING CELL PROLIFERATION FOR HYDROXYAPATITE SCAFFOLD ARCHITECTURES USING 3D-PLOTTING	712
<i>Pranav Sapkal</i>	
CELL MICROPATTERNING ON CELL SURFACES USING MULTI-ARMED-POLY(ETHYLENE GLYCOL)-EICOSAPENTAENOIC ACID	713
<i>Kosuke Yanagisawa</i>	
ELECTROCHEMICAL FABRICATION OF ELASTIN CONTAINING BI-LAYERED VASCULAR SCAFFOLD	714
<i>Vipuil Kishore</i>	
SYNTHESIS AND DEGRADATION OF POLY(β-AMINO ESTER) FIBERS	715
<i>Tri Andrew Phan</i>	
PCL/GELATIN NANOCOMPOSITE SCAFFOLDS FOR POTENTIAL USE AS LIGAMENT OR TENDON SUBSTITUTES	716
<i>Saeedeh Matin Nikoo</i>	
CELL ADHESION ON COMPOSITE BONE SCAFFOLDS DEVELOPED BY A HYBRID 3D-BIOPLOTTING/THERMALLY-INDUCED PHASE SEPARATION TECHNIQUE	717
<i>Riley Sheppard</i>	
POLYLACTIC-BASED SCAFFOLDS DOPED WITH CALCIUM SILICATE/CALCIUM PHOSPHATE: CHEMICAL-MICROMORPHOLOGICAL ANALYSES	718
<i>Maria Giovanna Gandolfi</i>	
ENHANCED BIOCOMPATIBILITY ON TA-IMPLANTED POLY(LACTIC ACID) SURFACE	719
<i>Cheonil Park</i>	
ELECTRICALLY CONDUCTIVE GRAPHENE/POLYACRYLAMIDE HYDROGELS FOR ENHANCED MYOBLAST GROWTH AND DIFFERENTIATION	720
<i>Myeongbu Sim</i>	
BILAYERED SCAFFOLDS (LOOFAH/PLLA/CELLULOSE/CHITIN) FOR OSTEOCHONDRAL DEFECT REPAIR: SYNTHESIS AND IN-VITRO CHARACTERIZATION	721
<i>Berivan Cecen</i>	
NOVEL POLYACRYLATES SUPPORTED HUMAN AORTIC VALVE INTERSTITIAL CELLS GROWTH AND PHYSIOLOGIC DIFFERENTIATION IN A 3D ENVIRONMENT	722
<i>Rosaria Santoro</i>	
ENZYMATICALLY CROSS-LINKED SILK FIBROIN SCAFFOLDS SUPPORT HUMAN ADIPOSE-DERIVED STEM CELLS CHONDROGENESIS	723
<i>Viviana Ribeiro</i>	
COAXIAL ELECTROSPUN FIBER SYSTEM FOR PROLONGED DEXAMETHASONE RELEASE TARGETING CARDIAC INFARCTION	724
<i>Aaron Goldstein</i>	
EFFICIENT PARAMETRIC WAY TO INDUCE CUSTOMIZED INTERNAL 3D POROSITY IN GRAFTS FOR BONE TISSUE ENGINEERING	725
<i>Deepak Gupta</i>	
EFFECT OF PRINT DIRECTION ON MECHANICAL PROPERTIES OF A 3D PRINTED FLEXIBLE LACTIDE-BASED COPOLYMER	726
<i>M. Scott Taylor</i>	
FUNCTIONALIZATION OF 3D ELECTROSPUN NANOFIBROUS POLYCAPROLACTONE SCAFFOLDS FOR BONE TISSUE ENGINEERING	727
<i>Jacob Miszuk</i>	
ELECTROSPUN POLY(E-CAPROLACTONE) NANOFIBER SHISH KEBABS MIMIC MINERALIZED COLLAGEN FIBRILS IN BONE	728
<i>Tony Yu</i>	
3D BIOPRINTING OF ORGAN-SCALE TYPE I COLLAGEN SCAFFOLDS	729
<i>T. J. Hinton</i>	
3D BIOPRINTING COLLAGEN SCAFFOLDS FOR ENGINEERING HUMAN CARDIAC TISSUE	N/A
<i>Andrew Lee</i>	
SYNTHETIC HYDROGEL SUPPORTS THE DEVELOPMENT OF MOUSE PRIMARY OVARIAN FOLLICLES CO-CULTURED WITH ADIPOSE DERIVED STEM CELLS	730
<i>Hong Zhou</i>	
3D DYNAMIC CULTURE OF TRABECULAR MESHWORK CELLS	731
<i>Melissa Krebs</i>	
OSTEOBLAST LOADED INJECTABLE HYDROGEL/TI-6AL-4V SYSTEM FOR THE FASTER BONE REGENERATION	732
<i>Alok Kumar</i>	

IMPROVING FRESH 3D BIOPRINTING FIDELITY USING COACERVATION-DERIVED MICROPARTICLES	N/A
<i>Andrew Hudson</i>	
MECHANICAL AND BIOLOGICAL EVALUATION OF KNITTED POLY-L-LACTIC ACID SCAFFOLD FOR DELIVERY OF CARDIOSPHERE DERIVED CELLS (CDCS)	733
<i>Jiyang Chen</i>	
PCL/MAGNESIUM BASED COMPOSITE NANOFIBERS FOR PERIPHERAL NERVE REPAIR APPLICATION	734
<i>Udhab Adhikari</i>	
FLOW-INDUCED SHEAR DISTRIBUTIONS ON 3D PRINTED SCAFFOLDS	735
<i>Cortes Williams</i>	
EVALUATING THE CYTOCOMPATIBILITY AND DIFFERENTIATION OF BONE PROGENITORS ON ZEIN-DERIVED SCAFFOLDS	736
<i>Jessica Cardenas Turner</i>	
ROS-DEGRADABLE SCAFFOLDS ENHANCE TISSUE REGENERATION IN A PORCINE ISCHEMIC WOUND HEALING MODEL	737
<i>Prarthana Patil</i>	
TWO-PHOTON POLYMERIZATION OF HIGH-RESOLUTION 3D, BIODEGRADABLE PHOTORECEPTOR CELL SCAFFOLDS	738
<i>Kristan Worthington</i>	
DIRECT ELECTROSPINNING OF CELL-LOADED POLY(OLIGOETHYLENE GLYCOL METHACRYLATE) (POEGMA) NANOFIBROUS GEL SCAFFOLDS	739
<i>Fei Xu</i>	
OPTIMIZATION OF AN EMPIRICAL CRYOPRESERVATION PROCESS FOR ENGINEERED HEPATIC ENCAPSULATES	740
<i>Erika Johnson</i>	
ELECTROSTATIC ENCAPSULATION OF PRIMARY HEPATOCYTES IN ALGINATE MICROBEADS	741
<i>Shalil Khanal</i>	
3D NEAR-FIELD ELECTROSPINNING: A NEW APPROACH FOR MANUFACTURING FIBROUS SCAFFOLD FOR CELLULAR INGROWTH	742
<i>Pouria Fattahi</i>	
CHONDROINDUCTIVE HYDROGELS FROM NATURALLY DERIVED CARTILAGE MATRIX	743
<i>Francisca Acosta</i>	
THE EFFECT ON CELL INITIAL ADHESION AND INFILTRATION ON MODIFIED CHITOSAN NANOFIBER SCAFFOLDS	744
<i>Bon Kang Gu</i>	
IMPLANTABLE AUTOLOGOUS DERMAL TISSUES PREPARED BY HIGH HYDROSTATIC PRESSURE FOR TREATING CONGENITAL GIANT MELANOCYTIC NEVUS	745
<i>Tetsuji Yamaoka</i>	
PIG PALATE STEM CELLS AND SMART SCAFFOLD AS A CHALLENGE FOR CLEFT PALATE	746
<i>Raul Rosales-Ibanez</i>	
THE IN VITRO AND IN VIVO INVESTIGATION ON SMALL DIAMETER TISSUE ENGINEERING VASCULAR SCAFFOLD MADE FROM HEPARIN MODIFIED POLYCAPROLACTONE (HPCL)	747
<i>Lin Ye</i>	
DEVELOPMENT OF POLY(PROYLENE FUMARATE) (PPF), VINYL PHOSPHONIC ACID (VPA) AND VINYL PHOSPHONIC ACID DIETHYL ESTER (VPES) BASED SCAFFOLDS FOR BONE TISSUE ENGINEERING	748
<i>Görkem Cemali</i>	
EFFECTS OF 3D PRINTING ON FLOW-INDUCED SHEAR DISTRIBUTIONS	749
<i>Cortes Williams</i>	
HYBRID EXTRACELLULAR MATRIX SCAFFOLD FOR TENDON OR CORNEAL REPAIR	750
<i>Yi-You Huang</i>	
FABRICATION OF KERATIN/GELATIN/FIBRIN BASED BIOFILM FROM INDIAN GOAT HOOF WASTE SOURCE FOR WOUND HEALING APPLICATIONS	751
<i>S Logesh Kumar</i>	
FIBER LENGTH AND CONCENTRATION - SYNERGISTIC EFFECT ON MECHANICAL AND CELLULAR RESPONSE IN WET-LAID POLY(LACTIC ACID) FIBROUS SCAFFOLDS	752
<i>Andrew Wood</i>	
<u>TISSUE ENGINEERING SCAFFOLD FABRICATION</u>	
NANOPARTICLES ENHANCED ADHESION STRENGTH OF MUSSEL-INSPIRED BASED HYDROGELS	753
<i>Nikhil Pandey</i>	
<u>NANOMATERIALS</u>	
GOLD QUANTUM CLUSTER-PHOTOSENSITIZER CONJUGATE FOR FLUORESCENCE IMAGING ASSISTED PHOTODYNAMIC THERAPY	754
<i>Ramapurath Jayasree</i>	

SYNTHESIS OF FUNCTIONAL GOLD NANOPARTICLES RESISTANT TO PH AND SALT FOR BIOMEDICAL APPLICATIONS	755
<i>Govind Pandey</i>	
ENHANCED ANTIBACTERIAL PROPERTY OF SELF-ASSEMBLING PEPTIDE AMPHIPHILES FUNCTIONALIZED WITH HEPARIN-BINDING CARDIN-MOTIFS	756
<i>Run Chang</i>	
PROTECTION OF HUMAN VASCULAR ENDOTHELIAL CELLS FROM OXIDATIVE STRESS DAMAGE THROUGH AUTOPHAGY INDUCED BY IRON OXIDE NANOPARTICLES	757
<i>Rongrong Jin</i>	
SILVER NANOPARTICLES & ION SILVER IN THE ANTIMICROBIAL ACTIVITY	758
<i>Luiz Gorup</i>	
LUMBRICUS TERRESTRIS ERYTHROCRUORIN-POLY(ACRYLIC ACID) NANOPARTICLES FOR A ULTRA-STABLE HEMOGLOBIN BASED OXYGEN CARRIERS	759
<i>Kyle Spivack</i>	
SELF-ASSEMBLY OF AROMATIC DIPEPTIDES AND TRI-PEPTIDES UTILIZING ELECTROSTATIC FORCES	763
<i>Yasaman Hamedani</i>	
DEVELOPMENT OF NANOSCALE CERIA-SOD ANTIOXIDANT CONJUGATES	764
<i>Jeannette Rodriguez</i>	
GRAPHENE QUANTUM DOT SYNTHESIS USING NANOSECOND LASER PULSES FOR PATHOGENIC BACTERIA DEACTIVATION	765
<i>Ali Oguz Er</i>	

ENGINEERING TISSUE AND MATERIAL INTERFACES

GELLAN GUM BASED THIOL-ENE HYDROGELS WITH TUNABLE PROPERTIES FOR USE AS TISSUE ENGINEERING SCAFFOLD	766
<i>Zihao Xu</i>	
MECHANICAL CHARACTERIZATION OF A NOVEL BIFUNCTIONAL TETRONIC® HYDROGEL ADHESIVE FOR SURGICAL MESH FIXATION	767
<i>Xinyue Lu</i>	
CELL-SUBSTRATE INTERACTIONS ON KERATIN BIOMIMETIC COATING FOR PERCUTANEOUS PROSTHETIC APPLICATIONS	768
<i>Alexis Trent</i>	
INJECTABLE AND THERMOSENSITIVE CHITOSAN HYDROGELS FOR THE PREVENTION OF POST-OPERATIVE PERITONEAL ADHESIONS	769
<i>Eve Hui</i>	
THERMORESPONSIVE FILMS FOR HUMAN EMBRYONIC STEM CELL PROLIFERATION AND HEPATIC DIFFERENTIATION	770
<i>Kevin Ortiz-Rivera</i>	
FABRICATION OF NEW BIO-ORGANIC COLLAGEN-PROTEOGLYCAN COMPOSITES FORTENDON AND LIGAMENT TISSUE ENGINEERING	771
<i>Ipsita Banerjee</i>	

HIGH-THROUGHPUT METHODS TO CONTROL CELL BEHAVIOR

MATERIAL FLOW CYTOMETRY - HIGH-THROUGHPUT, HIGH REPLICATE SCREENING OF SHAPE-SPECIFIC BIOMATERIALS FOR STEM CELL DIFFERENTIATION	772
<i>Kirsten Parratt</i>	
MAXIMIZING HUMAN INDUCED PLURIPOTENT STEM CELL DERIVED NEURAL STEM CELL SURVIVAL, AXON EXTENSION AND GENE EXPRESSION OF NEURAL DIFFERENTIATION MARKERS USING POLYETHYLENE GLYCOL HYDROGELS CONTAINING A CONTINUOUS CONCENTRATION GRADIENT IN N-CADHERIN DERIVED	773
<i>Laura Smith Callahan</i>	
ENGINEERING A MICROPHYSIOLOGICAL MODEL OF THE HEART-BRAIN AXIS	774
<i>Ryan Koppes</i>	

PRINTING AND PATTERNING OF CELL MICROENVIRONMENTS

RAPID 3-D MICROCHANNEL GENERATION USING A MULTIPHOTON LASER SYSTEM AS A TEMPLATE FOR MICROVASCULATURE	775
<i>Chris Bashur</i>	

PROTEIN AND CELLS AT INTERFACES

FXII CONTACT AUTOACTIVATION, RECIPROCAL ACTIVATION, AND AUTOHYDROLYSIS IN RESPONSE TO SOLID ACTIVATORS	776
<i>Christopher Stedlecki</i>	
MAGNETIC FIELD -DEPENDENT PROTEIN CORONA ONTO SUPERPARAMAGNETIC IRON OXIDE NANOPARTICLES INFLUENCES THEIR BIOLOGICAL BEHAVIORS	777
<i>Wu Yao</i>	

SUPRAMOLECULAR MATERIALS FOR BIOMEDICAL APPLICATIONS

CO-ASSEMBLY TAGS BASED ON CHARGE (CATCH) FOR INSTALLING FUNCTIONAL PROTEIN LIGANDS INTO SUPRAMOLECULAR BIOMATERIALS	778
<i>Dillon Seroski</i>	

DEGRADABLE METAL BIOMATERIALS

HYBRID SCAFFOLDS OF MG ALLOY MESH EMBEDDED WITHIN POLYMER/ECM COMPOSITE FOR CRITICAL-SIZED CALVARIAL DEFECT RECONSTRUCTION	779
<i>Yingqi Chen</i>	
INVESTIGATION OF MC3T3-E1 PRE-OSTEOBLAST APOPTOTIC RESPONSE TO BIODEGRADABLE MAGNESIUM ALLOYS	780
<i>Annelie Weinberg</i>	
CORROSION PROTECTION AND CYTOCOMPATIBILITY OF TITANIA/CALCIUM PHOSPHATE COMPOSITE COATING ON AN MG ALLOY	781
<i>Yingchao Su</i>	
EFFECT OF HEAT TREATMENT ON THE CORROSION RESISTANCE OF AZ31 ALLOY AS A BIODEGRADABLE IMPLANT	782
<i>Sohrab Khalifeh</i>	

GLYCOMATERIALS

EVALUATION OF CHITOSAN FILM AND ELECTROSPUN MEMBRANES IN FIBROBLAST AND OSTEOBLAST CULTURE	783
<i>Hengjie Su</i>	

ORTHOPAEDIC BIOMATERIALS

FABRICATION AND CHARACTERIZATION OF 3D PRINTED PLA/TI COMPOSITE SCAFFOLDS BY FDM PROCESS FOR HARD TISSUE ENGINEERING	784
<i>Jina Lee</i>	
BIOMINERAL COATING PROMOTES REDUCES INFLAMMATORY BEHAVIOR OF PEEK IMPLANTS	786
<i>Leena Jongpaiboonkit</i>	
MODIFICATION OF BONE-DERIVED BIOLOGICAL APATITE VIA FLUORIDE INCORPORATION: CHANGES IN PHYSICOCHEMICAL AND BIOLOGICAL PROPERTIES	787
<i>Wei Qiao</i>	
RESTORATION OF BONE DEFECTS USING A $\text{CaSO}_4/\text{CaPO}_4$-TCP BONE GRAFT SUBSTITUTE COMPARED TO CANCELLOUS ALLOGRAFT	788
<i>Deborah Hall</i>	
BIOGLASS INCORPORATION IMPROVES THE BIOACTIVITY OF ELECTROCHEMICALLY ALIGNED COLLAGEN FIBERS	789
<i>Madhura Nijasure</i>	
FABRICATION OF CARBONATE APATITE HONEYCOMB AND ITS IN VIVO EVALUATION	790
<i>Kunio Ishikawa</i>	
IN VIVO BONE TUNNEL EVALUATION OF NANOPARTICLE ACL GRAFTS	791
<i>Sheila Grant</i>	
A PATIENT SPECIFIC 3D PRINTED SCAFFOLD FOR FEMORAL LONG SEGMENT REGENERATION	792
<i>Jacqueline Buchak</i>	
POLY-METHYL METHACRYLATE (PMMA) BONE CEMENT INCORPORATED WITH HYDROXYAPATITE (HA) MICROSPHERES FOR ENHANCED BIOCOMPATIBILITY AND RADIOCAPACITY	793
<i>Ingu Kang</i>	
EFFECT OF CALCIUM PHOSPHATE REINFORCEMENT ON GELATIN-CHITOSAN FOR DEVELOPING A 3D POROUS COMPOSITE SCAFFOLD FOR BONE TISSUE ENGINEERING- A COMPARATIVE STUDY	795
<i>Kanchan Maji</i>	

3D PRINTED PCL/B-TCP COMPOSITE SCAFFOLDS FOR BONE REGENERATION IN FEMORAL DEFECTS	N/A
<i>Geunseon Ahn</i>	
EFFECT OF SOLUTION CHEMISTRY AND TEMPERATURE ON TAPER ELECTROCHEMICAL PERFORMANCE	796
<i>Viswanathan Swaminathan</i>	
A METHOD FOR THE SURFACE CHARACTERIZATION OF MODULAR CONNECTIONS IN TOTAL HIPS	797
<i>Matthew Di Prima</i>	
CHARACTERIZATION OF A NOVEL BIOACTIVE GLASS AND GAG COMPOSITE FOR BONE GRAFTING APPLICATIONS	798
<i>Chloë Goldbach</i>	
OSTEOINDUCTIVE COLLAGEN-CALCIUM CITRATE COMPOSITE PLATFORM FOR BONE TISSUE ENGINEERING	799
<i>Mousa Younesi</i>	
COLLAGEN YARNS FOR ROTATOR CUFF REPAIR GRAFT	800
<i>Yu Xie</i>	
PERFUSION DIRECTED 3D BONE MINERAL FORMATION	801
<i>Stephen Sawyer</i>	
CORROSION MODES IN MODULAR TAPER JUNCTIONS CAN BE DICTATED BY COCRMO ALLOY MICROSTRUCTURE	802
<i>Robin Pourzal</i>	
ATTACHING A HYDOXYAPATITE-BINDING DOMAIN TO BMP2-DERIVED PEPTIDES TO ANCHOR PEPTIDES ONTO BONE GRAFT MATERIALS	803
<i>Andrew Curry</i>	
APPLICATION OF PHASE SPACE WARPING TO THE STUDY OF FATIGUE IN BONE	804
<i>Carolyn Skurla</i>	
MAGNETICALLY ALIGNED ALGINATE-HYDROXYAPATITE BIOCOMPOSITES FOR BONE GRAFT APPLICATIONS	805
<i>Jessica Faust</i>	
CHARACTERIZATION OF THE VISCOELASTIC AND DIFFUSIVE PROPERTIES OF LOW FRICTION ZWITTERIONIC HYDROGEL BLENDS	806
<i>Emily Lindberg</i>	
STRENGTHENING OF AN ADHESIVE POLYSACCHARIDE HYDROGEL WITH HYDROXYAPATITE RODS FOR BONE TISSUE ENGINEERING	N/A
<i>Michael Riederer</i>	
BIOCOMPATIBILITY EVALUATION OF ELECTROSPUN GELATIN NANOFIBER SCAFFOLDS IN CALVARIAL DEFECT MOUSE MODEL	807
<i>Bianca Montano</i>	
MECHANICAL EVALUATION OF A NOVEL COMPOSITE MATERIAL FOR MENISCUS REPLACEMENT	808
<i>Adijat Inyang</i>	
THE INTERACTION OF THREADS AND IMPLANT MICROTOPOGRAPHY ON IMPLANT RESISTANCE TO REVERSE TORQUE	809
<i>Robert Liddell</i>	
CALCIFIED AND SILICIFIED COLLAGEN SCAFFOLDS FABRICATED USING DUAL-FUNCTIONAL NON-COLLAGENOUS PROTEIN ANALOG	810
<i>Changmin Hu</i>	
EFFECT OF SINTERING TIME ON MECHANICAL PROPERTIES OF POROUS TI-6AL-4V IMPLANT	811
<i>Akeem Azeez</i>	

UHMWPE, IS IT GOOD ENOUGH?

EFFECT OF PRESOAK CONDITIONS AND LOAD SOAK CONTROL TEMPERATURE ON UHMWPE SORPTION	817
<i>Jonathan Henderson</i>	

OPHTHALMIC BIOMATERIALS

SURFACE TREATMENT OF SILICONE MATERIALS	818
<i>Can Hu</i>	
DEVELOPMENT OF A TOPICAL OPHTHALMIC BIOMATERIAL FOR THE CONTROLLED RELEASE OF CYSTEAMINE	819
<i>Jorge Jimenez</i>	
BIOMIMETIC MATERIALS FOR OCULAR SURFACE REPAIR	820
<i>Christopher Tison</i>	
SURFACE MODIFICATION OF MODEL CONTACT LENSES WITH WETTING AND LUBRICATING AGENTS FOR IMPROVED OCULAR COMPATIBILITY	821
<i>Myrto Korogiannaki</i>	

SHRINK WRAPPING CELLS IN ECM PROTEIN NANO-SCAFFOLDS FOR REPAIR OF THE CORNEAL ENDOTHELIUM	822
<i>Rachelle Palchesko</i>	
REGENERATION PERMISSIVE RETINAL ECM AS VEHICLE FOR RETINAL PROGENITOR CELL DELIVERY	823
<i>Joydip Kundu</i>	
PAMAM DENDRIMERS FOR IMPROVED TIMOLOL DELIVERY	824
<i>Michael Lancina</i>	
IMPROVING SILICONE ELASTOMER HYDROPHILICITY WITH HYALURONAN	825
<i>Richard Koch</i>	
TISSUE DERIVED EXTRACELLULAR MATRIX STABILIZES CORNEAL BIOMECHANICS AND ULTRASTRUCTURE	826
<i>Xiaokun Wang</i>	

ACELLULAR BIOMATERIALS FOR MYOCARDIAL REPAIR

DECELLULARIZATION OF URETER AS A NEW SCAFFOLD FOR SMALL VASCULAR VESSEL IN RABIT	827
<i>Yujin Myung</i>	
DIRECTING THE MOBILIZATION AND HOMING OF STEM CELLS FOR CARDIAC REPAIR	828
<i>Emily Mulvany</i>	
AN INJECTABLE SULFONATED REVERSIBLE THERMAL GEL FOR THERAPEUTIC ANGIOGENESIS TO PROMOTE THE RECOVERY OF CARDIAC FUNCTION AFTER A MYOCARDIAL INFARCTION	829
<i>David Lee</i>	

BIOMATERIALS FOR CARDIOVASCULAR REGENERATION

VERSATILE EXTRACELLULAR MATRIX IMMOBILIZATION ON A METAL STENT FOR OUTGROWTH ENDOTHELIAL CELL DELIVERY	830
<i>Dong Keun Han</i>	
PEGYLATED CHITOSAN GRAFT FOR BLOOD VESSEL REPAIRATION	831
<i>Anlin Yin</i>	
MYOCARDIAL EXTRACELLULAR MATRIX IMPREGNATED WITH SYNTHETIC CARDIAC STEM CELLS FOR CARDIAC REGENERATION	832
<i>Ke Huang</i>	
DEVELOPMENT OF HYALURONAN-BASED MICRORODS FOR THE ATTENUATION OF CHRONIC CARDIAC FIBROSIS	834
<i>Long Le</i>	
EVALUATION OF AN INJECTABLE POLYMERIC DELIVERY SYSTEM FOR CONTROLLED AND LOCALIZED RELEASE OF BIOLOGICAL FACTORS TO PROMOTE THERAPEUTIC ANGIOGENESIS	835
<i>Adam Rocker</i>	
ANTITHROMBOTIC POLYURETHANE MATERIALS WITH TUNABLE MECHANICAL PROPERTIES FOR VASCULAR GRAFTS	836
<i>Alexander Stahl</i>	

CARDIOVASCULAR BIOMATERIALS

CONJUGATING CHONDROITIN SULFATE ON AMINE-RICH SURFACE: TOWARDS BETTER MULTI-FUNCTIONS FOR CARDIOVASCULAR IMPLANTED BIOMATERIALS	837
<i>Jingan Li</i>	
POLYHYDROXYALKANOTES, POTENTIAL NEW MATERIALS FOR CARDIAC TISSUE ENGINEERING	838
<i>Ipsita Roy</i>	
NOVEL NON-THROMBOGENIC/NON-FOULING THERMOPLASTIC POLYURETHANES FOR CARDIOVASCULAR DEVICES	839
<i>Roger Day</i>	
ENHANCING EXPANDED POLYTETRAFLUOROETHYLENE WITH HYALURONAN FOR SMALL DIAMETER VASCULAR GRAFT APPLICATIONS	840
<i>Hieu Bui</i>	
TRANS-CATHETER CARDIOVASCULAR SURGERY: HOW CRIMPING CAN AFFECT THE DURABILITY OF THE IMPLANTS	841
<i>Frederic Heim</i>	
ZIRCONIA-POLYURETHANE ANEURYSM CLIP FOR REDUCING SUSCEPTIBILITY ARTIFACT IN MAGNETIC RESONANCE IMAGING	842
<i>Kyungil Cho</i>	
HYDROGEN PEROXIDE-RESPONSIVE ANTIOXIDANT POLYMERIC PRODRUGS AS ON DEMAND THERAPEUTICS FOR CARDIAC INJURY	843
<i>Changsun Kang</i>	

MULTI-LAYERED VASCULAR GRAFTS WITH IMPROVED COMPLIANCE MATCHING AND SUTURABILITY FOR LONG TERM PATENCY	844
<i>Allison Post</i>	
DEVELOPMENT OF A COLLAGEN-MATRIGEL SCAFFOLDS FOR STUDYING HEAT VALVE MECHANOBIOLOGY	845
<i>Ngoc Lam</i>	
DIFFERENTIAL RESPONSES OF HEALTHY AND TYPE II DIABETIC ENDOTHELIAL CELLS ON TOPOGRAPHY	846
<i>Evelyn Yim</i>	
FABRICATION OF HUMAN SERUM ALBUMIN FILM ON EXPANDED POLYTETRAFLUOROETHYLENE (E-PTFE) FOR ENHANCED HEMOCOMPATIBILITY AND ADHESION STRENGTH	847
<i>Astha Khanna</i>	
A NOVEL TRI-COMPONENT POLYMERIC ELECTROSPUN SCAFFOLD FOR VASCULAR TISSUE ENGINEERING	848
<i>Taylor Repetto</i>	

IRRADIATION OF BIOMATERIALS: RECENT DEVELOPMENT

IMPACT OF RADIATION STERILIZATION ON THE DEGRADATION BEHAVIOR OF POLY(LACTIC ACID) (PLA) TUBING FOR ABSORBABLE CARDIOVASCULAR STENTS	849
<i>Ji Guo</i>	

BROADENING PARTICIPATION IN ENGINEERING

IMPROVING SCIENTIFIC COMMUNICATION OF UNDERGRADUATES THROUGH PEER EVALUATION	850
<i>C. Lashan Simpson</i>	

ADDITIONAL PAPER

EFFICIENTLY IMPROVING CELL ADHESIVE PROPERTY OF POLY (AMINO ACID) BY CO-POLYMERIZING WITH CYCLIC PHOSPHOESTER	851
<i>Y. Xiong, H. Li, P. Wang, Y. Yan</i>	

Author Index