

2014 40th Annual Northeast Bioengineering Conference (NEBEC 2014)

**Boston, Massachusetts, USA
25-27 April 2014**



**IEEE Catalog Number: CFP14NEB-POD
ISBN: 978-1-4799-3729-5**

TABLE OF CONTENTS

ACCELERATED DIFFERENTIATION OF MESENCHYMAL STEM CELLS TOWARD ADIPOGENIC LINEAGE VIA SUSPENSION-BASED SHEAR STIMULATION	1
<i>Adeniran-Catlett, Adedayo ; Murthy, Shashi</i>	
DEVELOPMENT OF A ROBOTIC DEVICE TO IMPROVE CHRONIC ANKLE INSTABILITY THROUGH CONTROLLED PERTURBATION	3
<i>Adolf, Garrick ; Bolton, Michael ; Bonia, Tom ; Daly, Sean ; Maurice, Oliver ; Murphy, Patrick ; Mavroidis, Constantinos ; Yen, Sheng-Che</i>	
SELECTIVELY CONTROLLING THE 2D ORGANIZATION OF MAMMALIAN CELLS: TEMPLATED ASSEMBLY BY SELECTIVE REMOVAL (TASR) FOR MEDICAL APPLICATIONS	5
<i>Agarwal, Gunjan ; Livermore, Carol</i>	
PARAMETER ESTIMATION OF HEART VALVE LEAFLET HYPERELASTIC MECHANICAL BEHAVIOR USING AN INVERSE MODELING APPROACH	7
<i>Aggarwal, Ankush ; Sacks, Michael S.</i>	
IS ESTIMATION OF FLOQUET MULTIPLIERS OF HUMAN WALKING VALID?	9
<i>Ahn, Jooeun ; Hogan, Neville</i>	
POLYMERIC NANOPARTICLES AS IMMUNOMODULATORY VACCINE ADJUVANTS FOR ATHEROSCLEROSIS	11
<i>Ahuja, Sonali ; Petersen, Latrisha K ; Moghe, Prabhas V ; Uhrich, Kathryn</i>	
TENDON-DERIVED SECTIONS FOR TISSUE ENGINEERING APPLICATIONS	13
<i>Alberti, Kyle A. ; Xu, Qiaobing</i>	
ELECTRONIC ESOPHAGEAL STETHOSCOPE	14
<i>Alhafshan, H. ; Liberacki, E. ; Sherman, E. ; Arico, M.C.</i>	
BLAST SIMULATOR CONSIDERATIONS FOR TESTING SYMMETRICAL SPECIMENS	16
<i>Alphonse, Vanessa D. ; Kemper, Andrew R. ; Duma, Stefan M.</i>	
MECHANICALLY MODELLING BLOOD FLOW THROUGH THE CAROTID ARTERY	18
<i>Alzamanan, M. ; Mutchler, C. ; Ubba, P. ; Arico, M.C.</i>	
A MICROFLUIDIC BIOSENSOR ARRAY FOR ENDOTHELIAL AND CANCER CELL CO-CULTURE INTERACTION STUDIES	20
<i>Amaral, Katey G. ; English, Anthony E. ; Bose, Diptiman D. ; Sani, Shabnam N. ; Moy, Alan B.</i>	
SEGMENTATION OF VENTRICLES IN ALZHEIMER MR IMAGES USING TUKEY'S BIWEIGHT EDGE INDICATOR AND LEVEL SET METHOD	22
<i>Anandh, K R ; Sujatha, C M ; Ramakrishnan, S</i>	
VESTIBULAR STIMULATION FREQUENCY FOR ALTERING SPASTICITY IN INDIVIDUALS WITH CEREBRAL PALSY	24
<i>Andrewis, Ghaith J. ; Strongwater, Allan ; Foulds, Richard A.</i>	
SPASTICITY AND DYSTONIA DIFFERENTIATED VIA THE EQUILIBRIUM POINT HYPOTHESIS	26
<i>Andrewis, Ghaith J. ; Strongwater, Allan ; Foulds, Richard A.</i>	
AN ELECTRONIC SIX-MINUTE WALK TEST PLATFORM FOR CLINICAL APPLICATIONS	28
<i>Bai, Yicheng ; Krishnamurti, Lakshmanan ; Jia, Wenyan ; Mao, Zhi-Hong ; Sun, Mingui</i>	
AUTOMATIC EATING DETECTION USING A PROXIMITY SENSOR	30
<i>Bai, Yicheng ; Jia, Wenyan ; Mao, Zhi-Hong ; Sun, Mingui</i>	
CHARACTERIZING GOLD NANOPARTICLE INTERACTIONS WITH MODEL CELL MEMBRANES	32
<i>Bailey, Christina ; Waterman, Kellie ; Kamaloo, Elaheh ; Macedonio, Jeniece ; Comesano, Terri A.</i>	
MESENCHYMAL STEM CELL MECHANOSENSING IN ENGINEERED FIBRILLAR MICROENVIRONMENTS	34
<i>Baker, Brendon M. ; Trappmann, Britta ; Chen, Christopher S. ; Nair, Abhilash S. ; Kim, Iris L. ; Burdick, Jason A. ; Shenoy, Vivek B.</i>	
FDM BIOPRINTER TO PROMOTE MESENCHYMAL STEM CELL CHONDROGENESIS	36
<i>Banis, G. ; Chan, K. ; Lisa, S. ; Marki, C. ; Wagner, C.T.</i>	
CONCUSSION DETECTION SYSTEM: REDUCING SECOND IMPACT SYNDROME	38
<i>Bankhar, F.A. ; Gettens, R.T.T.</i>	
INTEGRIN BINDING UNIQUELY REGULATES TROPIC BREAST CANCER CELL PHENOTYPES IN VITRO	40
<i>Barney, Lauren E. ; Peyton, Shelly R.</i>	

FINITE ELEMENT ANALYSIS OF THE EFFECTS OF RESTING MUSCLE TONE ON ENTHESIS SITES IN THE LUMBAR SPINE	42
<i>Barry, Alexander ; Mooberry, Mathew ; Corrie, Charlie ; Berry, Michael ; Masi, Alfonse ; Nair, Kalyani</i>	
MEDICATION REMINDING ACTIVITY ANALYZER FOR GUIDED INDEPENDENT LIVING ENVIRONMENTS (MRAAGILE): IMPLEMENTING MOTION DEPENDENT MEDICATION REMINDERS	44
<i>Batrakov, Alexander ; Merida, Patrick ; Bartels, Nathan ; Chabot, Eugene ; Burbank, Patricia ; Sun, Ying</i>	
INFLUENCE OF COLLAGEN FIBER ARCHITECTURE ON CALCIFIC AORTIC VALVE DISEASE PROGRESSION	46
<i>Baugh, Lauren ; Hinds, Phillip ; Huggins, Gordon ; Georgakoudi, Irene ; Black, Lauren D.</i>	
ATTACHMENT-DETACHMENT TRAJECTORY FOR E. COLI BACTERIA IN THE PRESENCE OF SURFACE FORCES	48
<i>Bausemer, Katherine ; Muftu, Sinan ; Wan, Kai-Tak</i>	
THE EFFECT OF TIMING OF GLYCOSAMINOGLYCAN REMOVAL ON DECELLULARIZATION AND RECELLULARIZATION OF CARTILAGE	50
<i>Bautista, Catherine ; Bilgen, Bahar</i>	
BIOABSORBABLE POLYMERIC FRACTURE FIXATION DEVICES AIM TO REDUCE STRESS SHIELDING IN BONE	52
<i>Becker, Gabriella ; Calvis, Allyn ; Hazlett, Lauren ; Verzi, Mary ; Paliwal, Manish</i>	
LOCALIZED TUMOR DELIVERY OF RADIOSENSITIZERS AND CHEMOTHERAPEUTICS USING 'INCERT' IMPLANTS	54
<i>Belz, Jodi ; Kumar, Rajiv ; Markovic, Stacey ; Niedre, Mark ; Sridhar, Srinivas ; Nguyen, Paul ; Niedre, Mark ; Damico, Anthony ; Makrigiorgos, Mike ; Cormack, Robert</i>	
PUNCTURE PROOF RETRACTABLE DEVICE	56
<i>Benison, Lisa G. ; Davis, Calvin D. ; Reiss, Matthew E. ; Schwiker, Katherine H.</i>	
FUNCTIONALIZED NANOPHASE HYDROXYAPATITE (HA) FOR ORTHOPEDIC APPLICATIONS	58
<i>Bhardwaj, Garima ; Webster, Thomas J.</i>	
CONTROLLED TOPICAL DELIVERY OF NITRIC OXIDE FOR TREATING INFECTED CUTANEOUS WOUNDS	60
<i>Bhattacharyya, A. ; Julius, S. ; Barbee, K.A. ; Neidrauer, M. ; Joshi, S.G.</i>	
WAVE-CAIPI ENABLES HIGHLY ACCELERATED 3D MRI	62
<i>Bilgic, Berkin ; Cauley, Stephen F. ; Fan, Audrey P. ; Polimeni, Jonathan R. ; Wald, Lawrence L. ; Setsompop, Kawin ; Gagoski, Borjan A. ; Grant, P.Ellen</i>	
A BACTERIOPHAGE INFECTIVITY ASSAY TO PROBE PARTICLE TRANSPORT THROUGH MUCUS AND BIOFILM MATRICES	64
<i>Billings, N. ; Lu, T.K. ; Ribbeck, K.</i>	
BRAINWAVES AS AUTHENTICATION METHOD: PROVING FEASIBILITY UNDER TWO DIFFERENT APPROACHES	66
<i>Blondet, Maria V.Ruiz ; Khalifian, Negin ; Kurtz, Kenneth J. ; Laszlo, Sarah ; Jin, Zhanpeng</i>	
GPU-ACCELERATED AND MEMORY OPTIMIZED VESSEL ENHANCEMENT FILTERS FOR MICRO-CT TOMOGRAPHY	68
<i>Borsic, Andrea ; Helisch, Armin</i>	
GPU-ACCELERATED REAL TIME SIMULATION OF RADIO FREQUENCY ABLATION THERMAL DOSE	70
<i>Borsic, Andrea ; Hoffer, Eric ; Attardo, Elia A.</i>	
DEVELOPING A BIOSENSOR-LABELED MODEL TISSUE FOR IN VIVO STUDIES OF CELLULAR AND MOLECULAR MECHANOTRANSDUCTION	72
<i>Bouffard, Jeff ; Asthagiri, Anand R. ; Cram, Erin J.</i>	
A DEVICE FOR DYNAMIC MODULATION OF CELL-GENERATED TENSION IN 3D BIOPOLYMER GELS	74
<i>Boulanger, Elisabeth ; Dempsey, Megan ; Jarobski, Tara ; Lurier, Emily ; Kural, Mehmet ; Billiar, Kristen</i>	
THE EFFECTS OF BAREFOOT AND SHOD RUNNING ON RISK OF INJURY IN HIGH SCHOOL, FEMALE, RECREATIONAL RUNNERS	76
<i>Boyer, Megan ; Baltich, Jennifer</i>	
SIMULATING AND PREDICTING GLUCOSE RESPONSE IN LEAN AND OBESE MICE	78
<i>Brenner, M. ; Kwon, G. ; Lee, H.F. ; Johns, M. ; Malik, N.</i>	
PRO-ANGIOGENIC FACTORS ENHANCE PERICYTE FUNCTION DURING ANGIOGENESIS	80
<i>Brudno, Yevgeny ; Aizenberg, Michael ; Mooney, David</i>	
IN SITU ESTIMATION OF AORTIC VALVE INTERSTITIAL CELL MECHANICAL STATE FROM TISSUE LEVEL MEASUREMENTS	82
<i>Buchanan, Rachel M. ; Fagan, Robert J. ; Sacks, Michael S.</i>	

MECHANICAL PALPATION FOR SUBSURFACE SENSING: A DEVICE FOR DETECTING AND LOCATING BREAST CANCER	84
<i>Burke, Paige ; Eley, Robert ; Heyl, Spencer ; McGuire, Margaret ; Radcliffe, Alan</i>	
HOW DEEPLY CELLS FEEL?	86
<i>Buxboim, Amnon ; Swift, Joe ; Ivanovska, Irena L. ; Irianto, Jerome ; Discher, Dennis E.</i>	
FTIR IMAGING ANALYSIS OF BIOACTIVE MICROSPHERE INCORPORATED STEM CELL SHEETS FOR OSTEOCHONDRAL DEFECT REPAIR	88
<i>Caccese, Nicholas ; Palukuru, Uday ; Thakkar, Pooja ; McGoverin, Cushla ; Pleshko, Nancy ; Cheng, Christina ; Solorio, Loran ; Correa, Diego ; Philips, Lauren ; McMillan, Alexandra ; Alsberg, Eben</i>	
REHABILITATION FOR PARAPLEGICS: NORTHEASTERN UNIVERSITY CAPSTONE DESIGN PROJECT 2013	90
<i>Cady, J. ; Francis, S. ; Goddard, W. ; Pallas, S. ; Scott, M.</i>	
DYNAMIC COMPRESSION CHAMBER TO REDUCE SCARRING IN A HAND INJURY	92
<i>Callahan, Tara ; Hammerle, Lauren ; Princiotta, Ashley ; Vos, Becky</i>	
DYNAMIC TESTING SYSTEM FOR EVALUATION OF THE MECHANICAL INTEGRITY OF PROSTHETIC SOCKETS	94
<i>Calverley, A.M. ; Ayotte, C. ; Riofrio, J. ; Cezeaux, J.L.</i>	
CHARACTERIZATION OF AN OPTOGENETIC TRANSLATION ACTIVATION SYSTEM	96
<i>Cao, Jicong ; Arha, Manish ; Sudrik, Chaitanya ; Kane, Ravi S. ; Bugaj, Lukasz J. ; Schaffer, David V.</i>	
THE APOLLOTECH CHARIOT: PHOTODYNAMIC THERAPY LIGHT DELIVERY DEVICE FOR TREATING SUB-CUTANEOUS CANCERS	98
<i>Casali, Jonathan ; Dwyer, Gregory ; Poulin, Brandon ; Zastrow, Joshua ; Wilson, Bryce</i>	
DIAGNOSTIC UTILITY OF EEG BASED BIOMARKERS FOR ALZHEIMER'S DISEASE	100
<i>Cecere, Charlotte ; Corrado, Christen ; Polikar, Robi</i>	
SELECTIVE CYTOTOXICITY OF CURCUMIN LOADED TWIN-BASE LINKER ROSETTE NANOTUBES TOWARDS OSTEOSARCOMA THAN HEALTHY OSTEOBLASTS	102
<i>Chang, Run ; Sun, Linlin ; Fenniri, Hicham ; Webster, Thomas J.</i>	
SEAMLESS RETRIEVAL BAG IMPROVES LAPAROSCOPIC CHOLECYSTECTOMY	104
<i>Chavez, M. ; Connell, K. ; Duenas, D. ; Hu, B. ; Badach, M.</i>	
THE INFLUENCE OF PEG MOLECULAR WEIGHT ON APPARENT HYDROGEL MICROSPHERE SIZE AS MEASURED BY THE COULTER PRINCIPLE	106
<i>Cherukupalli, Abhimanyu ; Pellegrini, Michael ; Falkowski, Ron ; Medini, Michael ; Olabisi, Ronke</i>	
HYDROGEL-BASED SYSTEM FOR MESENCHYMAL STEM CELL RECRUITMENT	108
<i>Choa, Ruth ; Lippens, Evi ; Mehta, Manav ; Mooney, David J. ; Lee, Kangwon ; Madl, Christopher</i>	
ROLE OF ELECTROSTATIC INTERACTIONS IN PROTEIN LOADING IN PLGA-PEG NANOPARTICLES	110
<i>Chopra, Sunandini ; Lim, Jong-Min ; Karnik, Rohit ; Farokhzad, Omid</i>	
MODEL-BASED TENDON SEGMENTATION FROM ULTRASOUND IMAGES	112
<i>Chuang, Bo-I ; Sun, Yung-Nien ; Yang, Tai-Hwa ; Su, Fong-Chin ; Kuo, Li-Chieh ; Jou, I-Ming</i>	
ELECTROSPUN SILK DOPED WITH SELENIUM FOR ANTIBACTERIAL SKIN APPLICATIONS	114
<i>Chung, Stanley ; Ercan, Batur ; Webster, Thomas J. ; Tran, Phong</i>	
EVERY CELL HAS ITS NICHE: HARNESSING MICROTOPOGRAPHY TO CONTROL KERATINOCYTE FATE	116
<i>Clement, Amanda L. ; Pins, George D.</i>	
QUANTIFYING INTRINSIC PROPERTIES OF RESTING LUMBAR MUSCLE IN HEALTHY SUBJECTS USING A HANDHELD MYOMETER	118
<i>Coates, Brandon ; Barry, Alexander ; Dougherty, John ; Schaefer, Emily ; Kelly, Joseph ; Aldag, Jean ; Masi, Alfonse ; Nair, Kalyani</i>	
3-D PRINTED HAND ASSISTIVE EXOSKELETON FOR ACTUATED PINCH AND GRASP	120
<i>Colon, M. ; Hamid, Y. ; Lopez, J. ; Scully, L. ; Kim, S. ; BuSha, B.F.</i>	
EFFECTS OF CYCLIC STRETCH ON THREE-DIMENSIONAL VASCULAR SMOOTH MUSCLE CELL RINGS	122
<i>Cooper, Jennifer L. ; Favreau, John T. ; Gaudette, Glenn R. ; Rolle, Marsha W.</i>	
VASCULAR PERFUSION OF IMPLANTED HUMAN ENGINEERED CARDIAC TISSUE	124
<i>Coulombe, Kareen L.K. ; Murry, Charles E.</i>	
WEARABLE POSTURE DETECTION SYSTEM	126
<i>Crane, A B ; Doppalapudi, S K ; O'Leary, J ; Ozarek, P ; Wagner, C T</i>	
ESTIMATION OF TRANSCRIPTION FACTOR PROFILES FROM FLUORESCENT PROTEIN REPORTER SYSTEMS	128
<i>Dai, Wei ; Hahn, Juergen</i>	

SELENIUM NANOPARTICLES USED AS DRUG DELIVERY VEHICLES FOR TAMOXIFEN	130
<i>D'Antonio, Alyssa ; Webster, Thomas J.</i>	
PLASTICITY IN THE HUMAN MOTOR SYSTEM INDUCED BY PERCEPTUAL LEARNING	132
<i>Darainy, Mohammad ; Vahdat, Shahabeddin ; Ostry, David J.</i>	
THE ROLE OF INTRACELLULAR CALCIUM IN AXONAL INJURY	134
<i>Dastgheyb, R.M ; Barbee, K.A. ; Gallo, G.</i>	
A FLEXIBLE ACTIVE NEEDLE FOR STEERING IN SOFT TISSUES	136
<i>Datla, Naresh V. ; Konh, Bardia ; Hutapea, Parsaoran</i>	
CLINICAL ADMINISTRATION OF LPS ENDOTOXIN SHOW CHANGES IN HEART RATE VARIABILITY ARE DETECTED PRIOR TO CHANGES IN TEMPERATURE	138
<i>Demetrius, Sherley ; Griffel, Benjamin ; Jan, Badar U. ; Coyle, Susette M. ; Macor, Marie A. ; Reddell, Michael ; Calvano, Steve E. ; Semmlow, John L. ; Corbett, Siobhan ; Lowry, Stephen F.</i>	
METHOD FOR DIRECT OBSERVATION OF BIOFILM FORMATION DURING OPERATION ON FORWARD OSMOSIS MEMBRANES	140
<i>Deneff, Jacob I. ; McCutcheon, Jeffrey R. ; Shor, Leslie M.</i>	
VARIATIONS IN MOISTURE RETENTION OF CONTACT-PRINTED SOIL BACTERIA SURFACE COLONIES USING CONFOCAL MICROSCOPY	142
<i>Deng, Jinzi ; Gage, Daniel J. ; Shor, Leslie M.</i>	
NANOTECHNOLOGY IN GLOBAL HEALTH	144
<i>DePew, Rebekka</i>	
TRIGGERING MOTOR ADAPTATIONS AT THE PELVIS USING THE RGR TRAINER	146
<i>Dewarrat, Antoine ; Severini, Giacomo ; Bonato, Paolo ; Pietrusinski, Maciej ; Mavroidis, Dinos</i>	
NEURONAL DIFFERENTIATION OF MOUSE EMBRYONIC STEM CELLS USING MICROFLUIDIC SPATIAL CONFINEMENT OF CELL PARTS AND SOLUBLE FACTORS	148
<i>Dixon, Angela R. ; Anthony, Tiffany ; Ramirez, Yadah ; Barald, Kate F.</i>	
OPTICALLY THIN CELLULAR MICRO-IMPEDANCE ELECTRODE DESIGN OPTIMIZATION	150
<i>Donovan, Ryan A. ; English, Anthony E. ; Bose, Diptiman D. ; Sani, Shabnam N. ; Moy, Alan B.</i>	
ENGINEERING OF FUNCTIONAL PROTEINACEOUS HYDROGELS FOR BIOTECHNOLOGY APPLICATIONS	152
<i>Dooley, Kevin ; Banta, Scott</i>	
ASSESSING KINETICS OF FES ROWING IN SPINAL CORD INJURY PATIENTS	154
<i>Draghici, Adina E. ; Shefelbine, Sandra J.</i>	
NERVE BLOCK TRAINING PHANTOM FOR USE WITH ULTRASOUND SYSTEMS IN LOW-RESOURCE ENVIRONMENTS	156
<i>Dubuc, E.A. ; Rust, M.J. ; Salmon, C.</i>	
AQUATIC PROSTHESIS DESIGN FOR INDIVIDUALS WITH DISABILITIES	158
<i>Ebai, Paul ; Schreiber, Nick ; Gettens, Dr.</i>	
UNCOVERING GLYCOCALYX MECHANOSIGNALING AND MECHANOREMODELING MECHANISMS	160
<i>Ebong, E.E.</i>	
MESH OPTIMIZATION FOR MONTE CARLO BASED OPTICAL TOMOGRAPHY	162
<i>Edmans, Andrew ; Intes, Xavier ; Smith, Cameron</i>	
RAPID HIGH SPATIAL RESOLUTION DIFFUSION MRI AT 7 TESLA USING SIMULTANEOUS MULTISLICE ACQUISITION	164
<i>Eichner, Cornelius ; Wald, Lawrence L ; Setsompop, Kawin</i>	
“THERMAL SCISSOR” STABILIZING PIN REMOVAL TOOL FOR KNEE REVISION SURGERY: FOR USE IN STRYKER TRIATHLON TOTAL STABILIZING SYSTEM REVISIONS	166
<i>Espitia, Desiree ; Mitchell, Marc ; Echevarria, David ; George, Jaslyn ; Richards, Sean</i>	
THE EFFECTS OF MOLECULAR WEIGHT ON VIABILITY WITHIN PEGDA HYDROGEL MICROSPHERES	168
<i>Falkowski, Ron ; Medini, Michael ; Olabisi, Ronke</i>	
DEVELOPMENT OF 2-DOF ANKLE REHABILITATION SYSTEM	170
<i>Farjadian, Amir B. ; Nabian, Mohsen ; Holden, Maureen K. ; Mavroidis, Constantinos</i>	
CELL PROLIFERATION AND OSTEOGENIC DIFFERENTIATION OF EQUINE MESENCHYMAL STEM CELLS ON BIODEGRADABLE BIOMIMETIC TUBULAR BACTERIAL CELLULOSE COMPOSITES	172
<i>Favi, Pelagie ; Benson, Roberto ; Dhar, Madhu ; Neilsen, Nancy</i>	
A 5-MM DIAMETER, PIEZO-SCANNING FIBER DEVICE FOR HIGH SPEED ULTRAFAST LASER MICROSURGERY	174
<i>Ferhanoglu, Onur ; Yildirim, Murat ; Subramanian, Kaushik ; Ben-Yakar, Adela</i>	

PREDICTION OF POINT-OF-FAILURE IN A HIGH-ENERGY FEMORAL NECK FRACTURE MODEL WITH FINITE ELEMENT ANALYSIS: ARE MODELS SUPPORTED BY BIOMECHANICAL EVIDENCE?	176
<i>Feuer, Gavriel ; Pivec, Robert ; Hossain, Sajjad ; Paulino, Carl ; Saha, Subrata</i>	
DEVELOPMENT OF A CELL SELF-ASSEMBLED 3-DIMENSIONAL IN VITRO SKELETAL MUSCLE TISSUE MODEL	178
<i>Forte, Jason M. ; Fidanza, Alyssa M. ; Page, Raymond L.</i>	
ANALYSIS OF SUB-CORTICAL REGIONS IN COGNITIVE PROCESSING USING FUZZY C-MEANS CLUSTERING AND GEOMETRICAL MEASURE IN AUTISTIC MR IMAGES	180
<i>Fredo, A R Jac ; Kavitha, G ; Ramakrishnan, S</i>	
CONTROLLING CELL ADHESION ON THERMORESPONSIVE P(MEO2MA-CO-OEGMA) SUBSTRATES	182
<i>Fruneaux, Tyler ; Hill, Allyson ; Kaminski, Ashley ; Anderson, Lauren Sefcik</i>	
INSULATOR BASED DIELECTROPHORESIS TO PREDICT ELECTROCOMPETENCY DURING ELECTROPORATION	184
<i>Ge, Zhifei ; Buie, Cullen</i>	
SILVER NANOPARTICLE-EMBEDDED POLYMERSOME NANOCARRIERS FOR THE TREATMENT OF ANTIBIOTIC-RESISTANT INFECTIONS	186
<i>Geilich, Benjamin M. ; Singleton, Gloria L. ; van de Ven, Anne L. ; Sridhar, Srinivas ; Webster, Thomas J.</i>	
SPINAL PROGENITOR CELL DIFFERENTIATION IN COLLAGEN-BASED HYDROGELS: DIRECTING OLIGODENDROCYTE DIFFERENTIATION USING ECM SIGNALS	188
<i>Sydney, A. ; Sabin, Alexandra L. ; Schmidt, Christine E.</i>	
UTE ANGIOGRAPHY WITH FERUMOXYTOL	190
<i>Gharagouzloo, Codi ; McMahon, Patrick N. ; Sridhar, Srinivas</i>	
FIRST PASSAGE TIME STOCHASTICITY IN A GENE NETWORK WITH FEEDBACK REGULATION	192
<i>Ghusinga, Khem Raj ; Dennehy, John J. ; Singh, Abhyudai</i>	
MICRO/NANOROUGH TITANIUM-ALUMINIUM-VANADIUM ALLOY SURFACES TRIGGER ALTERNATE OSTEOBLAST INTEGRIN EXPRESSION PROFILE	194
<i>Gittens, R A ; Sandhage, K H ; Olivares-Navarrete, R ; Hyzy, S L ; Schwartz, Z ; Boyan, B D</i>	
STEP TRIGGERING METHOD IN MOTORIZED EXOSKELETONS	196
<i>Goffer, Amit</i>	
MODELLING NONLINEAR CHEMICAL OSCILLATORS WITH INHIBITORY COUPLING	198
<i>Gold, Jacob ; Wang, Adam ; Girabawe, Camille ; Harrington, Kyle ; Fraden, Seth</i>	
DIAMETER DEPENDENT DEGRADATION OF SINGLE WALLED CARBON NANOTUBES	200
<i>Gottipati, Abhishek ; Keith, James H. ; Nedumthakady, Nithin ; Begley, Thomas ; Tenenbaum, Scott A.</i>	
ENHANCING CELL RECRUITMENT ONTO CROSSLINKED FIBRIN MICROTHREADS WITH HEPATOCYTE GROWTH FACTOR	202
<i>Grasman, Jonathan M. ; Page, Raymond L. ; Dominko, Tanja ; Pins, George D.</i>	
COLLAGEN SELF-ASSEMBLY IN THE PRESENCE OF NANO-CARBONS: A STRUCTURE-PROPERTY RELATIONSHIP	204
<i>Green, Emily ; Zhang, Yiyang ; Minus, Marilyn</i>	
FGF2 AND OXYGEN: REGULATORS OF INTERGRIN ALPHA-11 AND EXTRACELLULAR MATRIX MOLECULES	206
<i>Grella, Alexandra ; Kole, Denis ; Dominko, Tanja</i>	
DETERMINATION OF THE SHEAR MODULI OF AGAROSE GEL USING NOVEL OPTICAL MEASUREMENTS	208
<i>Guertin, Ashley ; Lee, Christopher</i>	
STATE SPACE ANALYSIS OF HUMAN TIMING: TIMING ACCURACY LIMIT IS 9 MS	210
<i>Guo, Dena ; Huber, Meghan E. ; Sternad, Dagmar</i>	
DEVELOPING BIOMIMETIC COLLAGEN-BASED MATRIX USING CYCLODEXTRIN FOR CORNEAL REPAIR	212
<i>Guo, Qiongyu ; Shores, Lucas ; Schein, Oliver ; Trexler, Morgana M. ; Elisseeff, Jennifer H.</i>	
INTUITIVE LEG ASSIST DEVICE 2	214
<i>Hajjar, Nick ; Morgan, Matt ; Zaro, Brit ; Hall, Connie L. ; Saxena, Kunal ; Hernandez, Orlando</i>	
OXYGEN TENSION AND RAC1B LOCALIZATION	216
<i>Halpern, Samantha ; Nelson, Celeste</i>	
NUCLEAR LAMIN STIFFNESS IS A BARRIER TO 3D-MIGRATION, BUT SOFTNESS CAN LIMIT SURVIVAL	218
<i>Harada, Takamasa ; Swift, Joe ; Irianto, Jerome ; Shin, Jae-Won ; Spinler, Kyle R. ; Athirasala, Avathamsa ; Diegmiller, Rocky ; Dingal, P. ; Ivanovska, Irena L. ; Discher, Dennis E.</i>	

ERROR AMPLIFICATION IMPROVES PERFORMANCE BY REDUCING MOTOR NOISE	220
<i>Hasson, Christopher J. ; Zhang, Zhaoran ; Abe, Masaki ; Sternad, Dagmar</i>	
INFLUENCE OF ACTUATOR PROPERTIES ON LEARNING TO CONTROL A VIRTUAL LIMB	222
<i>Hasson, Christopher J.</i>	
NONLINEAR DYNAMIC MODEL OF BARORECEPTOR BLOOD PRESSURE REGULATION	224
<i>Hegyi, Gina ; Drzewiecki, Gary</i>	
REGENERATION COMPETENCE ACCOMPANIES INCREASED EXPRESSION OF ARGININE METHYLTRANSFERASE PRMT8 IN HUMAN ADULT FIBROBLASTS	226
<i>Hernandez, Sarah ; Dominko, Tanja</i>	
MGO NANOCOMPOSITES AS NEW ANTIBACTERIAL MATERIALS FOR ORTHOPEDIC TISSUE ENGINEERING APPLICATIONS	228
<i>Hickey, Daniel J. ; Ercan, Batur ; Chung, Stanley ; Webster, Thomas J. ; Sun, Linlin ; Geilich, Ben</i>	
IMPROVING PHOTODYNAMIC THERAPY EFFICIENCY BY SYNTHESIS OF FOLIC ACID AND PROTOPORPHYRIN IX CONJUGATED PERSISTENT LUMINESCENCE NANOPARTICLES AS A NEW DRUG CARRIER	230
<i>Homayoni, H. ; Chen, W.</i>	
ENGINEERING CARDIOSPHERES FROM HUMAN PLURIPOTENT STEM CELLS	232
<i>Hookway, Tracy A. ; Nguyen, Doan ; Xu, Chunhui ; Wagner, Mary B. ; McDevitt, Todd C.</i>	
VALIDITY AND RELIABILITY OF KINECT FOR MEASURING SHOULDER JOINT ANGLES	234
<i>Huber, Meghan E. ; Seitz, Ameer L. ; Leeser, Miriam ; Sternad, Dagmar</i>	
IMPLICIT GUIDANCE TO DYNAMIC STABILITY IN RHYTHMIC BALL BOUNCING	236
<i>Huber, Meghan E. ; Sternad, Dagmar</i>	
HIGH-RESOLUTION, 3-D IMAGING OF LUMPECTOMY TISSUE USING OPTICAL COHERENCE TOMOGRAPHY	238
<i>Hwuang, Eileen ; Higgins, Laura ; Pierce, Mark C. ; Droz, Roberto ; Kim, Leonard</i>	
EFFECTS OF NUMERICAL PARAMETERS USED IN BONE FRACTURE HEALING SIMULATIONS	240
<i>Irlandoust, Soroush ; Muftu, Sinan</i>	
ANTERIOR-POSTERIOR RESECTION OF SACRAL TUMOR WITH COMPUTER NAVIGATION SYSTEM	242
<i>Jahangiri, Anila F. ; Jahangiri, Faisal R.</i>	
STEREOSCOPIC VISION AND ITS ASYMMETRICAL UNDERPINNINGS: A STUDY IN VERGENCE MEASURES	244
<i>Jaswal, Raj S. ; Alvarez, Tara L.</i>	
FUNCTIONAL CONNECTIVITY OF VERGENCE NEURAL SUBSTRATES	246
<i>Jaswal, R. ; Gohel, Suril ; Biswal, Bharat B. ; Alvarez, Tara L.</i>	
CHARACTERISTICS OF SKIN-ELECTRODE IMPEDANCE FOR A NOVEL SCREW ELECTRODE	248
<i>Jia, Wenyan ; Wu, Jiamin ; Gao, Di ; Sun, Mingui ; ScLabassi, Robert J.</i>	
ROBOTIC SURGERY SIMULATOR SUPPORT, VISION SYSTEM AND TEST SUBJECT	250
<i>Johnston, M.L. ; Riofrio, J. ; Gettens, R.T.T.</i>	
MULTI-BRANCHED GOLD NANOPARTICLES FOR SURFACE ENHANCED RAMAN SCATTERING CHARACTERIZATION	252
<i>Johnston, Jencilin ; Taylor, Erik N. ; Gilbert, Richard J. ; Webster, Thomas J.</i>	
A COMPUTATIONAL TOOL FOR PRE-SURGICAL EVALUATION OF EPILEPSY PATIENTS	254
<i>Jordan, A ; Subramanian, S ; Hao, S</i>	
A NOVEL APPROACH TO DELIVERING AN SMP DEVICE USING A JOULE-HEATING CATHETER FOR THE TREATMENT OF FUSIFORM ANEURYSMS	256
<i>Kadkoy, Yazan ; Lucanie, Lauren ; Mathew, Jency ; Readdy, Emily ; Hall, Connie L.</i>	
SEPARATION OF THE PERIODONTAL LIGAMENT FOR ATRAUMATIC TOOTH EXTRACTION	258
<i>Kafel, N. ; Kolodziejski, J. ; Niemiera, M. ; Reed, M.</i>	
CHARACTERIZATION OF COMPRESSIBILITY IN ALGINATE MICROSPHERES	260
<i>Kameniku, Jurgen ; Bhatia, Sujata K.</i>	
CALIBRATION DEVICE FOR QUANTIFYING ERROR IN FORCE PLATES	262
<i>Kaplan, Jonathan ; Kelley, Mireille ; Williams, John ; Gielo-Perczak, Krystyna</i>	
ANALYSIS OF SURFACE ELECTROMYOGRAPHY SIGNALS USING ZAM BASED QUADRATIC TIME FREQUENCY DISTRIBUTION	264
<i>Karthick, P.A. ; Ramakrishnan, S</i>	
DEXTRAN-BASED HYDROGELS FOR IN-SITU DELIVERY OF GALLIUM-CONTAINING BIOACTIVE GLASSES	266
<i>Keenan, T.J. ; Wren, A.W. ; Hall, M.M.</i>	

AUTOMATED CELL COUNTING METHOD FOR MICROGROOVE BASED MICROFLUIDIC DEVICE	268
<i>Khabiry, Masoud ; Jalili, Nader ; Sridhar, Srinivas</i>	
THE EFFECT OF THREE-DIMENSIONAL MATRICES ON HLA EXPRESSION BY AMNIOTIC EPITHELIAL CELLS	270
<i>Khatami, Fatemeh ; Sattari, Mandana</i>	
STABILITY ANALYSIS OF TIBIAL BONE	272
<i>Kim, Dongeun ; Han, Suyeong ; Song, Hwankyuu ; Yoon, Jeong H Peter ; Kyung, Richard</i>	
ISOLATED ELECTROCAUTERY DEVICE ELIMINATES ELECTRICAL INTERFERENCE AND SURGICAL BURNS	274
<i>Kleinhans, E. ; Ruiz, P. ; Diffley, C. ; Sigler, T. ; Ritter, A. ; Atlas, G.</i>	
SIMULINK® BASED ROBOTIC HAND CONTROL USING EMOTIV™ EEG HEADSET	276
<i>Kline, Adrienne ; Desai, Jaydip</i>	
THE INFLUENCE OF HYDRATION AND DYNAMIC LOADING ON ACELLULAR AND MESENCHYMAL STEM CELL-SEEDED POLY(VINYL ALCOHOL) SCAFFOLDS	278
<i>Koch, Meredith E. ; Oldinski, Rachael A. ; Oldinski, Rachael A.</i>	
AMBULATORY EPILEPTIC MONITORING DEVICE	280
<i>Kolb, Rachel ; Pineda, Kevin ; Curran, Mark ; Skinner, Timothy ; Adegbege, A. ; BuSha, B.F.</i>	
TEMPORAL INFORMATION INFERENCE FROM STATIC HIGH-CONTENT FLUORESCENT MICROSCOPY	282
<i>Kolouri, Soheil ; Rohde, Gustavo K.</i>	
DYNAMIC ESTIMATION OF AN ACTIVE SURGICAL NEEDLE DEFLECTION FOR BRACHYTHERAPY PROCEDURES	284
<i>Konh, B. ; Datla, N.V. ; Hutapea, P.</i>	
HIGH-THROUGHPUT SCREENING FOR DIRECTED CHEMOTAXIS OF RETINAL PROGENITOR CELLS IN 3D HYDROGELS	286
<i>Koppes, Abigail N. ; Carrier, Rebecca L. ; Baranov, Petr Y. ; Young, Michael J. ; Oudin, Madeleine J. ; Gertler, Frank B. ; Miller, Miles A. ; Lauffenburger, Douglas A.</i>	
A STATISTICAL DEFORMATION MODEL BASED REGULARIZER FOR REGISTRATION OF HISTOLOGY AND MRI	288
<i>Koundinyan, Srivathsan ; Toth, Robert ; Madabhushi, Anant ; Maguire, Timothy</i>	
NOVEL BIOMIMETIC AGGREGAN FOR TREATMENT OF URINARY INCONTINENCE	290
<i>Kriete, Alicia ; Parellada, Jordan ; Prudnikova, Katsiaryna ; Marcolongo, Michele</i>	
EXPLORATORY ASPECTS OF VARIABILITY IN LEARNING A NOVEL SKILL	292
<i>Kuznetsov, Nikita ; Huber, Meghan E. ; Sternad, Dagmar</i>	
INVESTIGATING ELECTROTAXIS OF THE NON-TRANSFORMED MCF-10A MAMMARY EPITHELIAL CELL LINE	294
<i>Lalli, Mark L. ; Asthagiri, Anand R.</i>	
ALTERATIONS IN MEMBRANE POTENTIAL PROMOTE NEONATAL CARDIOMYOCYTE PROLIFERATION	296
<i>Lan, Jen-Yu ; Black, Lauren D.</i>	
PILOT CLINICAL STUDIES OF LONG DURATION, LOW INTENSITY THERAPEUTIC ULTRASOUND FOR OSTEOARTHRITIS	298
<i>Langer, Matthew D ; Levine, Vanessa ; Taggart, Rebecca ; Lewis, George K ; Hernandez, Lyndon ; Ortiz, Ralph</i>	
MODULATING ALIGNMENT AND CONTRACTILE PROTEIN EXPRESSION IN VASCULAR SMOOTH MUSCLE CELL SHEETS: USING MICROCONTACT PRINTING AND MECHANICAL CONDITIONING	300
<i>Lee, Elaine L. ; Bendre, Hersh H. ; Robinson, Matthew K. ; Wong, Joyce Y.</i>	
CONSTRUCTION OF 3D TISSUE WITH PERFUSED VESSELS AND CAPILLARIES THROUGH 3D BIO-PRINTING	302
<i>Lee, Vivian K. ; Dai, Guohao ; Vincent, Peter A. ; Yoo, Seung-Schik</i>	
BIO-INSPIRED CONTROL DESIGN FOR HIGH-SPEED TROT-RUNNING QUADRUPED ROBOTS	304
<i>Lee, Jongwoo ; Hyun, Dong Jin</i>	
REPETITIVE VERGENCE TRAINING IMPROVES PRECISION	306
<i>Lestrangle, Stephen ; Talasan, Henry ; Alvarez, Tara L.</i>	
MECHANICAL DURABILITY OF BIOACTIVE GLASSES AS A FUNCTION OF STRUCTURE, SOLUBILITY AND INCUBATION TIME	308
<i>Li, Y. ; Coughlan, A. ; Wren, A.W.</i>	
SIT/STAND WORKSTATION CONFIGURATION AFFECTS UPPER EXTREMITY POSTURE, MUSCLE LOAD AND VARIABILITY DURING COMPUTER MOUSE USE	310
<i>Barbir, Ana ; Dennerlein, Jack ; Lin, Michael Y ; Garza, Jennifer Bruno ; Karol, Sohit ; Robertson, Michelle</i>	

PREPARATION OF A NANOPATTERNED POLYMER REPLICA FOR REDUCING CATHETER INFECTION	312
<i>Liu, Luting ; Ercan, Batur ; Sun, Linlin ; Webster, Thomas J. ; Ni, Siyu</i>	
ANTIBACTERIAL PROPERTIES OF TiO₂ NANOTUBES INCORPORATED WITH ZNO	314
<i>Liu, Wenwen ; Chen, Su ; Zhang, Zhenting ; Webster, Thomas J.</i>	
BI MODAL APPROACH USING SPECTROSCOPY AND DIGITAL IMAGING TO ASSIST OTITIS MEDIA DIAGNOSIS	316
<i>Longo, Kaitlyn ; Peterson, Donald ; Valdez, Tulio A.</i>	
EFFECTIVENESS OF A SURFACE-BOUND ANTIMICROBIAL PEPTIDE AS A FUNCTION OF TETHER LENGTH	318
<i>Lozeau, Lindsay D. ; Alexander, Todd E. ; Camesano, Terri A.</i>	
USE OF DNA BASE PAIR COMPOSITION FOR THE SPECIFIC IDENTIFICATION OF MALARIA PARASITES (PLASMODIUM)	320
<i>Luther, Ed ; Shapiro, Howard M.</i>	
REALTIME PHYSIOLOGICAL PERFORMANCE MONITORING TO PREVENT FATIGUE IN SPECIAL FORCES SOLDIERS	322
<i>Ma, Xiao ; Rupp, Edward ; Ryan, Anne ; Semper, Cory ; Thompson, Alex ; Zhang, Longfei</i>	
CUEING KITCHEN: A SMART COOKING ASSISTANT	324
<i>Mahajan, Harshal P. ; Ding, Dan</i>	
MULTISCALE ANALYSIS OF CANCER CELL MECHANICS	327
<i>Mak, Michael ; Kamm, Roger D. ; Zaman, Muhammad H.</i>	
FREQUENCY DOMAIN SYNCHRONY BETWEEN SIGNALS FROM THE CONVENTIONAL DISC ELECTRODE AND THE OUTER RING OF THE TRIPOLAR CONCENTRIC RING ELECTRODE IN HUMAN ELECTROENCEPHALOGRAPH DATA	329
<i>Makeyev, Oleksandr ; Lennon, Thomas ; Boudria, Yacine ; Zhu, Zhenghan ; Besio, Walter G.</i>	
FLUORESCENCE QUANTIFICATION OF NANOPARTICLE DIFFUSION FROM SMART BRACHYTHERAPY SPACERS IN VIVO	331
<i>Markovic, Stacey ; Kumar, Rajiv ; Belz, Jodi ; Sridhar, Sri ; Niedre, Mark</i>	
EFFECT OF GDNF ON SCHWANN CELL DIFFERENTIATION AND INTERACTION WITH NEURONS IN VITRO	333
<i>Marquardt, Laura M. ; Sakiyama-Elbert, Shelly E.</i>	
THREE DIMENSIONAL SPHEROIDAL CELL BIOREACTORS FOR MULTIPLEXED CANCER DRUG TESTING	335
<i>Marshall, Gina M. ; English, Anthony E. ; Bose, Diptiman D. ; Sani, Shabnam N. ; Moy, Alan B.</i>	
GRADED MUSCLE CONTRACTIONS DETERMINED BY TEMPORAL RECRUITMENT	337
<i>McCarthy, Brooke ; Stephens, Kimberly ; King, Caitlyn ; Chabot, Eugene ; Sun, Ying</i>	
EVALUATION OF AN INTRODUCTORY RESEARCH PROGRAM FOR MINORITY STUDENTS IN AN INTERDISCIPLINARY TISSUE ENGINEERING LAB	339
<i>McCave, Erin J. ; Gilmore, Jordan A. ; Burg, Tim C. ; Burg, Karen J.L.</i>	
A MICROPROCESSOR-BASED WRIST PULSE SIMULATOR FOR PULSE DIAGNOSIS IN TRADITIONAL CHINESE MEDICINE	341
<i>McLellan, Steven ; Liese, Christina ; Andrews, Melissa ; Boudreaux, Mona ; Boudreaux, G. Faye ; Chabot, Eugene ; Sun, Ying</i>	
CREATING A SILICONE AIRWAY MODEL TO MIMIC AN OBSTRUCTED AIRWAY AND MEASURING THE FREQUENCY RESPONSE OF SOUND EMITTED	343
<i>McNaught, Andrew ; Walsh, Connor ; Douleh, George ; Sun, Ying ; Chabot, Eugene</i>	
TIME DEPENDENT ELECTRICAL SKIN MODEL: FOR THE TESTING OF ELECTROCUTANEOUS STIMULATING ELECTRODES	345
<i>Medeiros, Courtney ; DeSanto, Christopher Ross ; McDonough, Ryan ; Chabot, Eugene ; Sun, Ying</i>	
ENZYME-BASED NANOCOMPOSITES: USING NATURE TO WARD OFF EMERGING THREATS	347
<i>Mehta, Krunal K. ; Pangule, Ravindra C. ; Paskaleva, Elena E. ; Mundra, Ruchir V. ; Dordick, Jonathan S. ; Kane, Ravi S.</i>	
MODELING CARBON NANOMATERIAL CELL INTERNALIZATION FOR DRUG CARRIER APPLICATIONS	349
<i>Memic, Adnan ; Salah, Numan ; Ahmed, Farid</i>	
AN EX VIVO PLATFORM FOR QUANTITATIVELY ANALYZING PAIRWISE INTERACTIONS BETWEEN CANCER CELLS	351
<i>Milano, Daniel F. ; Asthagiri, Anand R.</i>	
POLY(VINYL ALCOHOL)-GELATIN INTERPENETRATING NETWORK HYDROGELS FOR TISSUE ENGINEERING APPLICATIONS	353
<i>Miller, Emily J. ; Oldinski, Rachael A.</i>	

USING MRI FROM 1000 SUBJECTS TO IDENTIFY ABNORMAL GREY MATTER IN INDIVIDUAL TUMOR SUBJECTS	355
<i>Misra, Atreya ; Yuan, Rui ; Gohel, Suril ; Biswal, Bharat</i>	
DIFFERENTIALLY CHARGED NANOMATERIALS CONTROL SELECTIN-MEDIATED ADHESION AND ISOLATION OF CANCER CELLS AND LEUKOCYTES UNDER FLOW	357
<i>Mitchell, Michael J. ; Castellanos, Carlos A. ; King, Michael R.</i>	
UNNATURAL KILLER CELLS: TRAIL-COATED LEUKOCYTES THAT KILL CANCER CELLS IN THE CIRCULATION	359
<i>Mitchell, Michael J. ; Wayne, Elizabeth C. ; Rana, Kuldeepsinh ; Schaffer, Chris B. ; King, Michael R.</i>	
APPLICATION OF CIRCULAR STATISTICS IN THE STUDY OF MUSCULAR ACTIVITY DURING SEMI-RECLINED CYCLING	361
<i>Momeni, Kamyar ; Faghri, Pouran D.</i>	
BACTERIAL BIOFILMS FOR SEQUESTRATION OF CU+2 FROM CMP WASTEWATER	363
<i>Mosier, Aaron P. ; Jin, Eileen ; Behnke, Jason ; Sidoli, James ; Cady, Nathaniel C.</i>	
A METHOD TO COMPARE PROCESSING SPEED AND OCULOMOTOR FUNCTION USING A MODIFIED SDMT	365
<i>Muhammad, Hassan ; Thibideaux, David ; Costa, Silvana L. ; Strober, Lauren B. ; Genova, Helen M. ; Chiaravalloti, Nancy D. ; Alvarez, Tara L.</i>	
A SELF-POWERED AND PORTABLE DEVICE TO MONITOR AND ASSESS TARGETED MUSCLE REHABILITATION	367
<i>Muhammad, Hassan ; Mustafa, Ali</i>	
A SELF-POWERED AND PORTABLE DEVICE TO MONITOR AND ASSESS TARGETED MUSCLE REHABILITATION	369
<i>Muhammad, Hassan ; Mustafa, Ali</i>	
APPLICATION OF STATISTICAL MACHINE LEARNING IN IDENTIFYING CANDIDATE BIOMARKERS OF RESISTANT TO ANTI-CANCER DRUGS IN OVARIAN CANCER	371
<i>Nabavi, Sheida ; Maitituoheti, Mayinuer ; Yamada, Michiyo ; Tonellato, Peter</i>	
EXTRINSIC CONTRIBUTIONS TO MOVEMENT VARIABILITY IN HUMAN OBJECT MANIPULATION	373
<i>Nasseroleslami, Bahman ; Sternad, Dagmar</i>	
A MICROPATTERNED MICROFLUIDIC DEVICE FOR ENGINEERING SOLUBLE AND TETHERED ENVIRONMENTAL CUES IN CELL CULTURE	375
<i>Natividad, R.J. ; Asthagiri, A.R.</i>	
INVESTIGATING MOTION ARTIFACT IN REFLECTIVE PULSE OXIMETRY DURING RANDOM MOTION	377
<i>Nawn, Corinne ; Warren, Kristen</i>	
SEE-THROUGH CARTRIDGE FOR REAL TIME MONITORING OF TUMOR CELLS CAPTURING ON MICROFILTERS	379
<i>Nezhad, Amir Sanati ; Tuner, Kate ; Hernandez-Castro, J.Alejandro ; Juncker, David</i>	
EXTRACELLULAR MATRIX STIFFNESS PROTECTS CARCINOMA CELLS FROM SORAFENIB VIA JNK SIGNALING	381
<i>Nguyen, Thuy V. ; Sleiman, Marianne ; Moriarty, Timothy ; Herrick, William G. ; Peyton, Shelly R.</i>	
SIGNIFICANCE OF THE INTERLAMELLAR INTERFACES IN THE MICROMECHANICS OF HAVERSIAN BONE	383
<i>Nobakhti, Sabah ; Limbert, Georges ; Thurner, Philipp J.</i>	
3D IMAGING OF BREAST CANCER USING A HYBRID NEARFIELD RADAR IMAGING/DIGITAL BREAST TOMOSYNTHESIS RECONSTRUCTION TECHNIQUE	385
<i>Obermeier, Richard ; Tivnan, Matthew ; Rappaport, Carey M. ; Lorenzo, Jose A. Martinez</i>	
AN INEXPENSIVE UNIVERSAL FLUID CELL FOR ATOMIC FORCE MICROSCOPY	387
<i>Oliva, Thomas ; Tate, Veronica ; Wen, Qi ; Wang, Kathleen ; Billiar, Kristen</i>	
INVESTIGATING THE EFFECTS OF KNEE JOINT MOTION SCHEMES ON KNEE JOINT INJURY: A FINITE ELEMENT ANALYSIS	389
<i>Orsi, Alexander D. ; Chakravarthy, Srinath ; Vaziri, Ashkan ; Nayeb-Hashemi, Hamid ; Goebel, Ruben ; Canavan, Paul K. ; Pena, Estefania</i>	
DESIGN CONSIDERATION FOR DESCANNED LAMINAR OPTICAL TOMOGRAPHY WITH EMCCD CAMERA	391
<i>Ozturk, Mehmet S. ; Intes, Xavier ; Yang, Fugang</i>	
COORDINATE SENSITIVITY OF VARIABILITY ANALYSIS: A REVISED METHOD TO QUANTIFY COVARIATION	393
<i>Park, Se-Woong ; Sternad, Dagmar ; Hogan, Neville</i>	

AN INTRAVENTRICULAR SOFT ROBOTIC PULSATILE ASSIST DEVICE FOR RIGHT VENTRICULAR HEART FAILURE.....	395
<i>Park, Evelyn ; Mehandru, Nikhil ; Beltran, Tonatiuh Lievano ; Kraus, Erik ; Holland, Donal ; Polygerinos, Panagiotis ; Vasilyev, Nikolay V. ; Walsh, Conor J.</i>	
ULTRASOUND-ASSISTED DRUG DELIVERY WITH TARGETED-MICROBUBBLES IN BLOOD VESSELS ON A CHIP.....	397
<i>Park, Yoonjee C. ; Zhang, Chentian ; Mohamedi, Graciela ; Kim, Sudong ; Jeon, Nooli ; Cleveland, Robin O. ; Nagy, Jon O. ; Wong, Joyce Y.</i>	
A TOUCHSCREEN GAME TO INDUCE MENTAL WORKLOAD ON HUMAN SUBJECTS.....	399
<i>Parsinejad, Payam ; Sipahi, Rifat</i>	
MECHANICAL ENHANCEMENT OF A TISSUE-ENGINEERED SCAFFOLD FOR BONE REGENERATION.....	401
<i>Patel, Pushpendra ; Taylor, Brittany ; Freeman, Joseph</i>	
CAD-SYSTEM DENTAL CERAMICS SINTERING USING MICROWAVES.....	403
<i>Pendola, Martin ; Saha, Subrata</i>	
EVALUATION OF CONTRACTION OF PACKABLE DENTAL COMPOSITES USING PHOTOELASTICITY.....	405
<i>Pendola, Martin ; Feuer, Gavriel ; Maloof, Nicholas ; Saha, Subrata</i>	
THE EFFECTS OF CELL DENSITY ON VIABILITY WITHIN PEGDA HYDROGEL MICROSPHERES.....	407
<i>Perera, Davina ; Seethamraju, Deepika ; Olabisi, Ronke</i>	
HYPERSTRAL OPTICAL TOMOGRAPHY BASED ON DOUBLE LIGHT MODULATOR CONFIGURATION.....	409
<i>Pian, Qi ; Yao, Ruoyang ; Zhao, Lingling ; Intes, Xavier</i>	
ANALYSIS OF SUB-ANATOMIC VOLUME CHANGES IN ALZHEIMER BRAIN USING DIFFUSION TENSOR IMAGING.....	411
<i>Piyush, Ranjan ; Ramakrishnan, S</i>	
CHARACTERIZATION AND SOLUBILITY OF Y2O3 AND CEO2 CONTAINING BIOACTIVE GLASSES TO AID SPINAL CORD RECOVERY.....	413
<i>Placek, L. ; Wren, A.W.</i>	
QUICKBEADS™: MAGNETIC ISOLATION OF RARE STEM CELLS VIA A CAPTURE AND RELEASE PLATFORM.....	415
<i>Plouffe, Brian D. ; Kevlahan, Sean H.</i>	
QUANTITATIVE OPTICAL BIOMARKERS FOR NON-INVASIVE DETECTION OF CANCEROUS TRANSFORMATION IN LIVE, 3D SQUAMOUS EPITHELIA.....	417
<i>Pouli, Dimitra ; Varone, Antonio ; Xylas, Joanna ; Quinn, Kyle P. ; Hunter, Martin ; Georgakoudi, Irene ; McLaughlin-Drubin, Margaret E. ; Munger, Karl</i>	
MULTISCALE MODEL PREDICTIONS OF X-RAY DIFFRACTION PATTERNS FROM NONUNIFORMLY STRETCHED ACTIN FILAMENTS.....	419
<i>Prodanovic, Momcilo ; Irving, Thomas ; Stojanovic, Boban ; Mijailovich, Srbojub M.</i>	
A PYROELECTRIC SENSOR FOR SYSTEM-ON-A-CHIP.....	421
<i>Pullano, S.A. ; Fiorillo, A.S. ; Islam, S.K.</i>	
DEVELOPMENT OF AN ASSISTIVE DEVICE CONTROLLED BY SURFACE ELECTROMYOGRAM SIGNALS.....	423
<i>Puzo, Z.C. ; Clark, T.A. ; Ulrey, B.L.</i>	
NEUTROPHIL DYNAMICS DURING MIGRATION IN MICROFLUIDIC CONCENTRATION GRADIENTS.....	425
<i>Qasaimeh, Mohammad A. ; Astolfi, Melina ; Pyzik, Michal ; Vidal, Silvia ; Juncker, David</i>	
PRIMITIVE BASED BIOMECHANICAL SIMULATIONS PREDICT FEEDBACK GATING.....	427
<i>Ramakrishnan, Arun ; Giszter, Simon F.</i>	
TSP-2 GENE SILENCING IN HUMAN AORTIC ENDOTHELIAL CELLS VIA SIRNA DELIVERED FROM AN ELECTROSPUN POLYESTER GRAFT MATERIAL.....	429
<i>Raof, Nurazhani A. ; Pratt, Wande B. ; Pradhan-Nabzdyk, Leena ; LoGerfo, Frank W. ; Pathan, Saif G. ; Nelson, David W. ; Phaneuf, Matthew D.</i>	
CULTURE MEDIUM EFFECTS ON VASCULAR SMOOTH MUSCLE CELL CONTRACTILE PROTEIN EXPRESSION AND MORPHOLOGY IN 2D V. 3D.....	431
<i>Reidinger, A. Zoe ; Rolle, Marsha W.</i>	
MULTILAYER PHANTOM FOR ELECTRICAL IMPEDANCE TESTING OF A FETAL HEARTBEAT.....	433
<i>Rezhdo, A. ; Agrawal, S. ; Wu, X.</i>	
EVALUATION OF ANISOTROPIC SILK SPONGES CONTAINING CARDIAC ECM FOR CARDIAC TISSUE ENGINEERING.....	435
<i>Rinaldi, Anthony M. ; Black, Lauren D.</i>	

CONTROLLED RELEASE OF PROTEINS WITH GEL MICROPARTICLES	437
<i>Rios, Jose L. ; Lu, Gongcheng ; Seo, Na Eun ; Lambert, Tamara ; Putnam, David</i>	
AN EFFICIENT METHOD FOR TRANSGENE EXPRESSION IN HAIRY ROOT CULTURES OF CATHARANTHUS ROSEUS	439
<i>Rizvi, Noreen F. ; Weaver, Jessica ; Cram, Erin J. ; Lee-Parsons, Carolyn W.T.</i>	
A MULTIPLEXED OPTICAL MICRO-IMPEDANCE BIOSENSOR ARRAY FOR QUANTITATIVE CANCER DRUG ASSAYS	441
<i>Rosenberger, Erin E. ; English, Anthony E. ; Bose, Diptiman D. ; Sani, Shabnam N. ; Moy, Alan B.</i>	
HISTONE-MIMETIC POLYPLEXES FOR TARGETED INTRACELLULAR DELIVERY DURING GENE TRANSFER	443
<i>Ross, Nikki ; Sullivan, Millicent O.</i>	
DUAL ACTUATED GAIT REHABILITATION TREADMILL IMPLEMENTING VIRTUAL REALITY AND VISUAL POSTURAL FEEDBACK	445
<i>Rudinskiy, Mikhail ; Bula, Michael ; Stahl, Tyler ; Davies, Nicole ; Fitzgerald, Michael ; D'Andrea, Susan ; Gielo-Perczak, Krystyna</i>	
MECHANISMS OF FLOW-DEPENDENT ENDOTHELIAL COX-2 AND PGI2 EXPRESSION	447
<i>Russell-Puleri, Sparkle ; Ebong, Eno E. ; Tarbell, John M.</i>	
IMPROVING ALARM MANAGEMENT EFFICACY THROUGH PREDICTIVE MODELING AND TRENDING	449
<i>Ryan, Edward J.</i>	
THE NEED OF ETHICS TRAINING FOR BIOMEDICAL ENGINEERING STUDENTS	451
<i>Saha, Subrata ; Saha, Pamela ; Krishnan, Shankar M.</i>	
COMBINED COMPUTATIONAL FLUID DYNAMIC AND METABOLIC MODEL OF LIVER DEFATTING UNDER FLOW	453
<i>Saleem, Mubasher ; Maguire, Timothy J.</i>	
MULTIMODAL MONITORING FOR NEUROLOGICAL DISORDERS	455
<i>Sanders, Teresa H. ; Clements, Mark A.</i>	
A METABOLIC FLUX ANALYSIS TO QUANTIFY THE HEPATIC METABOLISM DURING DEFATTING	457
<i>Santos, Lucas ; Yarmush, Gabriel ; Maguire, Timothy</i>	
A LOW COST ENVIRONMENTAL CHAMBER FOR MULTIPLEXED CANCER BIOSENSOR ARRAYS	459
<i>Schaeffer, Michael C. ; English, Anthony E. ; Bose, Diptiman D. ; Sani, Shabnam N. ; Moy, Alan B.</i>	
AQUATIC DESIGN FOR INDIVIDUALS WITH DISABILITIES: UPPER LIMB PROSTHESIS	461
<i>Schreiber, N.S. ; Gettens, R.T.T.</i>	
PDGF-STIMULATED SMOOTH MUSCLE CELL BEHAVIOR INHIBITED BY DECORIN MIMIC	463
<i>Scott, Rebecca A. ; Panitch, Alyssa</i>	
MALODOR MANAGEMENT IN HIGH EXUDING CHRONIC WOUNDS	465
<i>Sedlak, Jason ; Chheda, Sonam ; Green, Charles ; Okoh, Ememabasi ; Zheng, Zhelu</i>	
EFFECT OF LOADING FREQUENCY ON TRANS-ENDPLATE NUTRITION ACROSS THE INTERVERTEBRAL DISC: A FORCE-CONTROLLED UNCONFINED COMPRESSION EXPERIMENT	468
<i>Shah, Mitul A ; Ledet, Eric ; Hahn, Juergen</i>	
INSTRUMENTATION FOR CELL CAPACITANCE MEASUREMENTS: SWITCHING SINUSOIDAL EXCITATIONS FOR STUDYING CELL MEMBRANE TRANSPORT	470
<i>Shannon, Julia ; Cullen, Joseph ; Patel, Prashil ; Chabot, Eugene ; Sun, Ying</i>	
INTEGRATED HEADWALL SYSTEMS — HYBRID HEADWALL DESIGN	472
<i>Sharma, Ruchika ; Marti, Kevin ; Monegro, Jesus ; Liu, Yue</i>	
TRIPOLAR CONCENTRIC RING ELECTRODE ELECTROENCEPHALOGRAPHY USING SIGNA GEL FOR IMPEDANCE MATCHING	474
<i>Shen, Ivy ; Walkosz, Maciej ; Besio, Walter</i>	
CONTROLLING PERMEABILITIES OF FERROFLUIDS WITH VARIOUS COATINGS ACROSS THE BLOOD-BRAIN BARRIER	476
<i>Shi, Di ; Sun, Linlin ; Mi, Gujie ; Bhattacharya, Soumya ; Nayar, Suprabha ; Webster, Thomas J</i>	
MYELOID LEUKEMIA SUBTYPE-DEPENDENT SENSITIVITY TO MATRIX MECHANICS	478
<i>Shin, J.-W. ; Mooney, D.J.</i>	
HUMAN FOREARM MYOELECTRIC SIGNALS USED FOR ROBOTIC HAND CONTROL	479
<i>Sikula, Jessica ; Roell, Jordan ; Desai, Jaydip</i>	
NEAR INFRARED FLUOROPHORE SELECTION FOR LIFETIME-BASED FRET IMAGING	481
<i>Sinsuebphon, Nattawut ; Zhao, Lingling ; Intes, Xavier ; Bevington, Travis ; Ken, Abe ; Barroso, Margarida</i>	

UNSUPERVISED SEIZURE DETECTION USING MODULATION SPECTRA MEASURES: A PRELIMINARY STUDY	483
<i>Smart, Otis</i>	
OPTIMIZATION OF A BIOMIMETIC MODEL FOR TOOTH REGENERATION	485
<i>Smith, Elizabeth E ; Yelick, Pamela C ; Khademhosseini, Ali</i>	
TEMPERATURE EFFECTS ON HIGH-INTENSITY, ULTRASHORT ELECTRIC PULSE INDUCED CELL DEATH	487
<i>Song, Jiahui ; Joshi, Ravindra P.</i>	
INTEGRATION OF A TEMPERATURE SENSOR FOR IN SITU MONITORING OF AN ACOUSTOPHORETIC SEPARATION SYSTEM	489
<i>Sporbert, B.K. ; Rust, M.J. ; Lipkens, B. ; Kennedy, D.R.</i>	
TELEMANIPULATION OF WHEELCHAIR MOUNTED ROBOTIC ARM VIA FLEXEFFECT FOR PERSONS WITH MUSCULAR DYSTROPHY	491
<i>Stichter, RaeAnn ; Guidry, Megan ; Andrus, Catherine ; Ransinangue, Bryan</i>	
REDUCING CANCER CELL INTERACTIONS WITH SELENIUM NANOCLUSTER-COATED PLLA	493
<i>Stolzoff, Michelle ; Webster, Thomas J.</i>	
DESIGN OF A TRANSLATIONAL REPRESSION BASED RNA SWITCH IN MAMMALIAN CELLS	495
<i>Sudrik, Chaitanya ; Arha, Manish ; Cao, Jicong ; Kane, Ravi S. ; Schaffer, David V.</i>	
BONE MORPHOGENETIC FACTOR PEPTIDE FUNCTIONALIZED ROSETTE NANOTUBES FOR ORTHOPEDIC APPLICATIONS	497
<i>Sun, Linlin ; Webster, Thomas J. ; Mi, Gujie ; Alsbaiee, Alaaeddin ; Hemraz, Usha D. ; Cho, Jae-Young ; Beingessner, Rachel L. ; Fenniri, Hicham</i>	
TUMOR-PENETRATING ACETALATED DEXTRAN NANOPARTICLES CAPABLE OF TANDEM DELIVERY OF AGENTS FOR THE TREATMENT OF LUNG CANCER	499
<i>Sun, Qihua ; Meenach, Samantha A.</i>	
IR VISION SYSTEM FOR THE ESTIMATION OF GAIT PHASE OF THE MIT-SKYWALKER	501
<i>Susko, Tyler ; Krebs, H.I.</i>	
DEVELOPMENT OF A CROSS FLOW FILTRATION DEVICE FOR HUMAN BLOOD CELL FRACTIONATION	503
<i>Swargaloganathan, Divyagash</i>	
THE EFFECT OF VISION TRAINING ON BINOCULARLY NORMAL SUBJECTS	506
<i>Talasan, Henry ; LeStrange, Steven ; Alvarez, Tara L.</i>	
EFFECTS OF APPLIED PRESSURE ON BACTERIAL TRANSPORT THROUGH CONFINED SPACES	508
<i>Tandogan, N. ; Zhu, Y.A. ; Goluch, E.D.</i>	
AN INNER-EAR DRUG DELIVERY PLATFORM WITH FULLY INTEGRATED CONTROL, ACTUATION, AND FLUIDICS HARDWARE	510
<i>Tandon, Vishal ; Kang, Woo Seok ; McKenna, Michael J. ; Kujawa, Sharon G. ; Sewell, William F. ; Kim, Ernest ; Spencer, Abigail J. ; Pararas, Erin E.L. ; Mescher, Mark J. ; Fiering, Jason ; Borenstein, Jeffrey T.</i>	
GENERALIZED Q-SPACE IMAGING REVEALS COMPLEX MUSCLE ARCHITECTURE IN VIVO	512
<i>Taylor, Erik N. ; Gilbert, Richard J.</i>	
INSTRUMENTATION TO STIMULATE GAP SACCADES, PRO-SACCADES, AND OVERLAP SACCADES	514
<i>Thibodeaux, David ; Muhammad, Hassan ; Costa, Silvana L. ; Alvarez, Tara L.</i>	
FDFD MICROWAVE MODELING OF REALISTIC, INHOMOGENEOUS BREAST TISSUE BASED ON DIGITAL BREAST TOMOSYNTHESIS PRIORS FOR CANCER DETECTION	516
<i>Tivnan, Matthew ; Rappaport, Carey ; Martinez-Lorenzo, Jose Angel ; Morgenthaler, Ann</i>	
UPCONVERSION NANOPARTICLES FOR PHOTODYNAMIC THERAPY	518
<i>Tokatli-Apollon, Amira ; Lee, Hyungseok ; El-rifai, Mahmoud ; Punjabi, Amol ; Wu, Xiang ; Han, Gang</i>	
THE MODIFICATION OF COLLAGEN SCAFFOLDS FOR APPLICATION IN REGENERATIVE MEDICINE	520
<i>Urello, Morgan A. ; Sullivan, Millcent ; Kiick, Kristi</i>	
LINE-SCANNING CONFOCAL MICROSCOPE UTILIZING HIGH BRIGHTNESS LED	522
<i>Vakili, Ali ; Xiong, Daxi ; Rajadhyaksha, Milind ; DiMarzio, Charles A.</i>	
POLYMERSOMES FOR IMAGE-GUIDED THERAPY	524
<i>van de Ven, Anne L. ; Geilich, Benjamin ; Gharagouzloo, Codi ; Barlow, Jacob ; Webster, Thomas ; Sridhar, Srinivas</i>	

A YEAST-BASED APPROACH TO THE DEVELOPMENT OF ANTIBODIES TARGETING CANCER-ASSOCIATED FIBROBLASTS	526
<i>Van Deventer, James A. ; Dane Wittrup, Karl ; Rajan, Sarav ; Sidhu, Sachdev S.</i>	
ANALYSIS OF SURFACE EMG SIGNALS IN BICEPS CURLS USING MAXIMUM SINGULAR VALUE ESTIMATION	528
<i>Venugopal, G ; Ramakrishnan, S</i>	
MICROPATTERNED POLYACRYLAMIDE GEL FOR INVESTIGATING THE EFFECT OF COMPLIANT, FIBER-LIKE TOPOLOGY ON CELL BEHAVIORS	530
<i>Viswanathan, Kalpana ; Asthagiri, Anand R.</i>	
LAB-ON-A-DISK IMMUNOASSAY FOR OCULAR DIAGNOSTICS.....	532
<i>Walsh, David I. ; Murthy, Shashi K. ; Hahn, Paul S. ; Jaffe, Glenn J. ; Sommer, Gregory J. ; Schaff, Ulrich Y.</i>	
ANALYSIS OF CONTACTS CONFIGURATIONS OF HEMT WITH ID-VDS CURVE MEASUREMENTS.....	534
<i>Wang, S.H. ; Tsai, C.C. ; Chang, C.W. ; Wang, H.Y. ; Sun, Y. ; Lin, H.K. ; Tu, L.W.</i>	
CONTINUOUS PARTICLE SORTING USING THREE DIMENSIONAL INSULATOR BASED DIELECTROPHORESIS	536
<i>Wang, Qianru ; Buie, Cullen R.</i>	
DRY POWDERS BASED ON MUCUS-PENETRATING NANOPARTICLES ENTRAPPED MICROPARTICLES FOR PULMONARY DELIVERY OF TOBRAMYCIN.....	538
<i>Wang, Zimeng ; Meenach, Samantha A.</i>	
ALTERED UNFOLDING AND STIFFENING OF FIBRONECTIN FOR TUMOR PROGRESSION.....	540
<i>Wang, Karin ; Eguiluz, Roberto C.Andresen ; Wu, Fei ; Seo, Bo Ri ; Brown, Cory N. ; Fischbach, Claudia ; Gourdon, Delphine</i>	
INHIBITION OF VARIOUS BACTERIAL GROWTHS ON PAPER TOWELS THROUGH THE USE OF SELENIUM NANOPARTICLES	542
<i>Wang, Qi ; Webster, Thomas J.</i>	
AN APPLICATION OF THE P300 EVENT-RELATED POTENTIAL AS A BIOMETRIC.....	544
<i>Wang, Sicheng ; Yu, Yih-Choung ; Gabel, Lisa</i>	
COMBINATORIAL CATIONIC LIPID-LIKE NANOPARTICLES FOR EFFICIENT INTRACELLULAR CYTOTOXIC PROTEIN DELIVERY	546
<i>Wang, Ming ; Xu, Qiaobing</i>	
CELLULAR ADHESION AND PROTEIN ADSORPTION TO P(MEO2MA-CO-OEGMA) POLYMER SUBSTRATES	547
<i>Warrener, Matthew ; Anderson, Christopher R.</i>	
IN PLANTA PROMOTER ANALYSIS USING THE FAST METHOD	549
<i>Weaver, Jessica ; Lee-Parsons, Carolyn ; Cram, Erin</i>	
MONITORING PSEUDOMONAS AERUGINOSA IN CULTURE PLATES USING EMBEDDED ELECTROCHEMICAL SENSORS	551
<i>Webster, T.A. ; Sismaet, H.J. ; Hunt, D.R. ; Goluch, E.D.</i>	
MECHANICAL SHEARING TAXUS PLANT SUSPENSION CULTURES REDUCES AGGREGATION WITHOUT AFFECTING CELL HEALTH.....	553
<i>Wilson, Sarah A. ; Vilkhovoy, Michael V. ; Bevacqua, Steven P. ; Roberts, Susan C.</i>	
CANINE STIFLE STABILIZATION SYSTEM: FOR A CIRCULAR TIBIAL TUBEROSITY ADVANCEMENT (CTTA) PROCEDURE.....	555
<i>Wright, Katie ; Newell, Katherine ; Durand, Olivia</i>	
REGIONAL VARIATIONS IN THE SHEAR STRENGTH OF HUMAN LUMBAR VERTEBRAL ENDPLATE AND TRABECULAR BONE AND ITS RELATIONSHIP WITH DENSITY: A PRELIMINARY STUDY.....	557
<i>Xavier, F. ; Hossain, S. ; Rousseau, R. ; Hussain, A. ; Chatterjee, D. ; Feuer, G. ; Hayes, W. ; Saha, S.</i>	
INFLUENCES OF THE VERTEBRAL ENDPLATE MICROVASCULATURE ON THE DEVELOPMENT OF DEGENERATIVE DISC DISEASES: A PRELIMINARY STUDY.....	559
<i>Xavier, F. ; Hossain, S. ; Rousseau, R. ; Futerman, E. ; Hussain, A. ; Chatterjee, D. ; Feuer, G. ; Hayes, W. ; Saha, S.</i>	
BIOMIMETIC FABRICATION AND FREEZE-CASTING OF COLLAGEN-APATITE HYDROGELS FOR BONE TISSUE ENGINEERING.....	561
<i>Xia, Zengmin ; Wei, Mei</i>	
IN MOTOR LEARNING, VARIABLE PRACTICE IMPROVES TRANSFER, BUT ONLY WHEN THE VARIATIONS ELICIT SYNERGIES.....	563
<i>Yadav, Vivek ; Sainburg, Robert L</i>	
ENGINEERED PORE-FORMING PROTEINS FOR THE INTRACELLULAR DELIVERY OF MACROMOLECULAR THERAPEUTICS	565
<i>Yang, Nicole ; Wittrup, Dane</i>	

SHORT-TERM MODIFICATION OF VERGENCE RAMP EYE MOVEMENTS IN THE CONVERGENT DIRECTION	567
<i>Yaramothu, Chang ; Alvarez, Tara L.</i>	
DEFATTING HEPTOCYTES UNDER FLOW	569
<i>Yarmush, Joshua ; Yarmush, Gabriel ; Nativ, Nir ; Berthiaume, Francois</i>	
PROCESSING AND MECHANICAL TESTING OF STRONTIUM-SUBSTITUTED HYDROXYAPATITE/GLASS COMPOSITES	571
<i>Yatongchai, Chokchai ; Towler, Mark R. ; Wren, Anthony W.</i>	
PREDICTABILITY IN HUMAN MANIPULATION OF NONLINEAR DYNAMIC OBJECTS	573
<i>Ye, Fei ; Nasserolelami, Bahman ; Sternad, Dagmar</i>	
MAPPING IMMUNE CELLS INFILTRATION USING RESTRICTED DIFFUSION MRI	575
<i>Yeh, Fang-Cheng ; Ho, Chien</i>	
MAXIMUM IMAGING DEPTH IMPROVEMENT WITH THIRD-HARMONIC GENERATION MICROSCOPY IN TURBID TISSUES	577
<i>Yildirim, Murat ; Ferhanglu, Onur ; Ben-Yakar, Adela ; Durr, Nicholas</i>	
APTAMER BASED E-COLI DETECTION IN WASTE WATERS BY PORTABLE OPTICAL BIOSENSOR SYSTEM	579
<i>Yildirim, Nimet ; Long, Feng ; Gu, April Z.</i>	
BIOMECHANICAL ANALYSIS OF AORTIC VALVE	582
<i>Yoon, Jeong H Peter ; Yoon, Hyungjun ; Shin, David ; Kyung, Richard</i>	
EVALUATION OF BIOMOLECULAR METRICS IN MICROPHYSIOLOGICAL SYSTEMS: TECHNICAL CHALLENGES ASSOCIATED WITH MULTIPLEX ARRAYS	584
<i>Young, C.L. ; Griffith, L.G. ; Lauffenburger, D.A.</i>	
STATISTICAL FEATURES OF EEG RESPONSES TO COLOR STIMULI	587
<i>Zakzewski, Daniel ; Jouny, Ismail ; Yu, Yih Choung</i>	
FLEXIBLE SEGMENTED HUMERAL ROD	589
<i>Zayak, J. ; Thomas, S. ; Bianchi, J. ; Lafrogola, V.</i>	
AVULSION FRACTURE FIXATION OF THE GLENOHUMERAL JOINT: REGARDING THE SUPRASPINATUS TENDON AND HUMERAL HEAD	591
<i>Zegel, C. ; Iosue, E. ; Lewis, E. ; Mangiafico, J. ; Wos, J.</i>	
A NOVEL BINOCULAR VISION SYSTEM FOR WEARABLE DEVICES	593
<i>Zhai, Haitian ; Li, Hui ; Bai, Yicheng ; Jia, Wenyan ; Sun, Mingui</i>	
MOLECULAR RECOGNITION USING CORONA PHASE COMPLEXES MADE OF SYNTHETIC POLYMERS ADSORBED ON CARBON NANOTUBES	595
<i>Zhang, Jingqing ; Landry, Markita P. ; Barone, Paul W. ; Kim, Jong-Ho ; Lin, Shangchao ; Ulissi, Zachary W. ; Lin, Dahua ; Mu, Bin ; Boghossian, Ardemis A. ; Hilmer, Andrew J. ; Rwei, Alina ; Kruss, Allison C.Hinckley Sebastian ; Shandell, Mia A. ; Nair, Nitish ; Blake, Steven ; Sen, Fatih ; Sen, Selda ; Cray, Robert G. ; Li, Deyu ; Yum, Kyungsuk ; Ahn, Jin-Ho ; Jin, Hong ; Heller, Daniel A. ; Essigmann, John M. ; Blankschtein, Daniel ; Strano, Michael S</i>	
FABRICATION OF CELL PATCHES USING SCAFFOLDS WITH A HEXAGONAL ARRAY OF INTERCONNECTED PORES (SHAIPS)	597
<i>Zhang, Yu Shrike ; Xia, Younan</i>	
FAST SIMULATION OF X-RAY DIFFRACTION PATTERNS FROM CELLULOSE FIBRILS USING GPUS	599
<i>Zhang, Yan ; Yu, Leiming ; Kaeli, David ; Makowski, Lee</i>	
HEMATOCRIT MEASUREMENT TECHNOLOGY FOR USE IN LOW-RESOURCE ENVIRONMENTS UTILIZING A MICROFLUIDIC DISK WITH OPTICAL READER	601
<i>Zieminski, C. ; Meschutt, A. ; Rust, M.J. ; Browne, A.W.</i>	
Author Index	