

2005 Summer Bioengineering Conference Student Paper Awards

B.S. Level Competition

Category	Place	Award Winner	Title	Institution
Cell & Tissue, Biofluids, and Heat Transfer	1	Vishal Patel	Wavelet-Based Characterization of Small-Scale Turbulent Structures in a Mechanical Heart Valve Flow	Georgia Inst of Technology
	2	Andrea Les	Comparison of Hemodynamic Parameters across species in Normal and Aneurysmal Abdominal Aortas using Magnetic Resonance Imaging and Computational Fluid Dynamics	Stanford U
	3T	Hiroki Kamada	Computer Simulation of Formation of Primary Thrombus due to Platelet Aggregation using Particle Method	Tohoku U
	3T	Alex Pang	Computer Simulation of Venous Occlusion Induced by Pacing Leads	Stanford U
	HM	Patrick Harrington	Sensitivity Analysis of Arrhenius Parameters for Denaturation of Collagen	Michigan State U
Solids, Design, & Rehabilitation	1	Mindy Ezra	Three-Dimensional Reconstruction of Trabecular Bone Tissue	Tulane U
	2	Nicholas Stepenosky	Comparison of Pz, Fz, and Cz Event Related Potentials for the Early Diagnosis of Alzheimer's Disease	Rowan U
	3T	Mariana Kersh	How Does Normal Flexion Patellofemoral Contact Area Change Before and After Deep Knee Flexion?	U of Wisconsin - Madison
	HM	Meghan McGee	Cross-Sectional and Whole Bone Structural Properties of Bear Femurs are Not Compromised by Annual Periods of Disuse	U of Pittsburgh
	HM	Robert Held	Annular Phased-Array High Intensity Focused Ultrasound Device for Image-Guided Therapy	U of Washington

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M.S. Level Competition

Category	Place	Award Winner	Title	Institution
Cell & Tissue	1T	Kristy Salisbury	Mechanobiological Regulation of Molecular Expression and Tissue Differentiation During Bone Healing	Boston U
	1T	Taras Juzkiw	Direct Measurements of Human Trabecular Meshwork Cell Stiffness	U of Toronto
	3	Melissa Deitzer	Effects of Fibrinolytic Inhibitors on the Chondrogenesis of Bone Marrow Mesenchymal Stem Cells in Fibrin Gels	U of Miami
	HM	Karin Wartella	Bioreactor for Application of Biaxial Mechanical Stimulation to Tissue Engineering Constructs	Virginia Commonwealth U
	HM	Kevin Toosi	Changes in the Mechanical Properties of the Rat Urinary Bladder Following Long-Term Spinal Cord Injury	U of Pittsburgh
Solids, Design, & Rehabilitation I	1	Casey Korecki	Determination of Baseline Loading Levels and Dependent Variables for Use in an Intervertebral Disc Organ Culture System	U of Vermont
	2	Lu Li	Effect of Whole Body Vibration on Reposition Sense and Dynamic Low Back Stability	U of Kansas
	3T	Bradley Davidson	Lumbar Extensor Fatigue Affects Postural Control by Increasing Ankle Stiffness	Virginia Polytechnic Inst and State U
	3T	Silvia Wongum	Why Does an Intervertebral Disc Herniate in a Period of Life in which Tissue Stresses Are Decreasing?	Eindhoven U of Technology
	HM	Yifei Dai	Sensitivity of B-Spline Surface Fitting of a Vertebral Endplate Using Least Squares	U of Notre Dame
Solids, Design, & Rehabilitation II	1	Kristen Moffat	Characterization of the Mechanical Properties of the ACL-Bone Insertion Site	Columbia U
	2	Saikat Pal	Probabilistic Finite Element Modeling of TKR Wear	U of Denver
	3T	Timothy Schwab	Ligaments Subjected to Cyclic Fatigue Fail Sooner and Strain More than Those Subjected to Static Creep at High Stress	U of British Columbia
	3T	Evan Goldberg	Compensatory Strategies in Response to Decreased Muscle Strength During Normal Walking	U of Texas - Austin
	HM	Bhaskar Thoomukuntia	Validation of an MRI-Based Method for In Vivo Joint Contact Mechanics Analyses	U of Notre Dame
Biofluids & Heat Transfer	1	Ralph Nyilas	Towards a New Geometric Approach to Assess the Risk of Rupture of Abdominal Aortic Aneurysms Using Patient Specific Modeling	Imperial College of Science, Technology, and Medicine
	2	Hyun Jin Kim	One-Dimensional and Three-Dimensional Finite Element Simulations of Blood Flow for Spinal Cord Injury Patients	Stanford U
	3	Raghav Goel	Enhancement of Cryoinjury to Prostate Tumors by Targeted Delivery of TNF- α Bound Gold Nanoparticles	U of Minnesota
	HM	Tomohiro Fukui	Differentiation of Vascular Diseases by Pulse Wave Propagation Analysis; Fluid-Solid Interaction Study	Tohoku U
	HM	Amit Ogata	Shear Dependence of Adhesive Force of Artificial Platelet Measured by Atomic Force Microscopy	Keio U

2005 Summer Bioengineering Conference Student Paper Awards

Doctoral Level Competition - Podium

Category	Place	Award Winner	Title	Institution
Biofluids & Heat Transfer	1	Joan Greve	Development of Methods to Non-Invasively, Longitudinally Quantify Hemodynamics in a Rat Model of Abdominal Aortic Aneurysm using Magnetic Resonance Imaging and Computational Fluid Dynamics	Stanford U
	2	Christopher Yakacki	Optimized Thermomechanics of a Shape-Memory Polymer Stent to Recover at Body Temperature	U of Colorado - Boulder
	3	Steve Lammers	Conjugation Efficiency of Functionalized Microbubbles for Targeted Ultrasound-Based Molecular Imaging	U of Colorado
	HM	Anna Fallon	Characterization of Thrombosis causes by Flow through Various Channels Approximating the Hinge Region of Mechanical Heart Valves	Georgia Inst of Technology
	HM	Zhonghua Li	Computation Fluid-Structure Interaction Analyses Applied to a Stented Abdominal Aortic Aneurysm	North Carolina State U
	HM	Binjian Sun	Ex Vivo Multi-Contrast MRI of Atherosclerotic Plaque under Simulated In Vivo Conditions	Georgia Inst of Technology
Solids, Design, & Rehabilitation	1	Blaine Christiansen	The Effect of Varying Magnitudes of Whole-Body Vibration on Various Skeletal Sites in Mice	Washington U - St Louis
	2	Tamim Diab	Dimorphic Damage Development and Toughness Loss Optimize Bone Fatigue Resistance	Rensselaer Polytechnic Inst
	3	James Chris Fritton	Adaptation of Cancellous Bone Mass and Architecture following Orchidectomy and Loading	Cornell U
	HM	Zuoping Li	Finite Element Modeling of the Human Pelvis	U of Alabama - Birmingham
	HM	Jason Maikos	In Vivo Tissue-Level Thresholds for Spinal Cord Injury	Rutgers U
	HM	Costin Untaroiu	Validation of Finite Element Model of the Human Lower Limb in Dynamic Lateral Bending	U of Virginia
Cell & Tissue	1	Craig Duvall	Osteopontin Deficient Mice Display Reduced Vascular Response and Altered Bone Properties During Fracture Healing	Georgia Inst of Technology
	2	Krishna Sarangapani	Dead Zone Distributions in Selectin-Mediated Interactions	Georgia Inst of Technology
	3	Bahar Bilgen	The Use of Particle Image Velocimetry to Validate Computational Fluid Dynamics Modeling of a Wavy-Walled Bioreactor for Cartilage Tissue Engineering	Northeastern U
	HM	Ericka Bueno	Effect of Bioreactor Geometry on the Efficiency of Chondrocyte Attachment to Polymer Scaffolds	Northeastern U
	HM	Xiefan Lin	Leukocyte Rolling on Nanopatterned Surfaces of P-Selectin	U of Virginia
	HM	Kristin Michael	Focal Adhesion Kinase Regulates Cell Adhesion Strenghtening	Georgia Inst of Technology

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Doctoral Level Competition - Poster

Category	Place	Award Winner	Title	Institution
Biofluids & Biotransport	1	Veronica Gambillara	Effect of Cyclic Reversal Flow on Endothelium and SMC Cell Metabolism on Pig Carotid Arteries	Ecole Polytechnique Federale de Lausanne
	2	T. Alexander Quinn	Design of Experiments Methodology for Biventricular Pacing Optimization	Columbia U
	3	Beverly Tang	Comparison of Wall Shear Stress in the Human Abdominal Aorta During Resting and Simulated Exercise Conditions: Application to in vitro Endothelial Cell Gene Expression	Stanford U
	HM	Anne-Virginie Salsac	Physiological Relevance of the Changes in Hemodynamic Stresses for Circulating Blood Cells in Abdominal Aortic Aneurysms	U of California - San Diego
	HM	Jonathan Barletta	Transient Temperature Distributions During Electrical Pulsing of Filaments Used for Microporation of Skin	Georgia Inst of Technology
Solids, Design, & Rehabilitation	1	Andrew Anderson	Validation of Bone Strains and Cartilage Contact Stress in a 3-D Finite Element Model of the Human Hip	U of Utah
	2	Eric Huang	Active Iris Mechanics and Pupillary Block: Analysis of Anatomical Risk Factors of Primary Angle-Closure Glaucoma	U of Minnesota
	3	Seungbum Koo	Patterns of Cartilage Degeneration for ACL Deficient Patients Are Influenced by Gait Mechanics	Stanford U
	HM	Amy Kerdok	Identification of Nonlinear Constitutive Law Parameters of Breast Tissue	Harvard U
	HM	Brian Kelly	Tension-Compression Nonlinearity in Chondrocyte-Seeded Agarose Hydrogels	U of Tennessee Health Science Center
Cell & Tissue	1	Kelly Emerton	Biconjugate Nano-Labeling of Intracellular Proteins within Fixed and Living Cells	City College of the City U of New York
	2	Helene Karcher	A Coarse-Grained Model for Force-Induced Protein Deformation	Massachusetts Inst of Technology
	3	Belinda Yap	Mechanical Deformation of Neutrophils into Narrow Channels Induces Pseudopod Projection and Changes in Biomechanical Properties	Massachusetts Inst of Technology
	HM	Caren Petrie	Novel Osteogenic Progenitor Cells	U of Virginia
	HM	George Engelmayr	A Structural Model for Predicting the Effective Stiffness of Engineered Heart Valve Tissues Based on Nonwoven Scaffolds	U of Pittsburgh