

2006 Summer Bioengineering Conference Student Paper Awards

B.S. Level Competition

Category	Place	Award Winner	Title	Institution
Biofluids, Imaging, & Cellular Biomechanics	1	An Nguyen	Quantification of Genipin Crosslinking with Free Amino Residues	U of Pennsylvania
	2	Allison Finger	Comparison of Effects of Cyclic Hydrostatic Pressure on Chondrogenesis of Human Mesenchymal Stem Cells From Age-Matched Normal and Osteoarthritic Donors	North Carolina State U
	3	Andrea Para	An In-Vitro Model of Thrombosis Using Highly Stenotic Tubing	Georgia Inst of Technology
	HM	Philip Bransford	Computer Model of Transscleral Drug Delivery to the Posterior Eye	U of Minnesota
	HM	Piyush Bajaj	Controlled Fibroblast, Smooth Muscle Cell, and Endothelial Cell Adhesion on Carbon Nanofibers Aligned on Polymers	Purdue U
Solids, Design, & Rehabilitation	1	Timothy Ficklin	Development of an Experimental Protocol to Measure Anisotropic Material Properties of Bovine Articular Cartilage	California Polytechnic State U
	2	Michael Anderson	Rotator Cuff Muscle Forces Are Inversely Related to the Value of the Glenohumeral Joint Constraint Angle	U of Pittsburgh
	3	Tara Hansen	A Study of the Histological Makeup of Bovine Anterior and Posterior Medial Meniscal Horn Attachments	Michigan Technological U
	HM	Harsha Tummala	Design, Implementation, and Testing of the HeartLander Force (HLF) Prototype	U of California - Berkeley
	HM	Jami Saffioti	Differential Mechanical Performance of the Q3 and Hybrid III Three Year Old Dummy Necks	Rowan U

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M.S. Level Competition

Category	Place	Award Winner	Title	Institution
Solid Mechanics	1	Cathryn Peltz	A Novel Technique for Measuring Passive Shoulder Mechanics in a Rat	U of Pennsylvania
	2	Angela Kedgley	Kinematics of the Shoulder Following Rotator Cuff Injury: An In-Vitro Biomechanical Study	U of Western Ontario
	3	Cheryl Dunham	The Role of an Anterior Flange on Load Transfer through the Distal Humerus Following Total Elbow Arthroplasty	U of Western Ontario
	HM	Aoife Connolly	Femoral Cartilage Thickness Distribution and Its Correlation with Anthropometric Variables	U College - Dublin
	HM	Joseph Iaquinto	Simulating the Contact Phase of Gait in the Cadaveric Lower Extremity	Virginia Commonwealth U
Biofluids & Tissue Engineering	1	Thanh Huynh	Effects of Venous Needle Turbulence during Hemodialysis on Endothelial Morphology and Nitric Oxide Formation	U of Alabama - Birmingham
	2	Kaustubh Ashtekar	Improved Diagnosis of Coronary Stenosis Under Clinical Setting Using Analytical Approach	U of Cincinnati
	3	Ariel Hanson	The Effects of Oxygen Plasma Treatment on Adipose-Derived Adult Stem Cell Adherence to Poly-L-lactic Acid Scaffolds	North Carolina State U
	HM	Dilek Tansoy	Comparative Effects of individual and Combined Growth Factors on the Cultivation of Tissue Engineered Cartilage	Northeastern U
	HM	Michael Wybenga	A Propulsion System for Swimming Micro-Robots	U of Waterloo
Design	1	Kyle Bialczak	Pediatric Bed Fall Simulation Model Development and Validation	U of Louisville
	2	Angela Knight	Head Injury Risk Associated with Feet-First Free Falls in Children and Influence of Impact Surface Type	U of Louisville
	3	Vega Lee	Development of an Inverse Dynamic Model of the Elbow Joint	U of Western Ontario
	HM	Jiali Wang	A Novel Respiratory Gating Design for Motion Tracking in PET/CT	Florida International U
	HM	Nicholas Jardine	Real-Time Monitoring and Control of Retraction Forces During Median Sternotomy	North Carolina State U

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Doctoral Level Competition - Podium

Category	Place	Award Winner	Title	Institution
Biofluids & Imaging	1	Rashmi Raghu	Implementation of A Viscoelastic Constitutive Model for Solving the One-Dimensional Equations of Blood Flow Using a Finite Element Method	Stanford U
	2	Rui Zhao	investigation of Device-Associated Platelet Margination Using Micro Flow Visualization	Carnegie Mellon U
	3	Lingli Liu	Real Time Blood Velocity and Vorticity Measurements Using a Custom-Designed Non-Invasive Echo Particle Image Velocimetry System: Initial In Vitro Experiments	U of Colorado - Boulder
	HM	Rui Wang	Design and Computational Studies of a Novel Miniature Venous Assist Device for the Fontan Circulation	U of Colorado - Boulder
	HM	Hyun Jin Kim	Quantification of Blood Flow and Pressure in the Abdominal Aorta of Spinal Cord Injury Patients Using a Three-Dimensional Fluid-Solid Interaction Finite Element Method	Stanford U
	HM	Devesh Amatya	Pressure Drop Versus Flow Rate Relationships for Deformable Orifice Diaphragms Used as Heart Valve Analogues	U of Minnesota
Solids, Design, & Rehabilitation	1	Raymond Hubbard	Cervical Nerve Root Compression Elicits Behavioral Hypersensitivity Dependent on the Magnitude of Applied Load	U of Pennsylvania
	2	Jennifer Currey	Characterization of the Mechanical Environment at an Implant interface: An In Vitro Study	Rensselaer Polytechnic Inst
	3	Stephanie Perry	Rat Ambulation Alterations Due to Supraspinatus Tendon Detachment	U of Pennsylvania
	HM	Simon Tang	A Novel Technique for Examination and Modeling of Trabecular Bone Microdamage	Rensselaer Polytechnic Inst
	HM	Craig Duvall	Osteopontin Deficient Mice Display Altered Torsional Mechanical Properties and Callus Formation and Remodeling During Fracture Healing	Georgia Inst of Technology
Tissue Engineering & Cellular Biomechanics	1	Christopher Wilson	Inhibition of MMPS, but not of ADAMTS-4 and -5, Reduces IL-1-Stimulated Fibrocartilage Degradation	Georgia Inst of Technology
	2	Stefano Oberti	Two Dimensional Arrays of Cells Using Ultrasound	U of Colorado - Boulder
	3	W. David Merryman	Aortic Valve Interstitial Cell Phenotype and Biosynthesis: Synergistic Effects of Cyclic Tension and TGF-B1	U of Pittsburgh
	HM	Triantafyllos Stylianopoulos	A Multiscale, Structural Model for the Elastic Behavior of Arterial Walls	
	HM	Megan Oest	Dose-Dependent Effects of BMP-2 and TGF-Beta 3 Co-Delivery on Functional Repair of Segmental Bone Defects	Georgia Inst of Technology
	HM	Charles Anderson	Primary Cilia: Mechanosensory Organelles in Bone?	Stanford U

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Doctoral Level Competition - Poster				
Category	Place	Award Winner	Title	Institution
Biofluids & Imaging	1	Jaehoon Seong	In Vitro Evaluation of Alteration to Flow in a Model of Elastase-Induced Saccular Aneurysm in Rabbit by Flow-Diverting Devices	U of Miami
	2	Alex Barker	Conjugation and Spin-Spin Relaxation of a Nanocrystal Magnetic Resonance Imaging Contrast Agent	U of Colorado - Boulder
	3	Sarah Vigmostad	A Novel, Efficient Fluid-Structure Interaction Algorithm for Dynamic Bioprosthetic Heart Valve Simulations	U of Iowa
	HM	Taehong Kim	Arterial Wall Temperature in the Presence of Inflamed Atherosclerotic Plaque: Straight Stenotic Case	Texas A&M U
	HM	Kevin Johnson	Coronary Flow Measurement Using Magnetic Resonance Phase Velocity Mapping at 3.0T	Georgia Inst of Technology
Solids, Design, & Rehabilitation	1	Paul Briant	Collagen Organization in the Superficial Layer of Articular Cartilage Relative to the Mechanical Environment within the Joint	Stanford U
	2	Srinidhi Nagaraja	Local Stresses, Architecture, and Mineralization Initiating Trabecular Bone Microdamage	Georgia Inst of Technology
	3	William Francis	Probabilistic Response of a Validated and Verified Parametric Cervical Spine Finite Element Model	Sowthwest Research Inst
	HM	Niamh Nowlan	The Calculation of Mechanical Stresses in the Growing Avian Embryonic Limb Using Optical Projection tomography	U of Dublin - Trinity College
	HM	Heather L. Guerin	Structural Mechanisms for Nonlinearity and Anisotropy in the Human Annulus Fibrosus: A Strain Energy Model Analysis	U of Pennsylvania
Tissue Engineering & Cellular Biomechanics	1	Michael Evans	Prediction of Fiber Alignment in Reconstituted Collagen Flaps using the Anisotropic Biphasic Theory	U of Minnesota
	2	Louise McMahon	Differentiation of Mesenchymal Stem Cells Along the Chondrogenic and Osteogenic Lineages in a Collagen-Gag Scaffold Under Static and Dynamic Conditions	U of Dublin
	3	Victor Nirmalanandhan	Mechanical Stimulation of Tissue Engineered Tendon Constructs: Effect of Scaffold Materials	U of Cincinnati
	HM	Margaret Julias	Extracellular Matrix Alignment Using Micromechanical Needle Manipulation	Rutgers U
	HM	Tao Jiang	Heparin Modified Chitosan-Poly(ester) Matrices for Bone Tissue Engineering	U of Virginia