

# 2003 Summer Bioengineering Conference Student Award

Co-Chairs

Dr. Sohi Rastegar & Dr. Rita Patterson

We gratefully acknowledge partial support from the Whitaker Foundation!



## TECHNICAL: Bachelors Level



**1st - Patricia S. Arauz**, *Collagen and Hydroxyapatite Incorporation into Poly(ethylene glycol) Hydrogels for Orthopedic Applications*

**2nd - Casey L. Korecki**, *Effect of Vitamin D Receptor on Bone Growth and Strength During Gestation*

**3rd - Crystal Ripplinger & David M. Schneider**, *Optically-Based Control of a Prosthetic Device*

### Honorable Mentions -

**Lindsay M. Godin**, *Characteristics of Intracellular Calcium Oscillations in Osteoblastic Cells During Repetitive Loading Conditions*

**Theresa M. Sukal**, *Restoration of Finger Function in Hemiparetic Stroke Patients using Goal-Directed Therapy: Coordination Station*

## FLUID/HEAT/TISSUE: Masters Level



**1st - Bo H. Chao**, *Cryosurgery of Normal and LNCaP Pro 5 Human Prostate Tumor Tissue in the Dorsal Skin Flap Chamber*

**2nd - Joan. M Greve**, *The Use of Magnetic Resonance Angiography to Directly Assess Arteriogenesis in Mice*

**3rd - Candace D. Gildner**, *Fibronectin Polymerization Enhances the Tensile Mechanical Properties of Cell-Imbedded Collagen Gels*

### Honorable Mentions -

**Vijaykalyan Yeluri**, *Performance Assessment of Photon Attenuation Correction in a New Hybrid PET/CT Scanner*

**Kelley W. Dwyer**, *Inhibition of Peripheral Nervous System Alters Ligament Healing*

## SOLID/DESIGN: Masters Level



**1st - Allyson Ianuzzi**, *Facet Joint Capsule Strains of Human Lumbar Spine Specimens During Physiology Motions*

**2nd - Venkata K. Gade**, *Variation of Reposition Sense of the Lumbar Spine with Torso Flexion and Moment Load*

**3rd - Hanna Isaksson**, *Mathematical Modeling of Stress Shielding with Bioresorbable Materials for Internal Fracture Fixation*

### Honorable Mentions -

**Hiroshi Yamada**, *Finite Element Analysis of Cultured Endothelial Cell under Pure Uniaxial Stretch: Effect of Cell Shape on Strain Distribution*

**David McNeal**, *Experimental Investigation of Finger Dynamics Before and After MCP Joint Arthroplasty*

## FLUID/HEAT: PhD Level



**1st - Joy P. Ku**, *Comparison of Blood Flow Patterns from CFD and MRI in a Bypass Graft Model*

**2nd - James R. Costello**, *The Role of Local Hemodynamics upon Short-Term Graft Healing of Porous ePTFE Implanted within a Baboon*

**3rd - Ryo Sudo**, *Coordinated Contraction of Bile Canaliculi Reconstructed in Rat Small Hepatocytes*

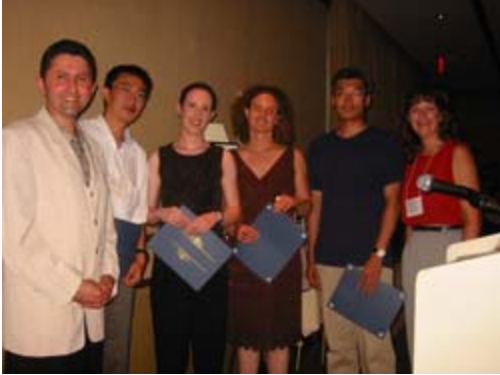
### Honorable Mentions -

**Heather A. Himburg**, *Fluid/heat - The Effect of Early Intimal Growth on Patterns of Evans Blue Dye in Macromolecular Transport Studies*

**Renn-Chan Ooi**, *Flui-Structure Interaction (F.S.I.) of the Human Cystic Duct*

**Zoya Gordon**, *Analysis of Feto-Plaacental Vasculature and Blood Circulation*

## SOLID/DESIGN: PhD Level



**1st - Janet E. Tapper**, *Joint Surface Velocity Changes after Ligament Transection in an Ovine Stifle Joint Model of Osteoarthritis*

**2nd - Wei Sun**, *Numerical simulations of the Planar Biaxial Mechanical Behavior of Biological Materials*

**3rd - Chi Hyun Kim**, *PTH Enhances and Sustains Mechanical Responsiveness of Trabecular Bone*

**Honorable Mentions -**

**Brian C. Ruiz-de-Luzuriaga**, *P38 Mitogen Activated Protein Kinase Regulates Mechanically-Induced Nitric Oxide and Prostaglandin Production in Articular Cartilage*

**Michelle L. Zec**, *The Accumulation of Damage Under Cyclic Loading is Not Altered Following Traumatic Strain in the Rabbit MCL*

**TISSUE: PhD Level**



**1st - Holly A. Leddy**, *Molecular Diffusion in Tissue-Engineered Cartilage Constructs: Effects of Time and Culture Conditions*

**2nd - Michael S. Ominsky**, *Effects of Oscillatory and Pulse-Static Shear on Activation of NF- $\kappa$ B, c-fos, and SRF in MC3T3 Osteoblast-Like Cells*

**3rd - Sandy Williams**, *Small Diameter Vascular Graft Tissue Engineering and Bioreactor Technology*

**Honorable Mentions -**

**Yunlong Liu**, *Evaluation of Regulatory DNA Regions for Matrix Metalloproteinase Expression*

**Sabina B. Bruehlmann**, *A New Technique to Investigate In Situ Collagen Micromechanics in the Annulus Fibrosus under Tension*