

***Workshop on Interdisciplinary Biomedical Research***  
***University of Notre Dame***  
***Indiana University School of Medicine***

***April 10 - 11, 2008 (Thursday and Friday), Center for Continuing Education, University of Notre Dame***

**Organizers:** Mark Alber, Holly Goodson, Jesus Izaguirre, Glen Niebur (Notre Dame) Elliot Rosen (Indiana University School of Medicine)

The goal of this workshop is to bring together researchers in biomedicine, bioengineering, computational and mathematical biology and biophysics to discuss recent developments in biomedical modeling as well as current and possible future collaborations. Topics to be discussed include development, neurobiology, thrombus formation, osteoporosis, bioimaging and bioinformatics.

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[http://www.nd.edu/~icsb/workshop\\_spr08.html](http://www.nd.edu/~icsb/workshop_spr08.html)

**April 10**

**8:00-8:30am Coffee and Registration**

**8:30-8:45am Opening Remarks**

**8:45-9:15am Holly Goodson**, Department of Chemistry and Biochemistry, University of Notre Dame, "*Biological Insights from Computational Modeling of Microtubule Dynamics*"

**9:15-9:45am Sherry Clendenon**, Department of Medicine, Division of Nephrology, Indiana University School of Medicine, "*4D Light Microscopy Image Acquisition, Visualization and Analysis*"

**9:45-10:15am Jesus Izaguirre**, Department of Computer Science and Engineering, University of Notre Dame, "*Using Structural and Network Information to Predict Protein Domain Interactions*"

**10:15-10:30am Coffee**

**10:30-11:00am Michael Ferkowicz**, Wells Center for Pediatric Research, Indiana University School of Medicine, *"The Emergence and Early Development of the Murine Embryonic Hematopoietic System"*

**11:00-11:30am Scott Emrich**, Computer Science and Engineering, University of Notre Dame, *"Lean on Me: Comparative Anopheles Genomics"*

**11:30-12:00pm Jake Chen**, School of Informatics, IUPUI, Founding Director of Indiana Center for Systems Biology and Personalized Medicine, *"Molecular Connectivity and Network Biology Tools for Complex Disease Studies"*

**12:00-1:30pm Lunch Donors Room, Morris Inn**

**1:30-2:00pm Zoltan Toroczkai**, Department of Physics, University of Notre Dame, *"Energy Landscape Networks and Protein Folding"*

**2:00-2:30pm Chris Oldfield**, Center for Computational Biology and Bioinformatics, Indiana University School of Medicine, *"Binding to Multiple Partners in Protein-Protein Interaction Networks"*

**2:30-3:00pm Glen Niebur**, Department of Aerospace and Mechanical Engineering, University of Notre Dame, *"TBA"*

**3:00-3:15pm Coffee**

**3:15-3:45pm Sean Mooney**, Assistant Professor of Medical and Molecular Genetics, Indiana University School of Medicine, *"Understanding the Biochemical Effects of Genetic Variation Data Using Computational Biology and Informatics"*

**3:45-4:15pm Elliot Rosen**, Department of Medical and Molecular Genetics, Indiana University School of Medicine, and **Zhiliang Xu**, Department of Mathematics, University of Notre Dame, *"Complimentary Experimental and Computational Vascular Injury Models to Study Thrombogenesis"*

**4:15-4:45pm Michael Ferdig**, Department of Biological Sciences, University of Notre Dame, *"Inheritance of Gene Expression Levels in Malaria Parasites Point to Regulatory Hotspots"*

**4:45-5:15pm Dmitry Traktuev**, Indiana Center for Vascular Biology and Medicine, Indiana University School of Medicine, *“Alliance of Blood Derived Endothelial Cells and Adipose Stromal Cells in Human Vasculogenesis: Timecourse and Stability of Neovasculature”*

**6:00-8:30pm Dinner Donors Room, Morris Inn**

**April 11**

**8:00-8:40am Coffee**

**8:40-9:00 Scott Christley**, Computer Science and Engineering, University of Notre Dame, *“Multiscale Discrete Stochastic Agent-based Model of Limb Chondrogenesis”*

**9:00-9:30am Rob Stahelin**, Indiana University Medical School South Bend, *“Experimental and Computational Investigation of Lipid-Protein Interactions”*

**9:30-10:00am Pedro Romero**, School of Informatics, IUPUI, *“Alternative Splicing Generates Alternative Biological Networks: Analyzing Tissue-Specific and Disease-Specific Variant Networks”*

**10:00-10:15am Coffee**

**10:15-10:45am Tamim Diab**, Department of Anatomy and Cell Biology, Indiana University School of Medicine, *“The Role of Damage Morphology in Age-Related Increase in Bone Fragility”*

**10:45-11:15am Greg Madey**, Department of Computer Science and Engineering, University of Notre Dame, *“Bioinformatic and Public Health Research Databases, Collaborative Environments, and Virtual Organizations”*

**11:15-11:45am Danny Chen**, Department of Computer Science and Engineering, University of Notre Dame, *“Computer-Assisted Radiation Cancer Treatment: Computational Problems and Algorithmic Solutions”*

**11:45-12:15pm Leonid Rubchinsky**, Department of Mathematical Science, IUPUI, Stark Neurosciences Research Institute, Indiana University School of Medicine, *"Dynamics of Basal Ganglia Networks in Parkinson's Disease: Models and Experiments"*

**12:15-1:30pm Lunch Donors Room, Morris Inn**

**1:30-2:00pm Gary An**, Department of Surgery, Northwestern University Feinberg School of Medicine, *"Agent-based Instantiation of Medical Knowledge: The Road to a Biomedical Knowledge Ecology"*

**2:00-2:20pm Charles Penninger**, Department of Aerospace and Mechanical Engineering, University of Notre Dame, *"An Investigation in the Cellular Mechanisms of Bone Remodeling"*

**2:20-2:40pm Yilin Wu**, Department of Physics, University of Notre Dame, *"Role of Social Motility in Facilitating Collective Motion of Myxobacteria"*

**2:40-3:00pm Dayu Lv**, Department of Aerospace and Mechanical Engineering, University of Notre Dame, *"A Mathematical Model for Human Glucose Metabolism"*