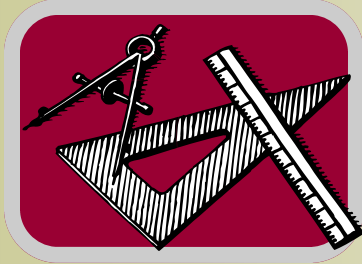
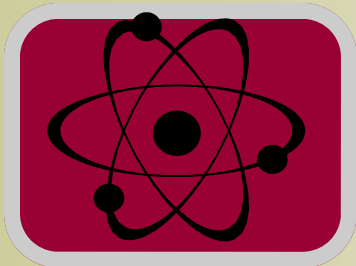


UNDERGRADUATE RESEARCH SPRING SYMPOSIUM & AWARDS



**Wednesday April 4, 2007
1-6pm
College of Architecture
Building
West Wing Atrium**



Sponsored by: Undergraduate Research
Opportunities Program
(UROP)



Schedule of Events

Oral Presentations	1:20-4:20pm
Poster Session	3:00-4:30pm
Awards Ceremony & Reception	4:30-6:00pm

Participants:

Oral Presentations

Humanities and Social Sciences

Session A (Room 259)

Session Moderator: Dr. Lisa Yaszek, LCC

1:20pm

Women's Empowerment After the Fall of the Taliban

Summar Shoaib, INTA

Mentor: Sylvia Maier, INTA

1:40pm

The History of Pain

Lindsey Chatel, STAC

Mentor: Cindy Klestinec, LCC

2:00pm

A Cross-Disciplinary Look at Landscapes

Amaris Gutierrez-Ray, STAC

Mentor: Ron Broglio, LCC

2:20pm

Changing the Face of Television: Subversive Sex and Gender

Identity Politics in Nip/Tuck

Chris VanAcker, STAC

Mentor: Dr. Lisa Yaszek, LCC

Engineering

Session B (Room 207)

Session Moderator: Dr. Rupal Thazhath, Biology

1:20pm

Extracellular Matrix Synthesis by Differentiating Embryonic Stem Cells

Shreya Shukla, BME

Mentor: Dr. Todd McDevitt, BME

1:40pm

Effects of Normal and Altered Shear Stress on the Biology of Intact Aortic Valve Leaflets

Adnan Elhammali, Physics

Mentor: Dr. Ajit Yoganathan, BME

2:00pm

Shear Stress Effects on Key Bone Formation Markers in 2T3 Pre-osteoblasts

Saujanya Vadoothker, BME

Mentor: Dr. Hanjoong Jo, BME



Engineering

Session C (Room 258)

Session Moderator: Dr. Steven Girardot, CETL

2:20pm

Numerical Simulation of Semiconductor Device Physics

Peter Karasev, EE, and Ivan Kolesov, CMPE

Mentor: Dr. Shyh-Chiang Shen, ECE

2:40pm

Non-Deterministic Design of Utility Scale Wind Energy Systems

Robert Scott, AE

Mentor: Dr. Lakshmi N Sankar & Dr. Dmitris Mavris, AE

3:00pm

Active Compressor Stability Management

Yuan (James) Liu, AE

Mentor: Dr. J.V.R. Prasad, AE

3:20pm

The Effect of Reversing Blood Flow on the Transmigration of Monocytes through the Endothelium

Matthew Goette, BME

Mentor: Dr. Larry McIntire, BME

3:40pm

Amniotic Fluid Stem Cells for Bone Tissue Engineering

Eric Deutsch, ME

Mentor: Dr. Robert Guldberg, ME

4:00pm

Super-Yagi: A Novel High-Gain Antenna Array for Wireless HDTV

Trang Thai, ECE

Mentor: Dr. Manos Tentzeris, ECE

Sciences

Session D (Room 260)

Session Moderator: Maria-Isabel Carnasciali, ME

2:20pm

Markov Chains and Traffic Analysis II

Emanuel Indrei, Mathematics

Mentor: Dr. Eric Carlen, Mathematics

2:40pm

Mixing by Steady Flows in Thermocapillary Driven Microdroplets

John Widloski, Physics

Mentor: Dr. Roman Grigoriev & Dr. Dmitri Vainchtein, Physics

3:00pm

Cortical Reorganization in Age-related Macular Degeneration

Vijay Palvia, Biology

Mentor: Dr. Eric Schumacher, Psychology

3:20pm

Learning Rates For Auditory Menus Enhanced With Spearcons Versus Earcons

Dianne Palladino, Psychology

Mentor: Dr. Bruce Walker, Psychology

Engineering

Session E (Room 207)

Session Moderator: Shawna Garcia, IBB

2:40pm

Stability Differences in Right versus Left-legged Stance

Subina Surendran, BME

Mentor: Dr. Lena Ting, BME

3:00pm

Review and Comparison of Systems Biology Modeling Approaches for Translational Research

Chanchala Kaddi, BME

Mentor: Dr. Dongmei Wang, BME

3:20pm

Review and Comparison of Systems Biology Simulation Tools for Translational Research

Melissa Freedenberg and Chanchala Kaddi, BME

Mentor: Dr. Dongmei Wang & Mr. Chang F. Quo, BME

Computing and Architecture

Session F (Room 259)

Session Moderator: Mitch Keller, Math/CS

3:20pm

Library East Commons Research

Amy Plauche, Architecture

Mentor: Dr. Sabir Khan, COA

3:40pm

Random Projection and Learning

David Mann and David Rutter, Computer Science

Mentor: Dr. Rosa Arriaga and Dr. Santosh Vempala, COC

4:00pm

Online Community Grid

Danny Miller, Computational Media

Mentor: Dr. David Bader, COC

Poster Session

College of Architecture

- 1 **Ferst Room Installation**
Allison Barfoot, ARCH & Ting Cheng, ID
Mentor: Dr. Sabir Khan, COA
- 2 **CourtsWeb**
Ira Dennis, ARCH
Mentor: Dr. Athanassios Economou, Dr. Mike Gamble, Elizabeth Doak, Thomas Grasl, & Myrsini Mamoli, COA
- 3 **Kindergarten revisited**
Jerry Hsu, ARCH
Mentor: Dr. Athanassios Economou, COA
- 4 **Carnegie Libraries: The Birth of the Public Library**
Lisa Thomason, ARCH
Mentor: Dr. Elizabeth Dowling, COA
- 5 **Solar Latrine**
Brad Davis, BC; Matt Madden, Marco Velasez, & Katie Snedeker, CEE
Mentor: Dr. Kevin Caravati, GTRI

College of Computing

- 6 **Haptic Laser Pointer**
Trevor Bentley, CS
Mentor: Dr. Gregory Abowd & Shwetak Patel, COC
- 7 **Automated Evaluation of Scientific Abstracts With Case-Based Reasoning**
Joseph Irwin, CS
Mentor: Dr. Ashwin Ram, COC

College of Computing ...continued from previous page

- 8 **Firefly**
Kyle Spafford, CS
Mentor: Dr. Keith Edwards, COC

- 9 **Visualization of News Articles Over Time**
Aaron St. Clair & Matthew Fong, CS
Mentor: Mr. Nicholas Diakopoulos, COC

College of Engineering

- 10 **Computational Studies of Optimizing the Horizontal Axis Wind Turbine Design**
Su Bae, AE
Mentor: Dr. Lakshmi N Sankar, AE

- 11 **Photogrammetric Analysis of Wave Propagation in Metallic Plates**
Alex Buchanan, AE
Mentor: Dr. Massimo Ruzzene, AE

- 12 **Experimental Analysis of Wave Propagation in Hexagonal and Chiral Cellular Structures**
Alek Gavrilovski, AE
Mentor: Dr. Massimo Ruzzene & Alessandro Spadoni, AE

- 13 **Families of Hydrothermally Stable Asymmetric Laminated Composites**
Robert Haynes, AE
Mentor: Dr. Erian Armanios, AE

- 14 **High-Speed Axial Reciprocating Probe**
Fabian Mak, AE
Mentor: Dr. Mitchell Walker, AE

- 15 MPD Design Methodologies II**
David Perner, AE
Mentor: Dr. Mitchell Walker, AE
- 16 Numerical Simulation of Annular Helicon Plasma**
Masayuki Yano, AE
Mentor: Dr. Mitchell Walker, AE
- 17 Development of Vector Based Modeling System for Molecular Beacon Validation**
Vasiliy Buharin, BME
Mentor: Dr. Gang Bao, BME
- 18 Utility of Ontologies in Modeling Application**
Sriram Challa, BME
Mentor: Dr. Dongmei Wang, BME
- 19 Computational Modeling of the Ceramide de Novo Synthesis Pathway**
Shobhika Dhingra & Melissa Freedenberg, BME
Mentor: Dongmei Wang & Chang F. Quo, BME
- 20 Development of a Cellular Ontology for Computational Modeling**
Shobhika Dhingra, BME
Mentor: Dr. Dongmei Wang, BME
- 21 Biodegradable Microsphere-Mediated Delivery of Differentiation Factors to Embryonic Stem Cells**
Ross Marklein, BME
Mentor: Dr. Todd McDevitt, BME
- 22 Bioinformatics: An Emerging Field**
Shalini Nemani, BME
Mentor: Dr. Dongmei Wang, BME

- 23 Quantitative Metrics to Evaluate the Efficacy of Bio-Models**
Erica Oden, BME
Mentor: Dr. Dongmei Wang, BME
- 24 Studying the Behavior of Ultra High Performance Concrete (UHPC) for Tensile Creep and Shrinkage Properties**
Aragaw Akalu, CEE
Mentor: Dr. Lawrence Kahn, CEE
- 25 Exploring Reaction of Water Stable Nano-C60 with Hydroxyl Radical**
Varun Gandhi, CEE
Mentor: Dr. Jaehong Kim, CEE
- 26 Usage of a 3D Range Imaging Camera to Increase the Safety in Construction**
Menache Sofer, CEE
Mentor: Dr. Jochen Teizer, CEE
- 27 Identification of Significant Process Parameters in Variable Frequency Microwave Curing**
Daniel Cepeda, ECE
Mentor: Dr. Gary May, ECE
- 28 Ohmic Contacts for Wide Bandgap Devices**
Zen Mehra, EE
Mentor: Dr. Shyh-Chiang Shen, ECE
- 29 Thermal Modeling of Embedded Active Electronic Components**
Jaeho Lee, ME
Mentor: Dr. Yogendra K Joshi & Dr. David Warren Gerlach, ME

30 CdTe/CdS/ITO Deposition for Carbon Nanotube-Based Solar Cells

Rodolfo Camacho-Aguilera, MSE; Trevor McLeod, EE; & Victor Kusomboone, MSE

Mentor: Dr. William (Jud) Ready, MSE/GTRI

31 Characterization of Novel Organic Polymer Materials for Thermochemical Lithography

Adam Jakus, MSE

Mentor: Dr. Seth Marder & Dr. Simon Jones, MSE

32 Thermo-Mechanical Behavior of Epoxy Shape Memory Polymer Foams

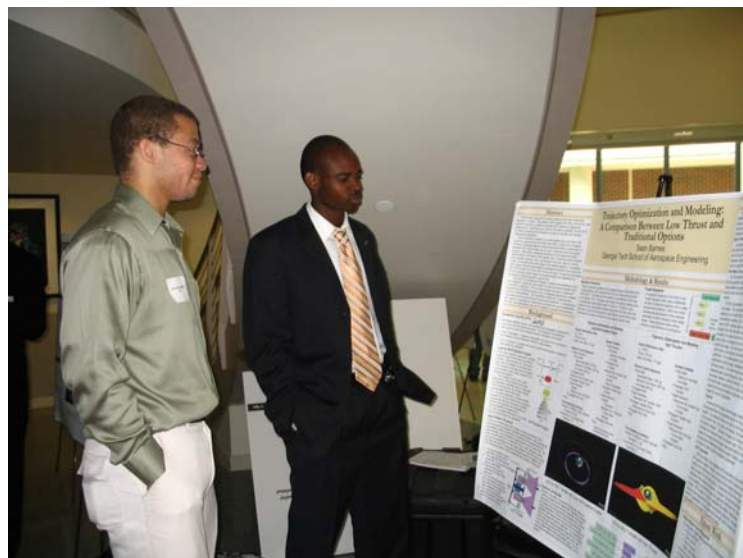
Martha Lesniewski, MSE

Mentor: Dr. Ken Gall, MSE

33 Nano-Nickel in Ni+Al Powder Mixture

Arsalan Siddiqi & Adam Jakus, MSE

Mentor: Dr. Naresh Thadhani & Daniel Eakins, MSE



College of Sciences

- 34 Lactate Testing in Elite Swimmers: Effect of Pre-exercise Carbohydrate Ingestion**
Michael Casner, MGMT
Mentor: Dr. Mindy Millard-Stafford, AP
- 35 Do Constructional Constraints Influence Cichlid Craniofacial Diversification?**
Meryl Mims, Biology
Mentor: Dr. Todd Streelman & Dr. Darrin Hulseay, Biology
- 36 The Photoracemization of Bi-Naphthols**
Elizabeth Ann Gould, Chemistry
Mentor: Dr. Kyril Solntsev, Chemistry
- 37 New Materials for High Efficiency Organic Light Emitting Diodes**
Lauren Hayden, Chemistry
Mentor: Dr. Seth Marder, Chemistry
- 38 Alexandrov's Conjecture**
Brian Nakamura, Math
Mentor: Dr. Mohammad Ghomi, Math
- 39 The Eclipsing Binary MY Cygni**
Rebecca Tucker, Physics
Mentor: Dr. James Sowell, Physics
- 40 Target Cueing and Search Asymmetries in Visual Search**
Bath-Ammi Garcia, Psychology & Charalampos Papadimetriou, Physics
Mentor: Dr. Elizabeth Davis & Kenneth Hailston, Psychology

Ivan Allen College

41 Team Dynamics and Bonding within a Virtual Environment

Andrew Ho, Computational Media

Mentor: Dr. Ute Fischer, LCC

42 Science Fiction, Fandom, and the Bud Foote Collection

Betsy Gooch, STAC

Mentor: Dr. Lisa Yaszek, LCC

43 Italian Futurism Cinema: Technological and Cultural Impacts

Jenifer Vandagriff, STAC

Mentor: Dr. Angela Dalle Vacche, LCC



RECOGNITIONS

Special Thanks:

College of Architecture

Ms. Fadrika Prather, UROP Project Coordinator

Ms. Neela Balkissoon, UROP Student Assistant

Faculty and Graduate Student Judges from the Colleges

Oral Session Moderators

Ms. Maria-Isabel Carnasciali, ME

Ms. Shawna Garcia, IBB

Dr. Steven Girardot, CETL

Mr. Mitch Keller, Mathematics

Dr. Rupal Thazhath, Biology

Dr. Lisa Yaszek, LCC

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