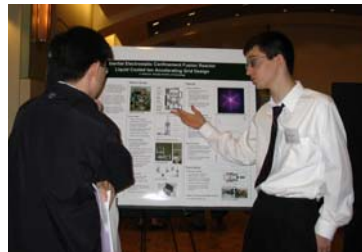
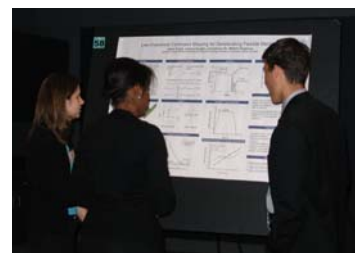
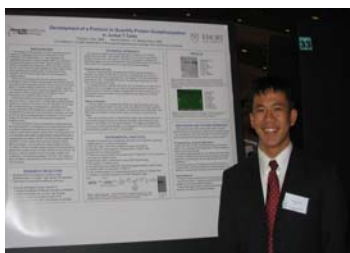


4th Annual Undergraduate Research Spring Symposium



Wednesday April 1, 2009

Sponsored by:
Undergraduate Research
Opportunities Program (UROP)

4th Annual Undergraduate Research Spring Symposium



Event:

Wednesday, April 1, 2009




Location:

Student Center Ballroom & Surrounding Rooms



Times:

Oral Sessions: 1:00-4:30pm
Poster Session I: 2:30-3:25pm
Poster Session II: 3:35-4:30pm
Reception: 4:30pm
Awards: 5:15pm



Oral Presentations

Student Center, 3rd Floor

Session A: Chemistry and Biochemistry

Student Center Room 319

Moderator: Dr. Carrie Shepler, Chemistry

- 1:00 Ion Exchange Properties of Polypyrrole Bilayers**
Roya Kalantari, BCHM
Mentor: Dr. Mira Josowicz, CHEM/BCHM
- 1:20 Study of In Situ Magnetic Properties of Films Using Magnetic Quartz Crystal Microbalance**
Kevin Vavra, BCHM
Mentor: Dr. Jiri Janata, CHEM/BCHM
- 1:40 The Mechanism of Proteoglycan Membrane Anchorage Affects the Endocytic Pathway of Cellular Cargo**
Kevin Hardin, CHEM
Mentor: Dr. Christine Payne, CHEM/BCHM
- 2:00 Synthesis of Cyclic di-GMP: Harnessing G-quartet Formation in Organic Synthesis**
Kenneth Taylor, BCHM
Mentor: Dr. Nicholas Hud, CHEM/BCHM

Session B: Public Policy, History, and Literature

Student Center Room 319

Moderator: Dr. Karen Adams, Fellowship Communication Program

- 2:50 Al Qaeda and Unconventional Weapons**
Kemp Anderson, MGT
Mentor: Dr. Margaret Kosal, INTA
- 3:10 Technology to Policy - Forecasting Policy Impacts of Targeted Nanovector Chemotherapy**
Alexandra Henke, INTA
Travis Horsley, PUBP
Mentor: Dr. Jennie Lincoln, GTRI/Policy
- 3:30 Women in Nineteenth Century Colonial India Through the Works of Flora Anne Steele**
Bryn Gravitt, STAC
Mentor: Dr. Narin Hassan, LCC
- 3:50 Technology to Policy: A Case Study in Biofortification**
Tobias Tatum, PUBP
Mentor: Dr. Marlit Hayslett, GTRI/Policy
- 4:10 Deterring Bioterrorism: Re-emerging Infectious Disease and Deterrence Theory**
Ana Terron, INTA
Mentor: Dr. Margaret Kosal, INTA

Session C: Physics and Atmospheric Sciences
Student Center Room 320
Moderator: Dr. Dana Hartley, EAS

- 1:00 Measurement of Forces on Solid Objects Impacting on a Free Liquid Surface**
Reuven Ballaban, PHYS
Mentor: Dr. Michael Schatz, PHYS
- 1:20 Spatial and Temporal Variability of Phytoplankton Chlorophyll and Carbon in the Equatorial Pacific, 2005 to 2008: Observations from Ships and Satellites**
Joel Craig, EAS
Mentor: Dr. Pete Strutton, College of Oceanic and Atmospheric Sciences, OSU
- 1:40 The Regime Between Periodic and Turbulent Fluid Flow with Forced Motion**
Jonathan Paprocki, PHYS
Mentor: Dr. Michael Schatz, PHYS
- 2:00 Quantum Space-Time: Development and Applications**
Sarang Shah, PHYS
Mentor: Dr. David Ritz Finkelstein, PHYS
- 2:20 Towards Laser Excitation of a Nucleus: Trapping and Laser Cooling Triply Charged Thorium**
Dave Naylor, PHYS
Mentor: Dr. Alex Kuzmich, PHYS

Session D: Material Applications and Detection
Student Center Room 320
Moderator: Ms. Ann Blasick, DOPP

- 2:50 Optimization of Quantum Dots for the Detection of Gamma Radiation**
Julian James, MSE
Mentor: Dr. Zhitao Kang, GTRI/Electro optical sys labs
- 3:10 Nanotechnology in Sensing**
Justin Ratner, PHYS
Mentor: Dr. Emmanouil Tentzeris, ECE
- 3:30 Monte Carlo Modeling of an X-ray Fluorescence Detection System**
Nivedh Manohar, NRE
Tripp Jones, NRE
Mentor: Dr. Sang Hyun Cho, ME
- 3:50 Evaluation of Gas Diffusion Media for a PEM Fuel Cell with Graduated Porosity.**
Haley Carney, ME
Christi Nesmith, ME
Mentor: Dr. Tequila Harris, ME
- 4:10 Thickness Dependence of Dielectric Extrinsic Contributions in Lead Zirconium Titanate (PZT) Thin Films**
Joel Weber, ME
Mentor: Dr. Nazanin Bassiri-Gharb, ME

Session E: Polymers and Materials
Student Center Room 321
Moderator: Ms. Kathy Tomajko, Library

- 1:00 Radiation Crosslinking of Novel Shape Memory Polymer Systems**
Taylor Ware, MSE
Mentor: Dr. Ken Gall, MSE
- 1:20 Porous Microspheres from Particle Stabilized Emulsions**
Stephanie England, CHME
Mentor: Dr. Sven Behrens, CHBE
- 1:40 The Effect of Cross-Linker Densities on Shape-Memory Polymer Composites:
 Optimizing and Utilizing Component Materials for Orthopedic Casts**
Liz Norred, BME
Mentor: Dr. Ken Gall, MSE

Session F: Aerospace and Fluids
Student Center Room 321
Moderator: Ms. Kathy Tomajko, Library

- 2:10 Implementation of Plume Navigation in Turbulent Flows**
Robert Ussery, EE
Mentor: Dr. Donald Webster, CEE
- 2:30 The Testing and Examination of Unsteady Aerodynamics in a Sling Load System**
Ranjit Mantri, AE
Rachel Haga, AE
Aniel Jardines, AE
Anand Nallathambi, AE
Rodney Sumlim, AE
Mentor: Dr. Narayanan Komerath, AE
- 2:50 Combustion Instabilities in the Wake of a V-Gutter in a Single Flame Holder
 Augmentor**
Aimee Fricker, AE
Mentor: Dr. Ben Zinn, AE
- 3:10 Adaptive Control Experiments for a Slender Launch Vehicle**
Suyog Benegalrao, AE
Mentor: Dr. James Craig, AE
- 3:30 Laser Doppler Velocimetry and CH* Chemiluminescence of a Low Swirl Burner**
Benjamin Emerson, AE
Mentor: Dr. Tim Lieuwen, AE

Session G: Nanotechnology and Sensing
Student Center Room 301
Moderator: Dr. Eric Moschella, Success Programs

- 1:00 Monitoring Mating Mosquitoes to Mitigate Malaria: 3D Tracking with 4D Light Fields**
Andrew Bardagjy, EE
Mentor: Dr. Frank Dellaert, Interactive Computing
- 1:20 Passive Measurement of a Room Impulse Response**
Alexander Roan, ME
Yosef Beck, PHYS
Mentors: Dr. Erica Ryherd
Dr. Karim Sabra, ME
- 1:40 Amorphous Silicon Carbon Nanotube Based Photovoltaics**
Justin Nguyen, MSE
Mentor: Dr. Jud Ready, GTRI/MSE
- 2:00 Electrically Conductive Polymer Nanocomposites: Theoretical Models vs. Experimental Data and the Rheology-Percolation Threshold Relationship**
Chun Chu, ME
Mentor: Dr. Kyriaki Kalaitzidou, ME
- 2:20 Fully Atomistic Simulation of a Periodic Array of Single Walled Carbon Nanotubes**
William Hardin, MSE
William Mateker, MSE
Mentors: Dr. Seung Soon Jang;
Ji Il Choi, PHYS;
Giuseppe Brunello, APL PHYS/MSE

**Session H: Computing Applications in Architecture,
Music, and Psychology**
Student Center Room 301
Moderator: Mr. Paul Hurst, Fellowship Communication Program

- 2:50 Applying Content-Based Recommendation to Indian Music**
Andrew Ash, CS
Mentors: Dr Parag Chordia,
Meghu Adoni
Oliver Jan
Karan Mehra, Music
- 3:10 Errors of Disclosure for Computer Mediated Systems**
Alan Poole, PSY
Mentor: Dr. Arthur D. Fisk, PSY
- 3:30 BIM-enabled Integrated Optimization Tool for LEED Decisions**
Shannon Barnes, BC
Mentor: Dr. Daniel Castro-Lacouture, BC

Session I: Biomedical Engineering

Student Center Room 343

Moderator: Ms. Monique Tavares, Research and Innovation

- 1:00 Morphological Characterization of Single Ventricle using Magnetic Resonance Imaging**
Jin Sol Oh, CHME
Mentor: Dr. Ajit Yoganathan, BME
- 1:20 Detection of protein S-glutathionylation during T cell receptor activation**
Theodore Chen, BME
Mentor: Dr. Melissa Kemp, BME
- 1:40 Engineering Analysis of Basal Chordal Cutting in Treatment of Ischemic Mitral Regurgitation**
Lazarina Gyoneva, BME
Mentor: Dr. Ajit Yoganathan, BME
- 2:00 Thrombotic Occlusion in Stenotic Arteries**
Michael Wildes, BME
Jeremy Hurwitz, BME
Mentor: Dr. David Ku, ME
- 2:20 Poly(ethylene)glycol-based Poly(beta-amino esters) for stem cell encapsulation**
Martha Lesniewski, MSE
Mentor: Dr. Ken Gall, MSE
- 2:40 Capillary Design and Production For Biological Application**
Phillip Lee, BME
Mentor: Dr. Craig Forest, BME

Session J: Assistive Technology

Student Center Room 343

Moderator: Ms. Yvette Upton, Women's Resource Center

- 3:10 Development of Kinematic Model for Rehabilitation Robot**
Jessie Martin, ME
Mentor: Dr. Jun Ueda, ME
- 3:30 Development of a Wearable Device that Enhances Tactile Sensitivity**
Maximilian Hertanto, ME
Mentor: Dr. Jun Ueda, ME
- 3:50 Assistive Technology: The Application and Rhetoric of Cochlear Implants**
Lindsay Chatel, STAC
Mentor: Dr. Rebecca Burnett, LCC

Poster Session I

Student Center Ballroom

2:30 - 3:25 PM



College of Sciences



- 1 Activity of Intact Ankle Extensor Synergists After Peripheral Nerve Injury**
Shivani Shah, BIO
Mentor: Dr. Boris Prilutsky, Applied Physiology
- 2 CATEA Wiimote**
Christa Aaron, BME
Eric Pointel, Mechanical Engineering
Oliver Albrecht, Biomedical Engineering
Mentor: Dr. Stephen Sprigle, Applied Physiology
- 3 Analysis of Temperature and Relative Humidity Variation in Wheelchair Cushion Monitoring Tests**
Matthew Eicholtz, ME
Mentor: Dr. Stephen Sprigle, Applied Physiology
- 4 Mechanism for Independent Operation of Power Wheel Chair Center-Mounted Footrest for Transferring Users**
Xiao Han, BME
Kimberly Holland, Biomedical Engineering
Samuel Wells, Mechanical Engineering
Katie Bell, Biomedical Engineering
Mentor: Dr. Stephen Sprigle, Applied Physiology
- 5 Inferring Mortality Rates of Bacteriophages from Community Assemblages**
Sophia Fisher, BIO
Mentor: Dr. Joshua Weitz, Biology
- 6 Nuclear Magnetic Resonance Based Whale Shark Metabolomics**
Krista Lim-Hing, BIO
Mentor: Dr. Julia Kubanek, Biology
- 7 Discovering a Biological Control for the Red Tide using a Competitor Phytoplankton Species**
Denise Sutter, BIO
Mentor: Dr. Julia Kubanek, Biology
- 8 The Study of the Protein Myocilin to Find a Treatment for Primary Open Angle Glaucoma**
Jenna Gallops, BCHM
Mentor: Dr. Raquel Lieberman, CHEM/BCHM
- 9 Amino Acid Profiling in Serum by on-plate Solid Phase Extraction and Multicapillary Desorption Electrospray Ionization Mass Spectrometry (DESI MS)**
David Rizzo, CHEM
Mentor: Dr. Facundo Fernandez, CHEM/BCHM
- 10 Viral Fingerprinting Using SERS**
Katherine Siemens, CHEM
Nicole Marotta, Chemistry
Mentors: Dr. Lawrence Bottomley and Nicole Marotta, CHEM/BCHM

College of Sciences, continued

- 11 Thermodynamic Properties of Multi-Component Aerosols Derived through CCN Activation Experiments**
Daniel Tkacik, EAS
Mentor: Dr. Athanasios Nenes, EAS
- 12 X-ray diffraction studies of the temperature dependence of the electronic properties of graphene**
Michael Clark, Physics
Mentor: Dr. Ed Conrad, Physics
- 13 Steady State Potentials as a Correlate of Neural Competition in the Visual System**
William Alverson, Psychology
Mentor: Dr. Paul Corballis, Psychology
- 14 Functional Neuroimaging Investigation of the Neural Mechanisms for Successful Feeling-of-Knowing Judgments**
Ronit Greenberg, Psychology
Mentor: Dr. Chris Hertzog, Psychology
- 15 Training of Novices on Hierarchical Task Analysis**
Sarah Felipe, Psychology
Mentor: Dr. Wendy Rogers, Psychology
- 16 Chinese Self Paced Study**
Rory Murray, Psychology
Mentor: Dr. Chris Hertzog, Psychology
- 17 The Effects of Aging on Contextual Binding for Emotional Stimuli**
Rachel Newsome, Psychology
Michael Dulas, Psychology
Mentors: Dr. Audrey Duarte and Michael Dulas, Psychology



College of Computing



- 18 Scalable Video Conferencing**
Brian Stebar, CS
Matthew McCawley, CS
Mentor: Dr. Umakishore Ramachandran, CS



College of Engineering



- 19 Characterizing Fibrin-Fibrin Knob Derived Peptide Binding Interactions**
Wendy Brown, BME
Mentor: Dr. Thomas Barker, BME
- 20 Power Loss and PIV Studies in the Total Cavopulmonary Connection of the Fontan Circuit**
Jessica Kanter, BME
Mentor: Dr. Ajit Yoganathan, BME
- 21 Controllable Incorporation of Biodegradable Polymer Microspheres within Embryoid Bodies**
Scott Seaman, BME
Mentor: Dr. Todd McDevitt, BME

College of Engineering, continued

- 22 Effect of Tricuspid Valve Annular Dilatation on Leaflet Coaptation Area: An In-Vitro Study**
Patrick Shannon, BME
Mentor: Dr. Ajit Yoganathan, BME
- 23 pH sensitive fluorescent protein mutant for use in QD-FP FRET probe**
David Sotto, BME
Mentor: Dr. Gang Bao, BME
- 24 Quantifying Redox buffering Components in Acute Lymphoblastic Leukemia (ALL) Cell Lines
EU-1WT, EU-3WT, and EU-3DR**
John Vaughns, CHEM
Mentor: Dr. Melissa Kemp, BME
- 25 Cell chemotaxis induced by secreted factors from differentiating embryonic stem cells**
James Waring, ME
Mentor: Dr. Todd McDevitt, BME
- 26 Dynamic Deformation Characteristics of Porcine Aortic Valve Leaflet**
Michael Weiler, BME
Mentor: Dr. Ajit Yoganathan, BME
- 27 Using topographical cues to enhance the regenerative phenotype of peripheral nerve cells**
Julie Yeh, BME
Mentor: Dr. Ravi Bellamkonda, BME
- 28 Singlet Oxygen Photosensitization by Red Fluorescent Proteins**
Soohee Cho, CHEM
Mentor: Dr. Andreas Bommarius, CHBE
- 29 Stability of Zeolites in Liquid Hot Water**
Andrew D'Amico, CHBE
Mentor: Dr. Carsten Sievers, CHBE
- 30 Maximizing the Yield of Crystallin Protein**
David Detwiler, CHBE
Mentor: Dr. Athanassios Sambanis, CHBE
- 31 Automation of Particle Tracking Technology**
Hyunwoong Lee, CHBE
Mentor: Dr. Victor Breedveld, CHBE
- 32 Parameters for Automated Microneedle Dipping**
Anastasia Marchenkova, BIO
Mentor: Dr. Mark Prausnitz, CHBE
- 33 Discovery of novel actinomycete xylanases for xylan hydrolysis**
Trinh Vo, CHBE
Roslu Zachariah, CHBE
Mentor: Dr. Rachel Chen, CHBE
- 34 Screening for Xylanase Producing Actinomycetes Using Blue Dyed Corn Bran**
Roslu Zachariah, CHBE
Trinh Vo, CHBE
Mentor: Dr. Rachel Chen, CHBE

College of Engineering, continued

- 35 Particle Mixing in Microfluidic System**
Boyang Zhang, CHBE
Mentor: Dr. Lu Hang, CHBE
- 36 Designing Microfluidic device that separates compliant particles**
John Arata, ME
Mentor: Dr. Alexander Alexeev, ME
- 37 Molecular Dynamics of Irradiation Effects in Nuclear Waste Forms**
Justin Branley, NRE
Mentor: Dr. Chaitanya Deo, ME
- 38 Neutral Particle Density**
Liang Zhao, PHYS
Mentor: Dr. Weston Stacey, ME
- 39 Optimization of the Thermo-mechanical Properties of Multilayer Shape-Memory Polymer Composites for Orthopedic Casts**
Stephanie Drewicz, BME
Mentor: Dr. Ken Gall, MSE
- 40 Acrylate-Polyurethane Copolymers**
Nathan Evans, MSE
Walter Voit, MSE
Keith Hearon, MSE
Mentors: Dr. Ken Gall and Walter Voit, MSE
- 41 Constant and Pulse Induction Heating of Shape Memory Polymers with Aerospace Applications**
Anthony Formica, AE
Mentor: Dr. Ken Gall, MSE
- 42 Modeling and Simulation of the Impact Response of Maraging Steel Linear Cellular Alloys for Structural Energetic Material Applications**
Adam Jakus, MSE
Mentor: Dr. Naresh Thadhani, MSE
- 43 Mechanical Efficiency as an Actuator of Shape Memory Polymer Foams**
Jeremy Kinnaird, AE
Mentor: Dr. Ken Gall, MSE
- 44 Evaluation of Thermomechanical Properties of Fiber Reinforced Shape-memory Polymer Systems**
Agatha Kwasnik, BME
Mentor: Dr. Ken Gall, MSE
- 45 The Effect of Cross-link Density on the Relationship between Toughness and Chemistry in Photopolymerizable (Meth)Acrylate Networks Under Aqueous Conditions**
David Millard, BME
Michelle Hyjek, Biomedical Engineering
Mentor: Dr. Ken Gall, MSE
- 46 Shape Memory Polymer Emulsions to create novel latexes**
Melissa Minneci, ME
Mentor: Dr. Ken Gall, MSE

College of Engineering, continued

- 47 Time Dependent Transitions in Shape Memory Polymers for Orthodontic Applications**
Karan Raturi, BME
Mentor: Dr. Ken Gall, MSE

- 48 Fully Recoverable, High Strain Shape Memory Polymers**
Dustin Simon, MSE
Mentor: Dr. Ken Gall, MSE

- 49 Investigating Steric Protection of DNA in the Presence of Nucleases**
Taylor Tomassi, MSE
Mentor: Dr. Valeria Milam, MSE

- 50 Design of Photopolymerizable Polymer Surfaces with Tailorable Chemistry and Surface Elasticity for in vitro Cellular Applications**
Jessica Wyche, BME
Mentor: Dr. Ken Gall, MSE

- 51 Differential Scanning Calorimetry Analysis in Polymer/Carbon Nanotubes**
Anisha Amatya, PTFE
Mentor: Dr. Satish Kumar, PTFE

- 52 Aerodynamic Characteristics of Airfoils Experiencing Unsteady Aeroelastic Effects**
Phillip Richards, BIO
Mentor: Dr. Marilyn Smith, AE

- 53 Quantification of Protein Encapsulation and Drug Delivery in Polymer Microneedles**
Ginger Tsai, BME
Mentor: Dr. Mark Prausnitz, CHBE

Poster Session II

Student Center Ballroom

3:35 - 4:30 PM

Ivan Allen College

- 1 Do U.S. Farm Payments Affect the Demand for Immigrant Agricultural Workers and Total Farm Labor? The Case of Conservation Subsidies and Decoupled Payments**
Gabrielle Sirow, ECON
Mentor: Dr. Ruth Uwaifo Oyelere, ECON
- 2 A Study of Public and Private Enforcement of US Antitrust Policy and Its Impact on Innovation**
Michael Warwick, ECON
Mentor: Dr. Vivek Ghosal, ECON
- 3 Women in Science and Technology (WST) Inman STEM Initiatives**
Jimia Head, STC
Mentor: Dr. Carol Colatrella, LCC
- 4 Gendered Play in Online Worlds**
Kady Rosier, CM
Mentor: Dr. Celia Pearce, LCC
- 5 Women in Science and Technology (WST) Inman STEM Project - GEMS**
Kristin Seiloff, MGT
Christy Seerley, ARCH
Robin Snyder, ISYE
Amanda Chamberlin, PTFE
Emily Goss, PTFE
Mentor: Dr. Carol Colatrella, LCC
- 6 Science and Technology Legislative Landscape**
Travis Horsley, PUBP
Mentor: Dr. Richard Barke, PUBP
- 7 Tracking the Rise of State-Sponsored Stem Cell Research**
Ruchir Karmali, BME
Mentor: Dr. Aaron Levine, PUBP
- 8 Patient Experiences with Unproven Stem Cell Therapies**
Kirsten Ryan, STAC
Amanda Sanders, STAC
Donnie Wang, STAC
Mentor: Dr. Aaron Levine, PUBP
- 9 Performance Considerations of Symbolic Execution**
Jonathan Loesch, CS
Quinn Cone, Computer Science
Tommy Smith, Computer Science
Mentor: Dr. Alessandro Orso, CS
- 10 Lek Behavior as a Model for Multi-Robot Systems**
Brittany Duncan, CS
Mentor: Dr. Ron Arkin, CC



College of Computing



- 11 ProveIt: A Tool for Supporting Strong Citation Practices on Wikipedia**
Matthew Flaschen, CS
Mentor: Dr. Amy Bruckman, CC
- 12 The Effects of Mobility on Mobile Text Input**
Daniel Gifford, CS
Mentor: Dr. Thad Starner, CC
- 13 Using First Order Inductive Learning as an Alternative to a Simulator in a Game Artificial Intelligence**
Kathryn Long, CS
Mentor: Dr. Ashwin Ram, CC
- 14 Spirosoft: An Ecocentric Approach to Pediatric Asthma**
Daniel Sabio, CM
Mentor: Dr. Rosa Arriaga, CC
- 15 Kermit : Home Network Visualization**
Jin Yao, CS
Mentor: Dr. Rebecca E. Grinter, CC
- 16 Humanoid robots for everyone**
Hyun-Soo Yi, CS
Mentor: Dr. Mike Stilman, CC
- 17 A Quantitative Analysis Of The Attributes Of Successful Online Collaborative Projects**
Kevin Ziegler, CS
Mentor: Dr. Amy Bruckman, CC
- 18 3D Interactive Dinosaur Dictionary**
Sam Rickles, CM
Mentor: Dr. Mark Riedl, CC



College of Engineering



- 19 Flow Control Using A Dimpled Surface**
Dilip Joy Thekkoodan, ME
Mentor: Dr. T.T. Lim, National University of Singapore, Faculty of Engineering
- 20 Exploring Helicopter In-Plane Noise Reduction Possibilities via rotor Blade/Airfoil Geometry Designs**
Natasha Barbely, AE
Mentor: Dr. Lakshmi N. Sankar, AE
- 21 Analysis and Design of Horizontal Axis Wind Turbines for Feasible Green Energy Production**
Kreston Barron, AE
Mentor: Dr. Lakshmi N. Sankar, AE
- 22 An Examination of PIV Methods**
Kevin Goal, AE
Mentor: Dr. Narayanan Komerath, AE
- 23 Computational vs. Empirical-Based Drag Prediction of Advanced Concepts**
Ben Johnson, AE
Pierre Valdez, AE
Kishen Raghunath, AE
Mentor: Dr. Narayanan Komerath, AE

College of Engineering, continued

- 24 Analysis of Thermal Protection System Alternatives**
Jessica Juneau, AE
Mentor: Dr. Robert Braun, AE
- 25 Flame Brush Dynamics of an Acoustically Excited, Turbulent Jet Flame**
Hsin-Hsiao Ma, AE
Mentor: Dr. Tim Lieuwen, AE
- 26 Flame Response of Swirl Premix Flames to Transverse Acoustic Excitation**
Shweta Natarajan, ME
Mentor: Dr. Tim Lieuwen, AE
- 27 John J. Harper Wind Tunnel Renovation**
Kishen Raghunath, AE
Anand R Nallathambi, AE
Aniel Jardines, AE
Rachel Haga, AE
Mentor: Dr. Narayanan Komerath, AE
- 28 Turbulent Flame Speeds of H₂/CO Blends**
Alexander Roan, ME
Jose Antezana, ME
Juan Pedroza, AE
Mentor: Dr. Tim Lieuwen, AE
- 29 Closed Gas Cycle Boundary Layer Turbine for Micro Renewable Power**
Dustin Teuscher, AE
Mentor: Dr. Narayanan Komerath, AE
- 30 Small-Scale Vertical Axis Wind Turbine Development**
Dilip Joy Thekkoodan, ME
Aniel Jardines, AE
Ranjit Mantri, AE
Rodney F Sumlin, AE
Xiaofan Fei, AE
Mentor: Dr. Narayanan Komerath, AE
- 31 Micro-renewable Energy Solar Collector**
Pierre Valdez, AE
Xiao Pan, AE
Dilip Joy Thekkoodan, AE
Anwasha Roy Paladhi, AE
Xiaofan Fei, AE
Mentor: Dr. Narayanan Komerath, AE
- 32 Ironworker Safety Performance Analysis**
John O'Har, CE
Mentor: Dr. Jochen Teizer, CEE
- 33 Digital Forensic Evidence Extraction**
Kishore Atreya, CMPE
Kevin Martin, ECE
Mentor: Dr. Henry Owen, ECE
- 34 Design and Integration of Millimeter-wave Antenna Arrays on Organic Flex Substrate LCP**
Farzad Nasri, EE
Mentor: Dr. Emmanouil Tentzeris, ECE

College of Engineering, continued

- 35 Tongue Driven Robotic Arm Control**
Asma Qureshi, ECE
Jeremy Jones, ECE
Jeremy Thompson, ECE
Mentor: Dr. Maysam Ghovanloo, ECE
- 36 Autonomous Trajectory Adjustments to Supplement an Automobile Driver's Reactions**
Andrew Schulz, EE
Mentor: Dr. Patricio Vela, ECE
- 37 Increasing Ethanol's Energy Ratio Using a Solid Oxide Fuel Cell**
Cameron Miller, ME
Mentor: Dr. Comas Haynes, GTRI/AERO-ATAS
- 38 Method of Excitation for Analysis of Surface Modes of Acoustic Guitars**
Stephen Welch, EE
Mentor: Dr. William Hunt, ECE
- 39 World Food Programme Supply Chain Optimization**
James Wade, ISYE
Santiago Aviles, ISYE
Elhadj Bah, ISYE
Manuel Jimenez, ISYE
Lawrence Li, ISYE
Mentor: Dr. Ozlem Ergun, ISYE
- 40 Using Predictive Graphical User Interface Elements to Improve Crane Operator Performance**
Se Joong Kang, ME
Mentor: Dr. Bill Singhose, ME
- 41 Molecular Dynamic Simulation of S-PEEK Membrane Fuel Cell**
William Mateker, MSE
Will Hardin, MSE
Mentor: Dr. Seung Soon Jang, MSE
- 42 pH-Responsive Layer-by-Layer Hydrogel Microcapsules as Gold Nanoreactors**
Rachel Muhlbauer, MSE
Mentor: Dr. Vladimir Tsukruk, MSE
- 43 Nanophosphor Gamma Ray Scintillators**
Brooke Barta, MSE
Mentor: Dr. Jason H. Nadler, GTRI/Electro optical sys labs
- 44 Nanogenerator from Piezoelectric Coated Carbon Nanotubes**
Celeste Mason, MSE
Mentor: Dr. David W. Stollberg, GTRI/Electrooptical Systems Labs
- 45 Carbon Nanotube Based Nanoelectrode Arrays**
Kirsten Kepple, BME
Mentor: Dr. Jud Ready, GTRI/MSE
- 46 Carbon Nanotube Based Microbattery**
Philippe Lacasse, CHBE
Mentor: Dr. Jud Ready, GTRI/MSE
- 47 Impregnating Exfoliated Graphite Nanoplatelets (xGnP) into Cellulose Fiber Webs for Enhanced Strength and Electrical Properties**
Sana Ali, ME
Mentor: Dr. Kyriaki Kalaitzidou, ME

College of Engineering, continued

- 48 Developments in Nanotechnology and the Status of Engineering Design Education**
Yasaman Nematbakhsh, ME
Mentor: Dr. Raghu Pucha, ME
- 49 Designing DNA Nanostructures Using Analytical and NanoCAD Tools**
John Semmens, ME
Mentor: Dr. Raghu Pucha, ME
- 50 Polymer Nanocomposites for the Automotive Industry**
Vanessa Tseng, ME
Chun Chu, ME
Kent Bartlett, ME
Ashley Stanford, ME
Mentor: Dr. Kyriaki Kalaitzidou, ME
- 51 Foaming Aligned Nanoparticle Composites Using Shape-Memory Polymer Epoxies**
Parth Brahmabhatt, ME
Mentor: Dr. Ken Gall, MSE
- 52 Inorganic Templating of Pollen Particles for Use as a Catalytic Material**
Adam Jakus, MSE
Allison Sanders, MSE
Neil Patel, MSE
Celeste Mason, MSE
Alex Soracco, MSE
Mentor: Dr. Zhong Lin Wang, MSE
- 53 Synthesis of Acrylate-Based Thermoset Foams with Tailorable Properties**
Amy Varallo, NRE
Mentor: Dr. Ken Gall, MSE
- 54 Quantitative Analysis of Wicking Behavior in Performance Textile Fabrics**
Robert Brinson, PTFE
Mentor: Dr. Haskell Beckham, PTFE
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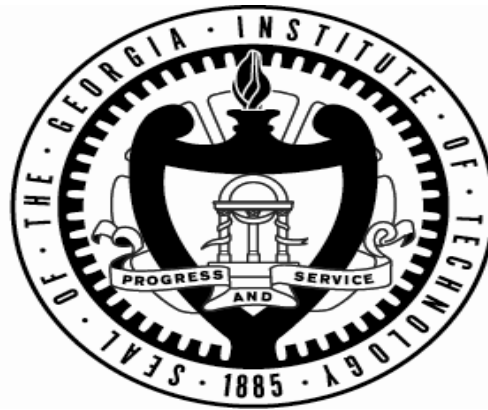
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