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Check Out  
UROP's  
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Symposium  
and  
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## 4th Annual UROP Symposium A Hit!

The Georgia Tech community gathered on April 1, 2009, to celebrate undergraduate research at the Institute. Participation in the event doubled over the previous year with over 110 poster and 45 oral presentation submissions! Students from a diverse range of disciplines at Georgia Tech presented results from their research ranging from technology and policy, nanotechnology and sensing, computer applications in music, psychology and building construction, and assistive technologies. Attendees may have viewed posters on the effects of aging on emotions, micro-needles and drug delivery,

particle mixing and fluid flow, shape memory polymers and foams, STEM education research, online gaming worlds, collaboration and citation tools, thermal protection systems, or stem cell research—just to name a few.

The annual event has become a true celebration of not only the accomplishments of our undergraduates, but a testimony of the time given by and talent of our faculty, post-doc, research scientist, and graduate student mentors. One student from the IAC shared that they greatly enjoyed not only sharing their own research, but being able to hear about the



“amazing projects” going on at Georgia Tech.

This year, attendees of the awards ceremony and reception were treated to a special visit from the new Georgia Tech President, Dr. Bud Peterson, and his wife Val. After visiting with several students at their posters, Dr. Peterson discussed the importance of research at Georgia Tech and helped hand out the poster and oral awards.

# Undergraduate Research News

## MSE Student Wins International Bodycote Competition



Dr. Rosario Gerhardt pictured with Ricky Whelchel who received the "Best Presentation" award at the 2008 Bodycote International competition.

Ricky Whelchel came to Georgia Tech in Fall 2004 and quickly distinguished himself academically maintaining nearly a 4.0 GPA all four years until his graduation in May 2008. In the fall

of 2006, Ricky joined the Gerhardt research group to assist then graduate student, V. Siva Kumar G. Kelekanjeri, with some sample polishing but was given the task to relate the samples' hardness to their corresponding electrical resistivity as an undergraduate research project. The materials being studied were a series of nickel base superalloys that are normally used in gas turbine engine components. These materials are known as precipitation hardened alloys because their mi-

crostructures consist of a dispersion of nanosize precipitates (referred to as gamma prime) dispersed inside mostly Ni-rich matrix grains. It is these precipitates that impart the high temperature strength to these alloys and their size and distribution can determine their mechanical properties during service.

Since one of the goals of Professor Gerhardt's research is to use electrically-based techniques as a non-destructive method for microstructural character-

ization, Ricky's undergraduate research project was to provide a very important link between the mechanical properties and the electrical response. Ricky's excellent progress on his research prompted Dr. Gerhardt to nominate him for participation in the 2008 Bodycote International Competition. His abstract was chosen as one of 25 semifinalists from around the world, after which he wrote a full length

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# PURA

President's Undergraduate Research Award

Fall 2009 Applications due May 18



Apply for competitive \$1,500 salary awards or up to \$1000 funding to present your work at a professional conference  
Visit <http://undergradresearch.gatech.edu/funding.php> for more information and application instructions.

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*Bodycote Competition..cont'd from page 2*


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paper. Shortly after he was informed that he had been chosen as one of seven finalists and he was the only US representative! Ricky delivered his presentation “Mechanical and Electrical Characterization in Age Hardened Waspaloy Microstructures,” in Manchester, England in April 2008 where he was awarded the best

presentation prize. He received a \$3000 stipend and a Bodycote trophy. His last undergraduate semester was funded by a Georgia Tech PURA award.

Ricky is continuing his research with Professor Gerhardt as a Ph.D. student funded by a U.S. Department of Energy grant.

He has made substantial progress on characterizing the size distribution of the gamma prime precipitates present in his alloys. To do that he is carrying out small angle scattering experiments at the Advanced Photon Source at Argonne National Labs, and at the HFIR Neutron Reactor at

Oak Ridge National Labs. We are proud of Ricky and look forward to watching his research progress in the coming years.

*Reprinted with permission from Georgia Tech's MSE News, Fall 2008.*

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## Presenting at the Spring Symposium *by Leslie Chan, BME*

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Last spring, my mentor emailed me about a presentation opportunity at the annual Georgia Tech UROP Spring Symposium. I was enthused about the prospect of presenting our research to other undergraduate researchers and faculty. It had been awhile since my last high school science fair and since then, I felt like I had entered the “major leagues” of research. My final year of high school marked the end to elementary projects on the effects of vitamin C on plant growth and the Pavlovian conditioning of goldfish. As a Georgia Tech

undergraduate researcher, I was now working with the formulation of nanoprobe that facilitated contrast-enhanced medical imaging of breast tumors and interrogation of tumor vasculature for nanochemotherapeutic prognoses—research that was beautiful in its intricacies and, more importantly, research that had practical application. I wanted to do our research justice and to prove to myself as well as others how much I had learned since I started researching. The UROP Spring Symposium was my opportunity to do just that. In a manner of speaking, it

served as a milestone in my young researching career.

During the week leading up to the symposium I went through my oral presentation countless times, making sure it was succinct and coherent. I relayed my presentation to my reflection, and when I desired a more lively audience, coerced my suitemates to sit through my practices. The most intimidating run-through occurred under the scrutiny of my mentor. The preparation process fired me up for the symposium. On the day of the symposium, I put on my lucky suit (which has yet to fail me) and walked to class.



That day there were only two things on my mind: my biomechanics quiz and the symposium. I don't remember how I did on the quiz that day, but the symposium I recall quite clearly. When it was my turn to present, the facilitator handed me a laser pointer which I was unsure I could use considering the slight shake in my hands. I began my talk, and to my relief the shake in my

# Undergraduate Research News

## Mentor Profile: Dr. Narayanan Komerath, AE



Dr. Narayanan Komerath is no stranger to working with undergraduate students. He started recruiting undergraduates to his lab in 1985 as an assistant professor, because “that was the only way to get someone trained in safety procedures and operation of lasers in time to make good progress in graduate school.” As a young faculty member just starting out, recruiting undergraduates was many times more successful than recruiting new graduate students from other universities. By recruiting undergraduates early, he was able to train them on the instruments and problems on which his lab was working – often convincing several to stay on for graduate school. In fact, between 1985 and 2000,

55% of students he mentored in undergraduate research continued in graduate school, either at Georgia Tech or elsewhere (1) Forty-two percent of his undergraduate students co-authored papers while working for the lab. (1)

Part of his success in working with students has been his willingness to consider the students part of the team from the first day. During a recent conversation Komerath mentioned that he never tried to convince students that undergraduate research was “for you to build experience” or “for you to see how great my field is,” but rather attempted to get them to see that they are valued team members. In other words, they are never research “assistants,” but rather always team members. Komerath admits that this atmosphere is largely due to the type of research being performed in his lab. There are usually no continuously working experiments where there are immediate oppor-

tunities for undergraduates to prepare samples or take data routinely for several weeks. Instead, the atmosphere is focused on learning “how to get this thing working” and involves what Komerath refers to as a lot of head-scratching. A stint at Boeing as a Welliver Fellow in 2004 reinforced the relevance of this approach to educate engineers for the top levels of the aerospace industry.

Komerath’s research has traditionally been in the area of experimental aerodynamics, having studied vortex flow aerodynamics in the Army Research Office Rotorcraft Center of Excellence at Georgia Tech since its inception in 1982. He has taught over 1,900 aerospace engineers in 21 different courses in aerodynamics, propulsion, gas dynamics, measurement techniques and flow control. He holds 3 US patents, has conducted over 70 sponsored projects, and published over 240 papers. Recently his work has turned to engineer-

ing education, space-based energy solutions, and other renewable energy options including solar, wind and biomass technologies. Ten of his students presented posters or orals presentations on experimental aerodynamics and renewal energy technology at last year’s Undergraduate Research Spring Symposium and Awards.

For additional information on Dr. Komerath’s research or to inquire about positions in his research group email Dr. Komerath at [narayanan.komerath@ae.gatech.edu](mailto:narayanan.komerath@ae.gatech.edu).

### References

1. Komerath, N.M., “Undergraduate Participation in the Experiments Aerodynamics Group” Paper 0480, Session 2526, Proceedings of the ASEE 2001 National Conference, Albuquerque, NM, June 2001

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### *Presenting at Spring Symposium...cont'd from page 3*

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voice eventually subsided. My fifteen minutes were up before I knew it. At the risk of sounding nerdy, they were the most exhilarating fifteen minutes of my semester. My mentor always emphasizes the story aspect of research. To relay your research in an appealing package, the audience has to understand the purpose of such research and what problems it could

potentially solve. At the symposium, I did my best to tell the story of our research. The opportunity to present was rewarding enough, but to my delight our presentation won first place.

The UROP Spring Symposium was a good opportunity for me to practice my communication skills. Results generated in the lab are

important, but for them to have any value they must be conveyed logically in writing or orally. The symposium reinforced this observation. That day, I was also able to learn of other ongoing Georgia Tech research projects. Producing something in the lab is rewarding. Sharing that product with others who are interested is even more

rewarding. Winning first place in the symposium gave me confidence that perhaps I might have a future in the field of research. In these respects, the symposium strengthened my ties to research. There is nothing to lose with participating in the symposium...only much to be gained.

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## **Six Students Represent GT at 2009 ACC Meeting of the Minds**

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Each April undergraduate students from the twelve universities composing the Atlantic Coast Conference (ACC) athletic association gather to present their research. This year, the fourth annual Meeting of the Minds conference was held at North Carolina State University (NCSU) in Raleigh, NC, April 2-4, 2009. Over 65 students from conference schools gave either poster or oral presentations on topics ranging from international relations and public policy to biological science to nursing to chemistry. Georgia

Tech was exceptionally well-represented this year by six students in varying fields of study:

- Elizabeth Fleming, AE (Mentor: Dr. Joseph Saleh, AE)
- Yue Geng, Chemistry (Mentor: Dr. David Sherrill, Chemistry)
- Steve Hsieh, Chemistry (Mentor: Dr. Raquel Lieberman, Chemistry)
- Paul Jurek, ME (Mentor: Dr. Bill Singhose, ME)
- Gabrielle Sirow, IE (Mentor: Dr. Ruth Uwaifo, Econ)
- Taylor Tomassi, MSE (Mentor: Dr. Valeria Milam, MSE)

During the two day event, students attended presentations and discussion sessions led by their peers from other universities. Students also enjoyed a luncheon poster session, a session on graduate school, and two plenary sessions. GT representative Gabby Sirow shared with the UROP office her experience at the conference: "I really enjoyed the ACC research conference because I was able to learn a lot about cutting-edge research being done by students in other fields. Even in technical fields like biochemistry and aero-



GT students enjoy dinner at the NC Museum of Art.

space engineering, all student presenters were able to explain their research in a way that everyone could understand."

NCSU hosted a Friday evening banquet at the North Carolina Museum of Art.

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# Undergraduate Research News

ACC Meeting of the Minds..cont'd from page 5



Gabby Sirow discusses the economics of farm subsidies in her presentation to the ACC attendees

Museum docents provided guided tours of the art collection and students enjoyed a nice meal overlooking the outdoor sculpture. The highlight of the evening was a presentation by NCSU faculty member Dr. Mary Schweitzer. Dr. Schweitzer, an associate professor in Marine,

Earth and Atmospheric Sciences shared recent results from her research on the soft tissues in T. Rex bones. Coordinator of the ACC Inter-institutional Academic Collaborative (ACCIAC), Dr. Dave Brown, Provost Emeritus of Wake Forest University, shared his thoughts on the importance of research with students, providing an inspirational message for the attendees. The conference concluded with a luncheon talk by NCSU professor, Dr. John Cavanaugh on his research in bacteria protection and antibiotic resistance.

Chemistry student Yue

Geng summed up her experience at the conference as follows, "The ACC Meeting of the Minds Conference is truly a multi-disciplinary gathering for undergraduate researchers: the breadth of topics ranged from humanities to science and engineering. I enjoyed meeting and learning from many enthusiastic peers and I was especially inspired by Professor Schweitzer, a paleontologist who studies soft tissues discovered in dinosaurs."

Funded by a portion of the revenue from the ACC football championship (and administered directly by the

presidents), the ACC IAC hosts the Meeting of the Minds annual undergraduate research conference and other programs to support academics at the constituent institutions.

Watch for additional details next year, as Georgia Tech hosts the 5th annual conference at the Global Learning Center!



MSE student Taylor Tomassi discusses her research with fellow conference attendees

## Elmore and Jakus Named Sigma Xi Undergrad Research Award Winners

Megan Elmore, CS, and Adam Jakus, MSE, have been named winners of the Best Undergraduate Research Award by the Georgia Tech chapter of Sigma Xi. The awards, given annually in the spring, honor outstanding undergraduate

research as evidenced by a thesis, written report, or published paper.

Elmore is recognized for her work in "Path Splicing" in which computers on a network are provided multiple paths through which to find and retrieve or send

information. Her work, under the mentorship of Dr. Nick Feamster in the COC, involved on simulations as part of the initial evaluation of path splicing.

Jakus's work centers on the modeling

and simulation of impact response of linear cellular alloys for structural energetic material applications. He has presented his work at several national meetings, winning several awards for best poster. Dr. Naresh Thadhani is his advisor.

## Eight Students Named Outstanding Undergraduate Researcher

The Outstanding Undergraduate Researcher Award honors individuals who have exemplified excellence in research while undergraduates at the Georgia Institute of Technology. Qualities honored include uniqueness of research, longevity of experience, contributions to the discipline, and presentations of work in multiple forums. The recipients of each award were selected by the administration of each college. Funding for the awards is provided by the Georgia Tech Research Corporation, the College of Engineering, and the College of Sciences.

### College of Architecture

#### Shannon Barnes, BC

**Mentor:** Dr. Daniel Castro-Lacouture, Asst. Professor, COA

**Project:** BIM-enabled Integrated Optimization Tool for LEED Decisions in A/E/C/IFM Projects.

Shannon's project focused on implementing and validating an integrated optimization model for LEED decisions that serves as a tool for materials, equipment and energy-efficient systems selection, satisfying both LEED criteria and economical feasibility. She co-authored a conference paper which was recently accepted and will be presented at the ASCE Interna-

tional Workshop on Computing in Civil Engineering, in Austin, Texas, this June.

### College of Computing

#### Megan Elmore, CS

**Mentor:** Dr. Nick Feamster, COC

**Project:** Path Splicing

The main idea behind Megan's project is to provide computers with multiple paths through the network through which to share information. As part of this project, Megan prepared a poster and short presentation and placed second overall in a college-wide undergraduate research competition. She also works as a TA in undergraduate lab classes, offers tours of the department to visitors, and plays an active role in computer science outreach organizations, such as the "Women@cc" (Women at College of Computing) group.

### Ivan Allen College of Liberal Arts

#### Carrie Freshour, HTS

**Mentor:** Dr. Bill Winders, HTS

**Project:** Being a 'Budgetarian': Shoppers, Stores, and Organic Foods  
Carrie Freshour is a senior History Technology and Society major in the Ivan Allen College. She has conducted two major

research projects with faculty in HTS. Her most recent research project demonstrates her strong aptitude in statistics and historical research as well as original interviews. She presented each of her papers at the Southeastern Undergraduate Sociological Symposium in late February.

### College of Engineering (3 awards)

#### Elizabeth Fleming, AE

**Mentor:** Dr. Joseph Saleh, AE

**Project:** Response Surface Equations for Expendable Launch Vehicle Planning

Elizabeth is developing response surface equations (RSE) for expendable launch vehicle (ELV) payload capability statistically analyzing actual launch vehicle payload planner's guides. The results should be particularly useful for DARPA's F6 fractionalized spacecraft program. Elizabeth will be presenting her research at AIAA Space 2009 conference this year.

#### Ho Ming ('Gabriel') Tong, CHBE

**Mentor:** Dr. Sankar Nair, CHBE



**Project:** Materials synthesis and characterization of metal oxide nanotube materials

Gabriel's project was to master the synthesis of the nanotubes, and then to carefully measure their water absorption properties. He was able to successfully synthesize high-quality nanotube samples in quantities sufficient for the measurements. The quality and significance of his results allowed their inclusion in the research group's paper in the *Journal of Physical Chemistry*.

#### Scott Seaman, BME

**Mentor:** Dr. Todd McDevitt, BME

**Project:** Controllable Incorporation of Biodegradable Polymer Microspheres within Embryoid Bodies

Scott has been working with graduate student Rich Carpenedo to characterize the effects of different size microparticles on embryonic stem cell differentiation. This

# Undergraduate Research News

## Zhang and Ready Named Outstanding Undergrad Research Mentors



Dr. Han Zhang, COM

Congratulations to Dr. Han Zhang, COM, and Dr. Jud Ready, GTRI, who were honored at this spring's faculty and staff honors banquet as recipients of this year's Outstanding Undergraduate Research Mentor Awards. Both were chosen by the faculty honors committee for their leadership and dedication.

Zhang is the Helen and John Taylor Rhett, Jr. Associate Professor and the Area Coordinator of Information Technology Management in Georgia Tech's College of Management. He has mentored 13 undergraduates through the President's Undergraduate Research Award (PURA) and 6 through research coursework. Zhang was cited as often creating teams of undergraduate, MBA, and Ph.D. students to



Dr. Jud Ready, GTRI

expose undergraduates to higher-level research earlier in their career and encouraging undergraduates to think independently. His students are known for significant contributions to the research being completed. One student mentioned that his research with Dr. Zhang was "one of the most insightful, challenging, and beneficial experiences I was able to have during my time at Georgia Tech." Zhang also serves as a member of the Review Advisory Board for *The Tower*, Georgia Tech's Undergraduate Research Journal.

The faculty honors committee recognizes Zhang for his leadership in the College of Management in undergraduate research. He will be awarded the senior faculty

award which is accompanied by an honorarium funded by the Georgia Tech Research Corporation.

Ready is a Senior Research Engineer in the Georgia Tech Research Institute's Electro-Optical Systems Laboratory and an adjunct professor in Materials Science and Engineering. He has created a laboratory structure in which undergraduates play a primary role in the research and manages to recruit many students from multiple disciplines to join him in his work. Student Phil Lacasse mentioned that Ready "continuously challenged my abilities and how I thought about my research."

Since beginning at Tech in 2003, Ready has mentored over 27 undergraduate students. Many are co-authors on peer-reviewed publications and most have presented at major professional conferences. Visit his lab's website and you'll readily see the role the students take in the research program. Ready also serves on the Undergraduate Research Advisory Group

(URAG).

Ready is honored with a newly created award for junior faculty who mentor undergraduate researchers. Members of the faculty honors committee noted last year that the Undergraduate Research Mentor award has become the award for which most nominations are received annually. All nominees have shown great excellence and consistency in their mentoring activities. The new award was established to recognize the outstanding contributions made by younger, newer faculty at Georgia Tech in the mentoring of undergraduate researchers. The committee hopes that this award will be funded equally well in future years.



Members of the Ready research group at GTRI



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### Outstanding UG Researcher ..cont'd from page 7

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multidisciplinary project relies upon the integration of fundamental principles of biomaterials with stem cell culture and differentiation, thus it requires sufficient capability and expertise in both arenas. The results Scott generated contributed directly to a recent publication in *Biomaterials* (the highest impact factor journal in the field), and he is currently putting the finishing touches on another manuscript on which he will be first author.

#### College of Sciences (2 awards)

**Krista Lim-Hing, BIO**

**Mentor:** Dr. Julia Kubanek, BIO

**Project:** Nuclear Magnetic Resonance Based Whale Shark Metabolomics

Krista's project uses spectroscopic and statistical techniques to pinpoint health markers for whale sharks at the Georgia Aquarium. Working with dozens of blood samples from six sharks taken over a period of years, she has identified metabolites (naturally-produced shark chemicals) that vary among these individuals and that may be able to be used in the future at biomarkers to predict downturns in shark health. This project is com-

pletely novel because there is no literature on the metabolism of whale sharks, and very little on sharks in general. Krista continued her project last fall as part of the Honors Research Thesis, and completed the "Research Option" this spring.

**Hussein Sayani, EAS**

**Mentor:** Dr. Kim Cobb, EAS

**Project:** Early Diagenesis of Underwater and Subaerially-exposed Fossil Coral Skeletons: Morphology and Geochemistry

Sayani has combined SEM photos with careful geochemical investigations to produce

a truly unique dataset that will be of broad interest to paleo-climatologists. He has single-handedly forged key relationships with GTRC staff, and has assisted graduate students along with visiting scientists in making these key SEM photos for their research. He is a co-author on a paper, and is working on a first-author manuscript to be submitted before he graduates in May.

Congratulations to our 2009 awardees and their mentors!

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### UROP Symposium A Hit ..cont'd from page 1

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Awards were also given out to the Outstanding Undergraduate Researchers in the colleges, as chosen by the colleges.

The UROP office thanks the volunteers from across campus for their help at the event. In addition to the UROP staff, more than 100

faculty and graduate student judges, staff from various administrative units on campus, student volunteers, and student center staff were involved throughout the day. Thanks also go to the event's sponsors – the Georgia Tech Research Corporation, the Georgia Tech Foundation,

and the Institute's Quality Enhancement Plan.

A photo spread and list of awardees can be found in this copy of the newsletter on pages 10-11. A copy of the program and information on the awards given can be found at: <http://www.undergradresearch.gatech.edu/>

[SpringSymposium.php](http://SpringSymposium.php).

Watch for details on next year's event this fall!

# Undergraduate Research News

## 2009 Undergraduate Spring Symposium & Awards Photo Gallery



# Undergraduate Research Spring Symposium & Awards

## April 1, 2009

### Outstanding Oral Presentations

#### College of Architecture

Shannon Barnes, BC, *BIM-enabled Integrated Optimization Tool for LEED Decisions*

#### College of Computing

Andrew Bardagjy, EE, *Monitoring Mating Mosquitoes Malaria: 3D Tracking w/4D Light Fields*

#### College of Engineering

Benjamin Emerson, AE, *Laser Doppler Velocimetry and CH\* Chemiluminescence of a Low Swirl Burner*

#### Ivan Allen College

Tobias Tatum, PUBP, *Technology to Policy: A Case Study in Biofortification*

#### College of Sciences

Kevin Hardin, CHEM, *The Mechanism of Proteoglycan Membrane Anchorage Affects the Endocytic Pathway of Cellular Cargo*

### Outstanding Undergraduate Researcher Awards

College of Architecture - Shannon Barnes, BC

College of Computing - Megan Elmore, CS

Ivan Allen College - Carrie Freshour, HTS

College of Engineering - Elizabeth Fleming, AE

Ho Ming (Gabriel) Tong, CHBE

Scott Seaman, BME

College of Sciences - Krista Lim-Hing, BIO

Hussein Sayani, EAS

### Poster Session - Outstanding Posters

#### College of Engineering

##### 1st Place (tie)

- Agatha Kwasnik, BME, *Evaluation of Thermomechanical Properties of Fiber Reinforced Shape-memory Polymer Systems*
- Alexander Roan, ME; Jose Antezana, ME & Juan Pedroza, AE  
*Turbulent Flame Speeds of H<sub>2</sub>/CO Blends*

##### 2nd Place (tie)

- Shweta Natarajan, ME, *Flame Response of Swirl Premix Flames to Transverse Acoustic Excitation*
- Adam Jakus, MSE; Allison Sanders, MSE; Neil Patel, MSE; Celeste Mason, MSE & Alex Soracco, MSE, *Inorganic Templating of Pollen Particles For Use As a Catalytic Material*
- Hyunwoong Lee, CHBE, *Automation of Particle Tracking Technology*

##### 3rd Place (tie)

- Kirsten Kepple, BME, *Carbon Nanotube Based Nanoelectrode Arrays*
- Philippe Lacasse, CHBE, *Carbon Nantube Based Microbattery*

#### Ivan Allen College

Kady Rosier, CM, *Gendered Play in Online Worlds*

#### College of Computing

Daniel Gifford, CS, *The Effects of Mobility on Mobile Text Input*

#### College of Sciences

Krista Lim-Hing, BIO, *Nuclear Magnetic Resonance Based Whale Shark Metabolomics*





Undergraduate Research Opportunities  
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[www.undergradresearch.gatech.edu](http://www.undergradresearch.gatech.edu)

## Undergraduate Research Opportunities Program (UROP)

### News from the Director

Congratulations go out to the over 160 students who participated in this year's UROP Spring Symposium on April 1st! The event is held annually to provide not only a venue for students to present their work, but also an opportunity to celebrate undergraduate research at Georgia Tech. Each year the quality of the presentations and posters improves and more and more students are able to share their work with the Georgia Tech community. Thanks go out to many individuals on campus including our students and their mentors, over 100 faculty, post-doc, and graduate student judges, session moderators, check-in table and setup volunteers, the Student Advisory Board for Undergraduate Research (SABUR), among others. We truly appreciate the teamwork across campus that allowed us to host such a successful event. In particular, I'd like to give a special thank you to Ms. Fadrika Prather, UROP's project coordinator, and Ms. Savannah Gowdy, Ms. Lee Goetz, and Michael Hutsel, UROP's student assistants for their tireless efforts in support of the event. Great job!

Also included in the newsletter is an update on this year's ACC undergraduate research conference held in Raleigh, NC, and announcements of our Outstanding Faculty Mentor Awardees and the Sigma Xi undergraduate research awards.

I am also happy to report that enrollment in undergraduate research courses has increased by 18% over the last year to 2146 students! Thank you to our faculty, post-doc and graduate student mentors for their efforts in supporting the work of these undergraduates.

We encourage each of you to become involved in undergraduate research—either as a student researcher or mentor—if you are not already. Contact our office for additional information on how to become involved, support for research, and information on collaborations.

Enjoy your summer!

Best,  
Karen Harwell

## Let Your Voice Be Heard!!



### Student Advisory Board for Undergraduate Research (SABUR)

The Student Advisory Board for Undergraduate Research (SABUR) works toward implementing new ideas for programs and resources for students interested in research. If you're interested in serving on this board, please email the Chair, Savannah Gowdy at [gt.sabur@gmail.com](mailto:gt.sabur@gmail.com). *Freshman, sophomores, and juniors are particularly encouraged to become involved!*

### WE WANT TO HEAR FROM YOU!!!!

#### UROP Facebook Page

Interested in hearing more about upcoming Undergraduate Research events, news, funding, etc? Then join the GT Undergraduate Research Opportunities Program (UROP) Group on Facebook.

#### Listserv

To receive information and announcements from Georgia Tech's Undergraduate Research Opportunities Program (UROP), join the [urop-news](mailto:urop-news@listserv.gatech.edu) listserv. To join: Send an e-mail to [sympa@lists.gatech.edu](mailto:sympa@lists.gatech.edu) with a subject of "subscribe urop-news".