Eleven Students Represent Tech at Meeting of the Minds Conference

What do ACC football, a circus, and Bucky balls have in common? Undergraduate Research, of course. Or at least the Atlantic Coast Conference (ACC) 3rd annual Meeting of the Minds Conference hosted by Florida State University (FSU). Three years ago, the Presidents of the constituent ACC schools decided to fund several special academic programs with proceeds from the annual football championship game. One of those funded programs is the annual Meeting of the Minds Undergraduate Research Conference. Eleven students were selected to represent Georgia Tech at this year’s conference held April 18-19, 2008. Student participants included:

- Lindsay Chatel, STAC
- Aneese F. Chaudhry, Chemistry
- Luke Hiatt, BME
- Jina Kang, ChBE
- Martha Lesniewski, MSE
- Amanda Meng, GEML
- James Quintrell & Merritt Pearson, ME
- Sydney M. Shaffer, ChBE
- Stuart Terrett, Chem/ChBE
- Jenifer Vandagriff, LCC

During the conference, over 100 students from all disciplines presented research worked and met to discuss their projects. Both oral and poster presentations were made. STAC major, Lindsay Chatel summed up the conference as follows, “This was a great opportunity to display my research. In addition to the exhilaration of sharing my passion with other undergraduate students, meeting and getting to know the other students made this weekend unforgettable. It was amazing to be in the midst of such expressive enthusiasm and dedication.”

Additionally, students were treated to other events as described by sophomore Martha Lesniewski, “FSU was a great host, treating us to a reception at the President’s House; a luncheon

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Chanchala Kaddi is a senior in the biomedical engineering department. She has researched with Dr. May Wang since her sophomore year at Tech. During this time she has worked on two major projects, titled “Developing Selection Guidelines for Systems Biology Modeling Algorithms” and “User-centric investigation of bio-models. In Dr. Wang’s Systems Biology Modeling lab, Chanchala works with emergent properties of systems and interactions between biological systems. Since grade school biology research has been her dream and passion; so when she entered Georgia Tech her involvement in BME research was inevitable. She contacted several professors who had projects that interested her. In the two years she has worked in the systems modeling lab, Chanchala has published 2 peer-reviewed articles in major technical conferences in bioengineering and bioinformatics and her most recent journal draft is under review. She has made 2 oral presentations in another major Biomedical Engineering annual meeting (BMES). In addition, she has received the best poster award in 2007 Frontier in Cancer Nanotechnology Symposium, and best oral presentation in 2007 Georgia Tech Undergrad Research Symposium. You could say she is a pro, but it is not easy; she says “my most valuable lesson... to be persistent and never give up;”

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2008 Spring Research Option Graduates

Congratulations to the Spring 2008 graduates of the Research Option program!

- Bath-Ammi Garcia, Psych
- Betsy Gooch, STAC
- Sundeep Jolly, ECE
- Dianne Palladino, Psych
- Trang Thai, ECE
- Ryan Bloomquist, Biol
- Kaylee Burnham, Psych
- Laura Carter, Psych
- Aneese Chaudhry, Chem
- Paul Curt, BME
- Nicole Fay, Biol
- Brendan Finton, Psych
- Katherine Gasaway, Psych
- Catherine Gay, Psych
- Stefka Gyoneva, Biol
- Alistair Jones, CS
- Yue Liang, Chem
- Zachary Morford, Psych
- Charles Reiss, CS
- Nathaniel Rice, Psych
- Christopher Ryan, Psych
- Andrew Seltzman, Phys
- Daniel Shorr, Psych
- Stuart Terrett, Chem
- Natalie Turbiville, HTS
- Christina Wilson, Biol
- Jason Xenakis, BME

There are several benefits of participating in the Research Option such as special designation on your transcript, one-on-one research with Georgia Tech faculty, and a contribution to new knowledge in your field. Currently, the Research Option is available in 16 schools. These schools include Computer Science, Aerospace, Biomedical, Chemical & Biomolecular, Civil and Environmental, Electrical and Computer, Materials Science, Biology, Chemistry/Biochemistry, Earth and Atmospheric Sciences, Mathematics, Physics, Psychology, Computational Media, History, Technology & Society, and Society, Technology & Culture.

To learn more about the Research Option and how you can participate, please visit http://www.undergradresearch.gatech.edu/research_option/index.php.

Faculty Interview: Dr. Michelle Dion, INTA

**U/G Research: How did you become involved as a mentor to undergraduate researchers?**

**MD:** The students who have worked with me found me in one of two ways. Some were students in my class who demonstrated research potential and enthusiasm for the subject material. During the class, I asked them if they were interested in participating in research. Other students found me after I gave a talk to IASO, the INTA student organization, about how to make the most of your undergraduate experience in INTA. I explained how students interested in working on faculty research should go about approaching faculty to find out about opportunities.

**U/G Research: What types of projects have you mentored? How do you utilize undergraduate students in your research?**

**MD:** Over the years, my seven PURA students worked on different types of projects, depending on their skills and interests. Usually, I would describe 2-3 projects that I was currently working on and the type of work that they would do for each. Then, we consider their skills, such as their Spanish or statistical methods proficiency, and their interest in the topics of the different projects. My students have worked on different stages of my different research.

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Meeting of the Minds Conference ...cont’d from page 1

with Sir Harold Kroto, Nobel Prize Winner for the creation of Bucky balls; and a performance by the school’s [student] circus. These unique opportunities greatly enhanced the interdisciplinary nature of the conference. One of my favorite parts of the conference had nothing to do with the presentations. We had the opportunity to watch a premiere of a film student’s work, learn about FSU’s film school, and discuss the creative process. It was fascinating.”

Next year’s conference will be held April 2-4, 2009, at North Carolina State University (NCSU) in Raleigh, NC. Watch the UROP website in January for additional details on how to apply to represent Georgia Tech.

Student Profile: Jason Taylor, CS
by Savannah Gowdy

Going through college many students are unsure about their chosen path of studies. Some might wonder, “what happens if I finish Tech and don’t like what I am doing, what then?” Well, just ask 29 year old Computer Science major, Jason Taylor. Jason is working on his second bachelor degree (the first being mechanical engineering received four years ago). His CS degree involves the intelligence and people thread which encompass AI (Artificial Intelligence) and interfaces. His research is in the area of cognitive science. He chose to come back and get a CS degree because he “wanted to be on the cutting edge and have an opportunity to contribute new knowledge”. His current research project is “Self-Adaptive game play agents” where he helps make AI opponents who play games more intelligently and learn rules as they are applied. He came back to Tech planning on going to graduate school and therefore knew that he needed some research experience under his belt. Dr. Ashok Goel, Jason’s mentor, has played a huge role in Jason’s development as a researcher allowing him to be flexible about scheduling as well as being very approachable. His work is comprised of coding and discussion session: “Theoretical discussions are the most interesting and are useful in enhancing the learning experience; [you can] ponder deeper implications and then the rest is coding”. He believes research has been his most rewarding learning experience and that through it he has been able to attain knowledge that would not have been available elsewhere. “[In research you are] required to earn a lot of technical depth, most undergrads do not need to understand the material in such detail; it’s definitely an advantage”. According to Jason, the best part of research is getting to see the results of his work come together. He urges undergrads to get involved in research even if it is just for a semester. He currently is working on several publications and has been accepted into a PhD program at Northwestern University in Chicago, IL. His work there will be in the same area, cognitive science. He hopes after finishing is formal education to be a tenured professor at a top tier research institute.

Georgia Tech students talk with Nobel Prize winner Sir Kroto after his luncheon speech.
projects: from putting together an extensive annotated bibliography on existing research to data collection on social policy or Mexican politics to helping organize and analyze the data once it has been collected. U/G Research: What are the benefits of faculty mentoring undergraduates in research? Not only do professors get help gathering or analyzing data for their research, but they also get the opportunity to see their work through new eyes. The process of teaching a young researcher how to go about the day-to-day research work often reminds me to pay closer attention to the subtle steps or procedures that I usually take for granted. Students asking questions about how to carry out the research make me think more carefully about the process. U/G Research: Why is undergraduate research important? Undergraduate research is important for at least two reasons. First, it gives students the opportunity to learn about an area in their field in much more depth than they would in class. Classes, even advanced classes in a major, may provide an introduction to research you must be flexible, put in the extra effort, and stick with it for the long haul. She plans to continue working in Dr. Wang’s lab in the spring of 2009 as a graduate student. After receiving her graduate degree, she would not mind working in academia or industry depending on her industry. Other than researching, she enjoys playing the piano and initiated class of Georgia Tech’s Alpha Omega Epsilon, the premier engineering sorority on campus.
This spring was my fourth semester doing geo-systems research in the civil engineering department. I have had one paper published, but had never presented my work. Not being a public speaker, the idea was somewhat unnerving, but it was something that as a young researcher I knew I should learn. The Undergraduate Research Spring Symposium was just the thing I needed.

The Undergraduate Research Spring Symposium was an annual event hosted by the Undergraduate Research Opportunities Program (UROP) in order to allow undergrads to present their research through a poster or an oral presentation. It is a great experience for undergrads because they get to share their research with other students and faculty on campus as well as learn about others’ research in an informal atmosphere. Students can also gain valuable skills and experience through presenting their work in an informal environment. After submitting my work, I began to think… ‘Now what do I do?’ I had been accepted to present a poster at the Symposium, and I had a feeling this wasn’t like the project posters I had previously done. I attended UROP’s poster presentation information session led by Dr. Lisa Rosenstein of the civil engineering department. The session was amazing.

Not only did it show me what an award winning poster should look like, it gave me a sort of outline/method which I could use to format my own poster into a representation of my work.

April 3rd finally arrived and it was time to present at the poster session. It was held in the student center ballroom. Over 100 students and their research were represented in neat rows throughout the ballroom. I had prepared the poster with an outline of my work and then used a summary paper I had written to prepare what I would talk to people about. However, never having done something like this, I was unsure of how things would unfold. As my first visitor approached I greeted them with a smile and before I knew it we were into a deep conversation about plasticity indexes and my clay mixtures properties.

The hour of discussion and poster viewing was over and after talking to several different groups of people, I realized that not only did I feel comfortable discussing my results with faculty and students, I actually understood material that I had spent months learning and deciphering better. Having to explain my work to people who had never had any sort of training in my area made me think about my research in different ways and taught me a thing or two. Given the chance, I would definitely present at next year’s Undergraduate Research Spring Symposium. I also encourage any undergrad at any phase of their research in any major to come out and join me. It is an experience you will never forget!
Undergraduate Research Spring Symposium & Awards
April 3, 2008

Outstanding Oral Presentations

**College of Computing**
James Robinson, COC, MANET routing: Manifolds and the WDL

**College of Engineering**
Leslie Chan, BME, Nanoscale Imaging Probes for Personalized Medicine

**Ivan Allen College**
Lindsey Chatel, LCC/STAC, Assistive Technology: The Application and Rhetoric of Cochlear Implants

**College of Sciences**
Nicole Fay, Biology/Biochemistry, Visualizing Transcytosis via a FRET-based Low-Density Lipoprotein Probe

Outstanding Undergraduate Researcher Awards

**College of Architecture** -- Steven Hensey, Architecture
**College of Computing** – David Rutter, COC
**College of Engineering** – Chanchala Kaddi, BME
**College of Engineering** – Matthew McDowell, MSE
**College of Management** – Devesh Jain, Management
**College of Sciences** – Nicole Fay, Bio-chemistry/Biology
**Ivan Allen College** – Stephen Brinks, HTS

Poster Session – Outstanding Posters

**College of Engineering**
1st place (tie)
Jeffrey Clement, ME, The Effect of Robust Input Shapers on Bridge Crane Operator Performance

1st place (tie)
Philippe Lacasse, CHBE, Growth of Multi-walled Carbon Nanotubes on Carbon Fabric

**College of Engineering**
2nd place
Cintia Nojima, CHBE, Effects of Composite on the Mechanism of Formulation of Single-Walled Mixed-Oxide Nanotubes: A Dynamic Light Scattering Study

3rd place
Ramya Parthasarathy, BME & Roy Rusly, BME, Modeling and Assessment of Congenital Bicuspid Aortic Valve Fluid Dynamics

**Ivan Allen College**
Naihobe Gonzalez, EIA, University Education Expansion in Venezuela and Labor Market Outcomes: What Can We Learn from the Data

**College of Sciences**
Stefka Gyoneva, Biology, [PSI+] Prion Transmission Within the Yeast Saccharomyces Genera

Congratulations To All Of Our Awardees!!!
News from the Director

I can't believe that it's already the end of Spring 2008 semester! It has been a busy one in undergraduate research. Congratulations go our to the over 100 students who participated in this year's UROP Spring Symposium on April 3rd. 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, faculty and graduate student judges, session moderators, check-in table and setup volunteers, the Student Advisory Board for Undergraduate Research (SABUR), among others. In particular, I'd like to give a special thank you to Ms. Fadrika Prather, UROP's project coordinator, and Ms. Savannah Gowdy, UROP's student assistant, for their tireless efforts in preparing for the event. We truly appreciate all the teamwork across campus that allowed us to host such a successful event. I encourage each of you to visit the UROP website for a list of winners of the poster and oral presentations and our Outstanding Undergraduate Researchers from each college.

I'd also like to congratulate our twenty-seven Research Option graduates from nine schools and the eleven students who represented Georgia Tech at this year's annual ACC undergraduate research conference. Both are highlighted in this issue of the newsletter. We encourage each of you to become involved in undergraduate research if you are not already. Contact our office for additional information on how to become involved.

Enjoy your summer!

Best,
Karen Harwell

Let Your Voice Be Heard!!

The newly formed 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 contact Dr. Karen Harwell, Director, Undergraduate Research at Karen.harwell@carnegie.gatech.edu. Freshman, sophomores, and juniors are particularly encouraged to become involved!

WE WANT TO HEAR FROM YOU!!!

We are always looking for subject matter for our newsletter, including suggestions of students and faculty to profile and good news to share about student achievements, publications, and presentations. If you are interested in writing for the newsletter or have suggestions for future profiles, please contact us at urop@gatech.edu.

Listserv

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