ORSP Scholars Receive PURA Grants

In October 2008, Jill Auerbach, ORSP Program Director, offered a workshop focusing on grant proposal preparation for the President’s Undergraduate Research Award (PURA). Following the workshop six ORS Program Scholars applied for a Spring 2009 PURA grant. The award notification date arrived and hopes of having all six students receive the award were realized! ORSP Scholars Geller Bedoya (State of GA), Michael Digman (NSF), Santiago Hassig (Intel), Gita Mahmoudabadi (Rockwell Automation), Rodrigo Quinteros (Intel), and Sean Sanders (State of GA) are the proud recipients of the President’s Undergraduate Research Award (PURA) for Spring Semester 2009. Congratulations!

PURA is a competitive fund that supports the involvement of undergraduate students in faculty research. Students may apply each semester by the designated deadline for a future semester award. ORSP Scholars interested in applying for a Summer 2009 PURA award attended the Tuesday, February 17 offering of the proposal prep workshop. Scholars applying for a Summer PURA award must do so by Wednesday, March 4.

Seasoned Mentors Discuss Progress

The Mentors in the Opportunity Research Scholars Program are a vital component to its success. Their dedication to research and to their Scholars is a driving force that challenges our Scholars to achieve extraordinary accomplishments.

Each year the program Mentors gather to discuss the progress of their research groups and mentor each other by providing feedback to one another. This year Mentors met on January 27. Seasoned Mentors Kevin Fairbanks, Stefan Grubic, Lorne Liechty, Ibrahima Ndiour, Lonnie Parker, Ryan Pirkl, and Matt Trotter attended. The discussion focused on the progress of research projects and strategies to help groups meet the goals identified in their research abstracts. Mentors also talked about balancing mentor roles — student, researcher, tutor, and advisor.

Research groups are now in the process of polishing the research abstracts and updating time-lines in preparation for the poster competition that will take place April thirteenth.

ORSP Scholar Volunteers for First Lego League

Nicole Rennalls, Scholar for the Intel sponsored Electric Power Group I, volunteered during the First Lego League competition held at Georgia Tech on Saturday, January 31. First Lego League is an international lego robotics competition for middle school students.

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Important Dates:

- Wednesday, March 4 Deadline to apply for a Summer PURA Grant
- Tuesday, March 10, 11AM Poster Workshop
- Tuesday, March 24, 11AM Research Presentation Workshop
- Monday, March 30 Research Posters Due
- Monday, April 13 ORSP Poster Competition and Banquet
- Monday, May 18 Deadline to apply for a Fall 2009 PURA Grant
Company Sponsorship Allows For Growth

Thanks to company sponsors, The Intel Corporation, Rockwell Automation, and Rockwell Collins, the ORS Program has grown! On Thursday, February 5 a New Mentor/Scholar Luncheon was held to welcome several new members into the ORS Program.

Group members added in November, Amin Rida, (Mentor), Jeremy Jones, Asma Qureshi, Trevale Reynolds, and Edward Tan (Scholars) attended as well as Debrup Das (Mentor). Alvin Chou, Washim Mohammed, Sharan Parikh, David Saenz Landazabal, and Jeremy Thompson (Scholars) who joined the ORS Program in January.

Seasoned Scholars Seema Bhandari, Courtney Drewski, Jeff Lumish, and Rodrigo Quinteros were on hand to meet new Scholars and share their experiences. Jill Auerbach, ORS Program Director, initiated introductions and talked further about program benefits and expectations.

WELCOME ABOARD to our new ORS Program members! We look forward to watching your progress.

Constance Brown, a Sophomore CMPE major and Pujita Vijayvargiya, a Freshman EE major both joined the existing Microwave Research Group under the mentorship of Matt Trotter. Dr. Tom Michaels is their Faculty Advisor.

Alvin Chou is a Sophomore EE major. Alvin is working with the existing Propagation Group II. Lorne Liechty is the Mentor and the Faculty Advisor is Dr. Greg Durgin.

Debrup Das, PhD Mentor, EE Sophomore, Washim Mohamme and EE Junior David Saenz Landazabal make up the new Electric Power Group. Dr. Deepak Divan is the Faculty Advisor.

The newest member of the existing Electric Power Group is Sharath Parikh, a Sophomore EE major. The group is mentored by Stefan Grubic and the Faculty Advisor is Dr. Tom Habeder.

The Tongue Driver Group, mentored by Xueliang Huo, has added Jeremy Thompson, a CMPE major Junior. Dr. Maysam Ghovanloo is the Faculty Advisor.

Graduate School — Decisions, Preparation, Options

Dr. Bonnie Ferri, Associate Chair of Graduate Affairs, presented a workshop focusing on preparing to attend graduate school to ORS Program Scholars on Tuesday, February 10. A panel of ORS Program PhD Mentors, Lonnie Parker, Ryan Pirkl, and Amin Rida, added to the discussion points by sharing their experiences.

The Scholars received helpful information and advice from Dr. Ferri about reasons to pursue a graduate degree, career benefits and options, what to do as an undergraduate student to prepare for graduate school admission, what the requirements are to complete a graduate degree, and how to get the most out of their undergraduate research experience as preparation for graduate school.

“The MS is fast turning into the standard degree for engineering,” said Dr. Ferri, and the PhD “differentiates you from your co-workers, provides for choice assignments, more work-hour flexibility and higher compensation, and gives one the option of going into teaching or industry.”

Each Mentor on the panel told the story of their personal path to applying and preparing for graduate school, shared what influenced their decisions, and described (as an undergraduate student) what was most helpful to them.

Although the road to one’s decision to attend graduate school is never a carbon copy of someone else’s, the general theme of advice to the Scholars from the PhD Mentors was to “talk to people.”

Lonnie Parker, Mentor to the Human-Automation Systems Lab, advised the Scholars to “get their questions answered.” He said “talk to people a lot. Nobody will give you the answer, but all the different responses will help you shape your perspective to help you come to a decision.”

Amin Rida, when speaking about his first experience presenting at a conference, said “During that time it helped to talk to the session chairs who assisted me with presentation details.” Ryan Pirkl, Mentor for the Propagation Group I, said “Doing undergraduate research was the most helpful experience for preparing me for graduate school. It not only helped me gain an understanding of what ‘research’ is, but it also gave me the opportunity to interact with graduate students. Talking to them about their experiences helped to clarify my own perceptions of what life in graduate school is like.”

All three workshop panel members lead research groups that are sponsored by the Intel Corporation.

Thank you Dr. Ferri and panel members for sharing your insight!
Research Groups In The Spotlight

Rockwell Automation Sponsored Microwave Research Group

Meet the Rockwell Automation sponsored Microwave Research Group, Matt Trotter, Mentor, and Constance Brown, Felipe Salazar, and Pujita Vijayaragiya, Scholars. Their faculty advisor is Dr. Tom Michaels.

Tell us what the Microwave Group’s project is about.
Matt
“I am mentoring students who are researching microwave non-destructive evaluation. They are studying all the different ways of finding defects in various materials such as cement columns, ceramic blocks, or even large carpeting rolls without destroying the material.”

Tell us a little about your background and why you chose engineering.
Matt
“I am a PhD student from Texas. I got into EE in my high school physics’ class. Electromagnetics is an interesting subject to me and it is part of my current research. I chose Georgia Tech because it was a good school with lots of industry connections and research funding. I also love the weather. I love to play basketball, travel, and play video games.”

Constance
“I’m from Savannah, GA. I was lucky enough that my school was specialized for engineering, so I was exposed to all sorts of things that I normally wouldn’t have been like AutoCAD tools, programming, etc. However, I knew that I was going into technology after participating in the robotics club at my school. I decided on Computer Engineering because it didn’t make me choose between hardware and software.”

Felipe
“I’m a Colombian born Computer Engineering major at Tech. My journey for knowledge began when I was 13 years old, more specifically, when I began to read a Visual Basic 6 book that my brother had bought for one of his college classes. At that point, I submerged into the vast realm of computing. After being familiarized with the fundamental concepts of programming, I exhaustively read articles and tutorials online, bought books, etc. But I wasn’t just into programming. The hardware aspect amazed me more than anything else, however it was much more difficult to experiment with since you’d actually need the hardware; yet I tried to understand it by reading. Now that I’m at Tech, however, every homework quiz, and lecture feeds me bits of that knowledge I long to obtain. The quality of the professors is amazing. I couldn’t be anywhere else.”

Pujita
“I am from India and I have been living in Kuwait since the past 9 years. I finished my high school in Kuwait. I developed an interest in Electrical Engineering during my high school itself. I always used to look forward to my physics and math classes and due to my interest in them I developed a firm grasp over important topics. I chose Georgia Tech due to its intensive program for electrical engineering and the vast range of opportunity it provides to its student — research facilities for example.”

Why did you decide to participate in the ORS Program?
Matt
“I got into ORS because I like to mentor. I’ve had good experiences with mentoring, and I will continue to do it. I think ORS is great because it allows undergrad students an opportunity to get face time with people in the research field. It also helps them determine if they want to start a career in research.”

Constance
“ORS was introduced to me by a fellow classmate. She seemed to enjoy it and I never thought that I would have a chance to research. This program has given me the best opportunity I’ve ever had.”

Felipe
“I began reading about grad school, and what was recommended in order to be accepted. Research was always considered to be a key qualification. Not only did I find research to be highly beneficial in terms of graduate school, the experience and knowledge that could be earned from it was an extremely attractive factor. So here I am!”

Pujita
“I heard about it during one of my ECE 1882 classes when Mrs. Julie Ridings came to our class and talked to us about ORS. It sounded like an interesting program and I signed up for it. I think the best part about ORS is that it encourages freshman students like myself to build a comfort level and confidence to be able to work with other people with more experience. Working with upperclassman, I was under the impression that I would initially feel out of place. As it turns out, being a freshman actually works in my favor as I would gain a early exposure to research and learn to work with other people in a research environment.”

Oh, That E-mail!
E-mail. Some love it and couldn’t live without it….others consider it a necessary evil. Students — regardless of your opinion, remember that e-mail is your official communication with Georgia Tech and it is your responsibility to check it daily — multiple times per day is even better. Important ORS information is sent to you regularly via e-mail. Avoid missing opportunities and deadlines by staying on top of it.
Research Groups In The Spotlight

Intel Sponsored RFID Research Group

Meet the Intel sponsored Radio Frequency Identification Group, Amin Rida, Mentor, and Edward Tan and Trevale Reynolds, Scholars. Their faculty advisor is Dr. Manos Tentzeris.

Tell us what the Tongue Driver Control Group’s project is about.

Amin

The objectives of this research is to use inkjet printing as a fabrication method for antennas and wireless modules on low-cost-organic material such as paper and polymers and to introduce modules with enhanced operability at UHF and then extend to WiFi frequencies. Inkjet-printing is a direct-write technology by which the design pattern is transferred directly to the substrate and does not require masks such as in the conventional etching techniques. Moreover, and unlike standard etching techniques which are considered subtractive methods since they function by removing unwanted metal from the substrate surface; inkjet printing jets the single ink droplet from the nozzle to the desired position, therefore, no waste is created, resulting in a “green” and economical fabrication solution.

Tell us a little about your background and why you chose engineering.

Amin

I was born and raised in Beirut, Lebanon and have been living in the US for 7 years. I have been a graduate student for three years in the field on Electrical and Computer Engineering at Georgia Tech due to my interest in Radio Frequency and Wireless Fields. I am interested in sports, music, and traveling.

Edward

I am a first generation Asian American born and raised in Georgia. My interest in design and technology led me to pursue Electrical Engineering. With its Atlanta location and high ranking academics, Georgia Tech presented an inexpensive, attractive choice.

Trevale

I’m originally from Dothan, AL. It is located in southern Alabama, about 15 min from the Florida state line. I’m a transfer student from Macon State College, Macon GA. I will be graduating Fall 2009 with a major in Electrical Engineering and a minor in Biomedical Engineering. I became interested in EE, like many students, at a young age. When I was very young, I would take apart my electronic toys to see how they worked. Sometimes I didn’t assemble my toys back together and my mom would get very upset. I chose Georgia Tech because of the reputation and good education. Academically, my interests are in the field of Radio Frequency Identification and Radar systems. Outside of academics, I like to read and study about anything concerning religion.

Why did you decide to participate in the ORS Program?

Amin

The ORS program offers structured state of the art research through top professors in the nation. In addition, I really like the interaction among the undergrads and their mentors, feedback from group members, and last but not least the availability of the workshops offered by the program chairs.

Edward

ORS is an amazing program that promotes undergraduate research with workshops and small wages/stipend. Along with internships and coops, I believe research is one of the best activities an engineering student can pursue. One gains valuable working experience and exposure beyond the rigid classes.

Trevale

I decided to participate in the ORS Program because I thought it would be a great way to get hands-on experience. I wanted to do more than just book work. I wanted to apply the theory that I learned in the classroom to real world applications. It also looks good to employers and the board for graduate school.

Bonjour From France

Sean Sanders, an ORS Program Scholar with the Network Security and Architecture Lab, shares a message and pictures with Scholars back in Atlanta. Sean is spending the semester at Georgia Tech’s European Campus in Metz, France.

Hi All, “The picture with the snow in the background is located in Metz, France, which is the capital of the Lorraine region. The lake is not too far from GTL, but I like to sit there and look at the sky while watching the birds play around. It’s a peaceful place. The Technopôle is the region where there are a lot of universities, research, and technology-oriented companies concentrated in one area.

The other picture is me working in the lab, just reading up on some things about networking protocols and ethical issues to avoid while pursuing the research. It’s good to hear that ORSP is growing. I wish I could be there to welcome them. I’m glad everything is going so well in Atlanta.”
Research Groups In The Spotlight

Rockwell Collins Sponsored Tongue Driver Controls Group

Meet the Rockwell Collins Sponsored Tongue Driver Controls Group, Xueliang Huo, Mentor, and Jeremy Jones, Asma Qureshi, and Jeremy Thompson, Scholars. Their faculty advisor is Dr. Maysam Ghovanloo.

Tell us what the Tongue Driver Control Group’s project is about.

Xueliang

“We are working on a project which would allow the patients with high level spinal cord injury to control a robotic arm using their tongue movements. The GT Bionics lab has already developed an innovative wireless assistive device, called the tongue drive system, which extracts patients’ intention by detecting their tongue motion and translate it into control commands. Based on tongue drive system, we are designing and developing an interface, including adaptor circuitry, control algorithm and graphic user interface, to link it to a commercial robotic arm so that the user can move the robotic arm in 3D space by simply moving their tongue around.”

Tell us a little about your background and why you chose engineering.

Xueliang

I am originally from China. I got my B.S. and M.S. in Mechanical engineering. Then I applied for PhD program in ECE at GaTech. Even when I was in the ME department, I was working on a few projects related to circuit and system design. It is attractive to me because I feel when I implement my ideas in circuits and codes, I am actually creating things. When I became more and more knowledgeable, I feel more and more freedom to do what I want to do, which is very exciting. I am also a big soccer fan.

Jeremy J.

I am from Madison, Georgia, which has won several “Best small town in America” awards and that in and of itself is reason enough to leave. I chose Georgia Tech because it was the best deal in state and my parents believe that having an engineering degree is beneficial regardless of what one wants to do. I chose ECE because I intend to become a patent attorney. I feel that it combines my academic strengths better than any other profession. I also believe that it is something I would greatly enjoy.

Asma

I was born in Karachi, Pakistan. Karachi is the world’s twentieth largest city, and it’s a very happening place. That is why I like living in Atlanta, because it is also a large city with a lot going on. I love the different people and cultures I get to experience here. That is one of the reasons why I chose to go to Georgia Tech. I got interested in Electrical Engineering when I was a little child. I remember being fascinated by light bulbs turning on with the flip of a switch. And as I grew, my teachers nurtured my interest in the sciences and my physics teacher in High school advised me to get into engineering. I took his advice and am very happy with it. My other interests include learning languages (no not computer languages!) and about the different cultures. I also enjoy sports, especially tennis and swimming.

Jeremy T.

I’m Jeremy Thompson from Savannah, GA. I’ve been interested in computers ever since my brother built one for me as a young child. I chose Computer Engineering because it seemed like the thing to do given my interests. I chose GA Tech because it was the best school for Computer Engineering in the state and HOPE covered the tuition. It’s also next to live in a big city like Atlanta. My other interests include reading all sorts of books, Ultimate Frisbee, going to the CRC, and games.

Why did you decide to participate in the ORS Program?

Xueliang

Participating in ORS and working in a multiple-culture team is very helpful for my communication skills. It also provides me an opportunity to practice and cultivate my leadership, which is extremely important in my future career life. I like to work with young students. They are smart, energetic and creative. They bring new blood to our project and inspire new ideas.

Jeremy J.

I chose to participate in the ORS Program because I think undergraduate research is an important component to an engineering education. I think the ORS Program shines over other programs because it isn’t just about the research. The organizers of the program go to great lengths to help build a sense of community amongst the participants.

Asma

I decided to participate in the ORS program because it gave me the ability to get some hands on experience without having to work as an intern or in the co-op program. The schedule is very flexible. And you learn a lot, especially if your mentor is as awesome as Xueliang Huo!

Jeremy T.

I chose to participate in the ORS program because I had a relatively light schedule and I needed something to do. The ORS program was perfect because it provides hands-on experience with research related to my interests—it helps me determine whether the major I’ve chosen is the one I want. It also looks great on a resume and gives me money!
This program would not be possible without our Sponsors! Thank You!

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