A community of dedicated students who work together to broaden the academic experience.

Spring 2018 Events Timeline

January 11 | ORS Scholars and Mentors reconnect after the holidays during the Hot Chocolate Social.

January 16 | Chris Roberts (Raytheon), Yi-Cheng Chen (Sandia National Labs), Nelson Magdaleno (TI) and Abdul Bailey (Intel) discuss their career progression at the Engineering Professionals Panel.

February 13 | Michelle George, Nelson Raphael, Stephen Williams, Liz Prucka, and Ali Allaire (above) provide 1st year scholars with an example of what to expect at the upcoming research competition by presenting their work from the past year and Jill Auerbach (below) provides guidance on competition/banquet preparedness.

2018 ORS Research Award Winners

On April 16 ORS undergraduate scholars, Ph. D. mentors, faculty, staff, corporate sponsors and guests attended the 16th Annual ORS Research Poster Session and Awards Banquet. The student teams shared the results of their work of the past year and networked with faculty and corporate guests. The event culminated with an awards program recognizing student teams earning the top scores for overall research and presentation skills as determined by a panel of faculty judges and the peer review award where program scholars and mentors determine the award recipient. Congratulations to the 2018 winners!

FIRST PLACE RESEARCH AWARD

Microwave Energy Harvesting Using Flexible, Transparent Printed Circuits for Space Solar Power
Evan Shi, Erik Centeno, Hiba Murali, Darel Freble—Space Solar Power Institute, Professor Greg Durgin—Faculty Advisor (Qi Cheng—PhD Mentor not pictured)

BEST PRESENTATION AWARD

Out of Chair Classification, Weight Shift Detection, and Mobile Application for Wheelchair Users
Professor Mark Davenport—Faculty Advisor, Victor Zhu, Austin Little, Nauman Ahad—Mentor

SECOND PLACE RESEARCH AWARD

Autonomous Low Frequency Radio Receiver
Jacqui Hall (SRC), Wendy Lin, Kevin Foster—Intel, Alex Xu, Nick Gross—PhD Mentor, and Alex Simoneaux (Professor Morris Cohen—Faculty Advisor, Jackson McCormick—PhD Mentor, and Daniil Budanov not pictured)

PEER REVIEW AWARD

Shape-Based Robotic Snake Traversal of Uneven Terrain
Mark Easley (TI), Michelle George, Paul Emerson, Ali Allaire, Liz Prucka, Nelson Raphael, Alex Chang (PhD Mentor), and Professor Patricio Vela (Faculty Advisor)

For a digital version of this newsletter and more go to our website: ors.ece.gatech.edu
**Faculty Advisor and Mentor Achievements**

**Professor Madhavan Swaminathan**, Director of Georgia Tech’s Center for Co-design of Chip, Package Systems (C3PS) and Deputy Director Professor Raychoudhury, presented a winning proposal to the SRC Joint University Microelectronics Program (JUMP), resulting in a $3.5 million award to fund GRA positions over five years.

**Professor Swaminathan** was also awarded the D. Scott Wills ECE Distinguished Mentor Award, 2018. This award is presented to a faculty member whose mentoring of junior faculty in connection with teaching or research activities over an extended period of time is judged to be outstanding.

**Professor Morris Cohen** was awarded the 2018 CTL/BP Junior Faculty Teaching Excellence Award by the Center for Teaching and Learning for the excellent teaching and educational innovation he has brought to our campus.

**Professor Patricio Vela** was awarded the Junior Faculty Outstanding Undergraduate Mentor Award by the Institute Faculty Honors Committee for his outstanding work in mentoring undergraduates in research activities.

**Jackson McCormick** presented his research: D region Ionospheric Imaging Utilizing VLF/LF Broadband Sferics at the European Geosciences Union in Vienna, April 2018.

**Ryan Bahr** with Bijan Tehrani received the Best Student Paper Award at the 2017 IMAPS Symposium in Raleigh, NC, for their paper “Inkjet and 3D Printing Technology for Fundamental Millimeter-Wave Wireless Packaging.”

**Xiaojia Jia** received the Center for the Science and Technology of Advanced Materials and Interfaces (STAMI) Graduate Fellowship for 2018. She will receive the title of STAMI Graduate Student Fellow. Additionally, Xiaojia’s work titled “Stable Organic Thin-Film Transistors” was published in the January 2018 edition of Science Advances journal.

**Alex Chang** presented his work titled Optimal Trajectory Planning and Feedback Control of Lateral Undulation in Snake-Like Robots at the American Control Conference in Milwaukee, WI, June 2018.

**Haiti Relay — From Design……..**

Adam Kinsel, Bria Matthews, and Jake Smith along with their Ph. D. Mentor, Jingfan Sun have gone from device design to device implementation with the Haiti Relay in the past year. The Haiti Relay is a portable, compact, rechargeable solar docking station which provides a long-lasting and reliable USB power source to people without access to a power grid. It was designed to be produced at a significantly lower cost than other devices currently available in the market. Spring semester Adam, Bria, and Jake secured funding for parts and materials. With the help of several student volunteers, they soldered the circuit boards and assembled and tested the devices. Then, they made plans to travel to Haiti to put the devices into use. Frank Lambert, with NEET-RAC (National Electric Energy Testing, Research & Applications Center), and Jingfan Sun both advised the team.
Scholar Achievements

Jingfan Sun, Ph. D. Mentor and scholars Bria Matthews, Jake Smith, and Adam Kinsel were awarded funding from the Georgia Tech Student Foundation to purchase materials and parts to build the Haiti Relay they designed.

Will Scott, Jonathan Jeffrey, and Blake Heard authored a paper that was accepted to the ACM Southeast Conference. Will was accepted as the primary author to present the team’s work at the March conference in Richmond, KY.

Members of 3 ORS teams presented their research at the IEEE RFID Convention in Orlando, FL in April. Scholars Hiba Murali, Evan Shi, Mia Colbert, Maria Saito, Hope Hong, Barry Johnson-Smith, and Oguzhan Yilmaz, Ph. D. mentors Qi Cheng, Nader Sehatbakhsh, Mike Varner and Hakkı Torun, and faculty advisor Dr. Durgin attended.

ORS scholars Hope Hong, Barry Johnson-Smith, Ben Lazar, and Oguzhan Yilmaz and their Ph. D. mentor Nader Sehatbakhsh presented their project on Security for the Internet of Things at the Hardware Oriented Security and Trust (HOST) Symposium in Washington DC in May.

Ben Lazar and Jeffrey Zhao were awarded the ECE senior Scholar Award at the Roger P. Webb Awards Program in April. This award is presented to the ECE seniors with the highest academic average.

Jeffrey Zhao has been accepted to the Sandia Masters Fellowship program.

Hiba Murali was awarded the ECE Faculty Award for doing the most to improve the educational environment within ECE and Georgia Tech. In addition to being an active ORS Scholar Hiba is an executive officer in the GT IEEE student branch, an executive officer of the HIVE (the new ECE maker space), and a member of the search committee that selected the next ECE School Chair.

Spring 2018 Events Timeline

April 11 | Scholars Liz Prucka and Nelson Raphael present their research project at the ORS research competition.

April 16 | The Phillips 66 sponsored research team with Arnett Mitchell (center right above) — Phillips 66 and Kevin Foster — Intel with scholars Jacob Bruhn and Alex Nifong (below) at the poster session portion of the ORS Research Awards Banquet.

......Haiti Relay → To Implementation

The team departed for Haiti May 6 as part of a larger group lead by Lambert — twenty five relay devices in tow — with plans to put them in place for use in the homes of villagers in remote areas Haiti. In addition to placing the devices, the team conducted training for local university students on device service and assembly in hopes of building a network of sustainability. Through their university contacts in Haiti, the team will receive feedback from users on the effectiveness, usability, and durability of the devices. The project will continue next year.
This program would not be possible without our forward thinking Sponsors...THANK YOU!

2017-2018 Mentors

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<tr>
<th>Dr. David Anderson</th>
<th>Dr. Morris Cohen</th>
<th>Dr. Mark Davenport</th>
<th>Dr. Deepak Divan</th>
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<td>Jackson McCormick &amp; Nick Gross (PhD Mentors) Wendy Lin Alex Simoneaux Alex Xu</td>
<td>Nauman Ahad (PhD Mentor) Austin Little Andrew Shutzberg Victor Zhu</td>
<td>Nishant Bilakanti (PhD Mentor) Yarun Duggal Aditya Retnanto Alexis Skidmore</td>
<td>Qi Cheng (PhD Mentor) Erik Centeno Hiba Murali Evan Shi</td>
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<th>Dr. Greg Durgin</th>
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<td>Mike Varner (PhD Mentor) Emily Backer Catie Camron Elijah Lubanski</td>
<td>Yijun Bao (PhD Mentor) Jacob Bruhn David Goldfarb Austin Nifong</td>
<td>Nordine Sebkh (PhD Mentor) Arpan Bhavsar Soham Gadgil Shayan Siahpoushan</td>
<td>Tushar Damle (PhD Mentor) Caitlin Choate Volkan Gurses Jeff Zhao</td>
<td>Morteza Rezae (PhD Mentor) Will Cuthbertson Nicholas Flint Sterling James</td>
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<th>Frank Lambert</th>
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