

Undergraduate Research at GT



<http://www.undergradresearch.gatech.edu>

What is Undergraduate Research?

- Searching for new knowledge
- Discovering new phenomena, methods, findings, and techniques
- Application of what is learned in lecture
- One-on-one work with faculty
or
- Work within a research group including faculty and graduate students

Why Do Undergraduate Research at GT?

- Develop a better understanding of “hot” topics and areas of concern
- Preparation for graduate or professional school
- Work with internationally known faculty members or as part of a research team
- Experience in your field of study (or another)
- Learn more than information covered in traditional coursework
- Develop new communication skills
- Clarify your career goals

Quotes on U/G Research



“Research gives students a chance to work on a **totally new problem—one that no one has ever tackled before**. It’s an intellectual challenge.” – Dr. Amy Bruckman, COC

“**Undergraduate Research transformed me,**” – Dr. Anderson Smith, Vice-Provost



Quotes on U/G Research



"Find a project that you really like" – Taylor Narewski, Public Policy 2006 graduate

"Find an advisor that you can work well with" – Michelle Tougas, Biology 2006 graduate, now at Duke University in master's program



Student Quotes on U/G Research

"I was treated as a member of the research group "

"This has been one of [my] most valuable experiences while in college "

"It was a pleasure to have a mentor who shared an interest in the same field as me"

"I also greatly enjoyed being able to create something that will help others in the future"

"I gained valuable experience doing novel research in an interesting field"

-- Quotes from Spring 2006 PURA Awardees

Interdisciplinary Research -- Quiet Curtains – AE



Undergraduate student Jessica Shearer worked with Professor Krishan Ahuja to develop "Quiet Curtains."

The concept transformed privacy curtains surrounding nursing home patients' beds into noise-reduction shields. The curtains may also be used in offices and schools.

RFID and Construction Safety – Civil Engineering



Undergraduate Alberto Gomez displays passive RFID equipment for work zone safety developed in a summer research project under the direction of Dr. Jochen Teizer

Motion of Crab-like Robots



Lionel London, Physics, works with the 6-axis robot in Dr. Robert Goldman's laboratory in the Physics department measuring forces related to robotic motion in granular materials.

Summer Research



Connie Rich and Camila Santiago, BME

Research Cruise in the Tropical Atlantic with Dr. Joseph Montoya in Biology



Measurements of Nitrogen fixation

International Research



Allison Smith, INTA

Surveying Polish Attitudes: The Impact of Europeanization and Globalization on National Identity

Wearable Computers - COC

Dr. Thad Starner, Computer Science professor, has developed a wearable computer and several spin-off assistive technologies with miniaturized computers.

Undergraduate projects include:

- Deep Brain Stimulator for Parkinson's Disease
- Improving Keyboard Interfaces for Wearable Computers
- Design of a Tremor Monitor for Parkinson's Disease



Examples in Architecture, Management, & Ivan Allen Colleges

- **Architecture :**
 - Seven undergrads traveled to 6 cities in Georgia to catalog Georgia's architecture. Results to be published in "Georgia's History of Architecture"
 - Game Engine Theory and Performing Venues of Palladio (3D modeling)
- **Management:**
 - Change Management and Organizational Innovation Perspectives on Business Processes Offshoring
 - The Effects of Web Assurance Seals on Consumers' Trust in E-Vendors
- **Economics :**
 - National Regulations & Barriers to to Service Trade
 - Software Release and Growth
- **Public Policy:**
 - Indicators for Energy & Water Resources in South Africa
 - The EU Neighborhood Policy and the Promotion of Human Rights: Combating Sex-Trafficking from the Ukraine & Moldova

Examples in Architecture, Management, & Ivan Allen Colleges, cont'd

- **INTA:**
 - The Status of Women After the Taliban
 - Mexico's Political Atmosphere after the fall of the PRI in 2000
- **LCC:**
 - Neo-Vampire Narrative and The Emergence of Cyberpunk Fantasy in Western Culture. (Invited to present work at International Conference)
 - Mary Wollstonecraft's - The Vindication of the Rights of Woman (1792)
- **HTS:**
 - Nation-State Formation & the Effects of Decolonization. (Student won 1st place in a national sociology meeting)
- **Computational Media**
 - Puppet Show: Intuitive Puppet Interfaces for Expressive Character Control (Two students traveled to Conference on Digital Arts and Technology in Athens, Greece)
 - T-views Table-top Role-Playing Game (TTTRPG)



- **How to Get Involved...**
 - Research with a faculty member for course credit or for pay
 - Summer research experiences at or away from GT
 - International research programs
 - **Research Option**
 - Thesis-based degree
 - 9 hours research
 - Thesis writing course
 - Available in 14 schools (more coming)

How to Find a Mentor

- **Talk to the faculty**
 - Talk to a professor whose class interested you
 - Visit the web sites of faculty – find 2-3 whose work interests you
 - Read a paper they've published
 - Make an appointment to speak with the faculty about their work & share your interest in what they are doing
 - Mention that you are interested in working with them on a research project either for credit or pay
 - Be ready with your resume and/or transcripts – many ask to see them
- **Talk to your Undergraduate Coordinator** – he or she may be able to steer you towards specific professors to speak with
- **Talk to your advisor**
- **Other sources**
 - UROC database in COC
 - Fellow students who are participating in U/G Research can offer suggestions
 - Graduate Student TA's can offer suggestions

Funded Opportunities

- President's Undergraduate Research Awards (PURA)
 - \$1,500 salary awards to student/faculty teams
 - \$1,000 travel grants to present research work at national and international professional conferences
 - Approximately 200 competitive awards per year, 3 periods (Fall, Spring, Summer semesters)
- Faculty research contracts and grants
- Summer opportunities

U/G Research Events

Spring Symposium
(poster & oral presentations)

UROP Workshops

Student Advisory Board (SABUR)



New Initiative – U/G Research Journal, The Tower

- Approval to proceed from Sr. Vice-Provost
- Pending approval from Student Activities Committee and Student Publications Committee
- Recruiting interested students for review and editorial positions; production positions
- Hope to have 1st issue of online journal out in Spring
- <http://www.gttower.org/>

Student Perspective



Questions?

Contact Us!

**Undergraduate Research Opportunities
Program (UROP)**

<http://www.undergradresearch.gatech.edu>

Dr. Karen Harwell

Director, Undergraduate Research

404-385-7325

Karen.harwell@carnegie.gatech.edu

Ms. Fadrika Prather

Project Coordinator

404-385-7436

Fadrika.prather@carnegie.gatech.edu