The International Summer Research Experience for Undergraduates represents a collaboration between the University of Tennessee at Chattanooga and the University of Cadiz in Spain. Under the direction of University of Cadiz faculty mentors, students in the program complete an intensive research project, develop language skills, and build community through social activities. The program is open to current graduate and undergraduate students in all disciplines.

The URaCE Summer Research Experience for Undergraduates (REU) Program is a ten-week, residential, intensive research experience for students interested in gaining a competitive advantage for graduate school, medical school, and professional careers. The program introduces students to the academic research culture through hands-on participation in interdisciplinary research and creative projects, professional development training, and community building. Under the direction of faculty mentors and program administrators, student scholars complete a research project, participate in professional development programming, and build community through social activities. The program is open to current undergraduate students in all disciplines.

SYMPOSIUM AGENDA

4-5:30 p.m.  
Poster Session

5:30-6 p.m.  
Mix and Mingle

5:30-6 p.m.  
UTC Clarinet Quartet  
Nikolasa Tejero  
Wanda Dugger  
Kyle Patton  
Diego deCordova

ABOUT
The UTChattSat REU - A CubeSat Research and STEM Program is a ten-week, residential, intensive research experience where students work closely with their mentors on cutting-edge projects in Space Systems, Electronics, Communications, and other exciting research areas.

The ICompBio: Research Experience for Undergraduates in Interdisciplinary Computational Biology is a ten-week, residential, intensive research experience with an emphasis on interdisciplinary computational biology. Students in the program learn advanced data processing and deep learning methods using Python. The computing training includes coding, modeling, simulation, deep learning neural networks, computer vision, parallel computing, statistics, data visualization, and mobile App development.

The Upward Bound Math Science program at the University of Tennessee at Chattanooga is part of the federally funded TRiO programs, whose purpose is to prepare first-generation college-bound students for success in higher education. The goal of Upward Bound Math Science is to help high school students recognize and develop their potential to excel in math and science and to encourage them to pursue post-secondary degrees in those subjects.
“Participating in UR has helped me to further my future goals. Having this experience will set me apart when it comes to job applications and set me on a path towards graduate school.”

- 2018 URaCE REU Scholar

Olivia Morrison
“The Effects of E-cigarette Alkaloids on Gene Expression and Cell Viability in Lung Cells”

Bennett Bowden
“The Effects of Big Data on Healthcare Jobs: A Systematic Literature Review”

Jessica Gregg
“Belief or Abuse: An Explorative Examination of Religiosity, Domestic Physical and Verbal Abuse and the Correlates of Attitudes Toward Partner Violence”

Aaren Isabel
“1st Historical Database of Introduce Fish Species in Tennessee”

Kathryn Jackson
“Optimizing the Chemical Recipe for Ambiently Dried Transparent Aerogel”

Matthew McCarver
“Inference For The Normal Youden Index Under Type II Censoring”

Ryenne McDowell
“What Effect Does Public Policy Have on Gentrification and the Displacement of African-Americans in Chattanooga, Tennessee?”

Olivia Morrison
“The Effects of E-cigarette Alkaloids on Gene Expression and Cell Viability in Lung Cells”

JhéDienne Adams
“Strange Fruit: A Historical Examination of the Black Female Body as More than Medical Material”
Alaura Robinson
“Rethinking the Technopol: Black Mirror’s Warning to Parents and Youth”

Ashwyn Sam
“Evaluation of Discretization Schemes in Biglobal Stability Analysis of Cylindrically-Shaped Solid and Hybrid Rockets”

Steven Sawyer
“Nanomaterial Characterization and Treatment in Urban Stormwater Runoff”

Lysa Scealf
“The Therapeutic Importance of Compassionate Care”

Kalie Shaw
“An Exploratory Study of How the Convergent News Model Relates to Student Media”

David Smith
“Fatty Acid-Mediated Phenotypic Responses in Vibrio fischeri and Vibrio alginolyticus”

Adeola Ijiyode
“A Retrospective Investigation of Racial-Ethnic Socialization”

Terele Parker*
“Super-Capacitor Solar Charging”
*Tuskegee University
Cádiz REU Scholars

Braley Gentry
“Prey insect fauna and sugar composition of leaf mucilage droplets in the rare carnivorous plant Drosophyllum lusitanicum (Drosophyllaceae)”

Jaylen Mans
“A possible nephroprotective role of Semaglutide; a new glucagon like peptide-1 receptor agonist, in HEK 293 cells”

Mark Merritt
“Introducing Neural Networks in the field of EV”

Peter Zeglen
“An Exploration of Non-Gaussian Processes in Bayesian Optimization”

“Undergraduate research has made me a better and more-engaged student, as well as a stronger candidate for medical school. I wish that everyone could experience what I have through undergraduate research.”

- 2018 URaCE REU Scholar

UTChattSat REU Scholars

Diego Amaro
“A CubeSat Reaction-Wheel-Based Attitude Control System”

Berkay Dean
“A CubeSat Reaction-Wheel-Based Attitude Control System”
ICompBio REU Scholars

Dell Zimmerman
“Synthesis and Characterization of Poly(HydroxyEthylMethacrylate) (PHEMA) Hydrogels”

Dakila Ledesma
“Automated herbarium sheet image post-processing using a domain-specific, performant neural network model for colorchip”

UA MINT Center REU Scholar

Sara Bey*
“Micromagnetics Simulations of Multilayer Thin Films with Vertical Inhomogeneity”
*REU, University of Alabama, Tuscaloosa

Vanderbilt Aspirnaut

Ximena Leon*
“Characterization of Collagen IV α121 Interactions during Scaffold Assembly in Embryonic Mouse Tumor Cells and Chain Production in Adult Human Lung Cancer Cells”
*Aspirnaut at Vanderbilt University Summer Science Academy

UTC Upward Bound Scholar

DeOndree Roberts*
“Stage Genies - An Innovative, Engaging Computer Science Curriculum”
*Central High School, Class of 2021
Students in the URaCE Summer REU program composed six-word stories at the beginning of the experience to capture their research passions and aspirations.

“Someone has to save the environment.”
- Steven Sawyer

“Media students are unprepared for work.”
- Kalie Shaw

“Knowledge is Power, Love Cures All.”
- Lysa Scealf

“Melanin magic and malicious medical men.”
- JhéDienne Adams

“Human footprints on the surface of Mars.”
- Ashwyn Sam

“Technology’s rise through our sinking humanity.”
- Alaura Robinson

“It’s time to change the narrative.”
- Jessica Gregg
“Very small scale, very big implications.”
- David Smith

“E-cigarettes can still make you sick.”
- Olivia Morrison

“Black People: America’s Little Guinea Pigs”
- Ryenne McDowell

“Doing research ASAP. Making a difference.”
- Kathryn Jackson

“Environmental science is just as important.”
- Aaren Isabel

“We don't talk about race enough.”
- Adeola Ijiyode

“Progress isn’t about technology, but people.”
- Bennett Bowden

“Choices to make, risks to take.”
- Matthew McCarver

“OHANA, HAKUNA MATATA, PREPARATION IS KEY”
- Terele Parker
ACKNOWLEDGMENTS

Undergraduate Research Mentors

URACE REU PROGRAM

Fernando Alda, Ph.D., Biology, Geology and Environmental Science

Jejal Reddy Bathi, Ph.D., Civil and Chemical Engineering

William Davis, Outreach Manager and Producer, WUTC

Sarah Einstein, Ph.D., English

Trevor Elliott, Ph.D., Mechanical Engineering

Elizabeth Gailey, Ph.D., Communication

David Giles, Ph.D., Biology, Geology and Environmental Science

Sumith Gunasekera, Ph.D., Mathematics

Margaret Kovach, Ph.D., Biology, Geology and Environmental Science

William Kuby, Ph.D., History

Marcus D. Mauldin, Ph.D., Political Science, Public Administration, & Nonprofit Management

Mina Sartipi, Ph.D., Computer Science and Engineering

Chris Silver, Ed.D., Psychology

Amye Warren, Ph.D., Psychology

Sungwoo Yang, Ph.D., Civil and Chemical Engineering

CÁDIZ REU PROGRAM

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Antonio Gamez, PhD, University of Cádiz

Luis Molinero Lafuente, Ph.D., University of Cádiz

Fernando Ojeda, Ph.D., University of Cádiz

Fernando Perez, Ph.D., University of Cádiz

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ICOMPBIO REU PROGRAM
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UNIVERSITY OF ALABAMA MINT CENTER REU PROGRAM
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Tatiana Allen, Ph.D., Chemistry and Physics

VANDERBILT UNIVERSITY SUMMER SCIENCE ACADEMY ASPIRNAUT PROGRAM
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UTC UPWARD BOUND PROGRAM
Daniel Mailman, UTC Graduate Student, Engineering
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**Jamie Booth**, Study Abroad Advisor, Center for Global Education

**Twyler Boykin**, Director, UTC Upward Bound Math and Science Program

**Beverly K. Brockman**, Ph.D., George Lester Nation Centennial Professor of Entrepreneurship, and Head of the Marketing & Entrepreneurship Department at the University of Tennessee at Chattanooga

**Virginia Cairns**, Professor and Instruction Librarian, UTC Library

**Bengt Carlson**, Experiential Learning Coordinator (ThinkAchieve), UTC Walker Center for Teaching & Learning

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**Marc Holcomb**, Assistant Director for Professional Development, UTC Center for Career and Leadership Development

**Rob Liddell**, Executive Director, UTC Center for Career and Leadership Development

**Laurie Melnik**, Executive Director of the Southeast Center for Education in the Arts (SCEA) at the University of Tennessee at Chattanooga

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STUDENTS WHO PARTICIPATE IN UNDERGRADUATE RESEARCH

**GAIN** hands-on research and professional development skills, which add value to the bachelor’s degree.

**ENRICH** and enhance society through research discoveries.

**DEVELOP** a diverse set of skills that are marketable and transferable to all professional careers.

**NETWORK** with a community of scholars and build lasting relationships with mentors.

**BECOME** self-directed, life-long learners, skills that are necessary for success in graduate school and the world of work.

**LEARN** how to work collaboratively to achieve goals.

**CONNECT WITH THE OFFICE FOR URACTE**

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