The university offers undergraduates the opportunity to reach beyond the classroom to pursue the excitement of original research and creative projects. Every spring, the Office of Research & Engagement organizes the Exhibition of Undergraduate Research and Creative Achievement (EURēCA) — a two-day exhibition and performance event for students. Projects judged to be the best overall are recognized with the Phi Kappa Phi National Honor Society Awards, William Harris III Undergraduate Research Award, Office of Research Top Undergraduate Research Award, and the Environmental Sustainability Award.

**College of Agricultural Sciences and Natural Resources**

**William Barbour**
Project: *Design of an Underwater Video and GPS Mapping System for the Exploration of Streambed Aquatic Populations*
Faculty Mentor: Paul Ayers

**Samantha Brown**
Project: *Cj0843c, a putative lytic transglycosylase, contributes to beta-lactam resistance in Campylobacter jejuni*
Faculty Mentor: Jun Lin

**Ariel Buehler**
Project: *Microgreens: Use of Green Fluorescent Proteins to Evaluate Antimicrobial Efficacy*
Faculty Mentor: Faith Critzer
Anthony Cicco
Project: *Comparison of grapeseed, pomegranate, and cranberry extracts against salmonella enterica sorovants Typhimium and Enteritidis*
Faculty Mentor: Doris D’Souza

Joshua Grant
Project: *Functional analysis of a putative membrane-bound endo-β-1-4-glucanase from Panicum virgatum*
Faculty Mentor: Neal Stewart

Chelsea Johnson
Project: *Molecular characterization of herbicide resistance in horseweed (Conyza canadensisL.)*
Faculty Mentor: Neal Stewart

College of Architecture and Design

Haley Allen
Project: *Omakuva [self-portrait] Re-Align*
Faculty Mentor: Brian Ambroziak

Ali Alshaleh, Kyle Jenkins, and Jake Heaton
Project: *Steam Bending: Explorations with Wood in Parametric Design*
Faculty Mentor: Gregory Aspaw
Christina Clouthier, Stephen Guertin, Walker Westbrook, and Geoffrey Hillstead
Project: A Study of Appalachian Vernacular as it Pertains to the Design of Modern Prefab Architecture
Faculty Mentor: Goeritz, Hansjoerg

Amanda Gertsen
Project: Collective Dialogue
Faculty Mentor: Jennifer Akerman

Holly Harris
Project: Confabulatorum Nocturni: Edgar Allan Poe Creative Writing Pavillion
Faculty Mentor: Brian Ambroziak

Michael Housley
Project: Perceptions of Identity
Faculty Mentor: Katherine Ambroziak

Margaret Jamison, Deanna Olson, and Caroline McDonald
Project: Learning Landscape IDEC
Faculty Mentor: Jeff Geren

Kirsten Reed
Project: Reconstructing Process [investigations into the relationship of the hand and the machine]
Faculty Mentor: Jennifer Akerman

Benjamin Wathen
Project: Knoxville Planetarium
Faculty Mentor: Katherine Ambroziak
School of Art

Jennifer Grant
Project: You Know Your Voice is Kind of Nice When Your Mouth Isn’t Screwing it up
Faculty Mentor: Marcia Goldenstein

Deborah Rule
Project: What You Always Wanted to Knox
Faculty Mentor: Marcia Goldenstein

Tara Sripunvoraskul
Project: Chinese Language Mobile Apps
Faculty Mentor: Carolyn Staples

Lyndsey Stewart
Project: Etching and Oxidation: Inkless Printing
Faculty Mentor: Beauvis Lyons

Catherine Widner
Project: Origins: Formation, Deterioration
Faculty Mentor: Marcia Goldenstein and K. Yamamoto
College of Arts and Sciences

Desta Bume
Project: Controlled Formation of Metal Silicate Monolayer on Silicon Wafers
Faculty Mentor: Craig Barnes

Matthew Culbert
Project: 3-dimensional imaging and quantification of cell adherence on curved surfaces of medical grade devices using confocal laser-scanning microscopy
Faculty Mentor: John Biggerstaff

Matthew Dillon
Project: Ballistic Missile Defense
Faculty Mentor: Brandon Prins

Peter Duden
Project: Phosphorylation Regulates Myosin Driven Organelle Movements
Faculty Mentor: Andreas Nebenfuehr

Connor Gautam
Project: Simulations of Mirror Neutron Oscillation/Regeneration
Faculty Mentor: Yuri Kamyshkov

Phi Kappa Phi Award Winner
Bethany Good
Project: Virtus et Oratio: Manliness and Rhetoric in Early Imperial Rome
Faculty Mentor: Maura Lafferty
Devin Jones  
Project: *Corn and Rice Strains of Spodoptera frugiperda* (Lepidoptera: Noctuidae) and Fall Migration in South Texas  
Faculty Mentor: Gary McCracken

Devin Pinkston, Marcus Wild, Betsy Pack, and Claire McCarter  
Project: *Relationship satisfaction and diabetes-specific anxiety: Gender and ethnicity as moderating variables*  
Faculty Mentor: Kristina Gordon

Jeffrey Rymer  
Project: *Novobiocin as an Allosteric Modulator of Ste2p*  
Faculty Mentor: Jeff Becker

McCall Sarrett  
Project: *The Effects of Pedagogical Conditions on Second Language Processing*  
Faculty Mentor: Harriet Bowden

Nancy Tran  
Project: *Arabidopsis Calmodulin like gene (CML38) – A Novel Anaerobic Response Polypeptide and A Suppressor of Gene Silencing*  
Faculty Mentor: Dan Roberts

Jasmine Vazin  
Project: *What’s for dinner? Potential activities and substrate specificities of diverse extracellular peptidases in the Tennessee River*  
Faculty Mentors: Andrew Steen and Steven Wilhelm
Austen Webber
Project: *Effects of Viral Lysis on Carbon Cycling in Marine Microbial Communities; Assaying Extracellular Enzymes and Tracking Size Fractions of Released Dissolved Organic Matter*
Faculty Mentors: Andrew Steen and Steven Wilhelm

Kendal Youngblood, Robert Pinter, and Patrick Hollis
Project: *Oral History Projects of U.S. Veterans of World War II*
Faculty Mentor: Vejas Liulevicius

College of Business Administration

Hannah Alexander
Project: *International Taxation and Initial Foreign Entries*
Faculty Mentor: Lane Morris

Jonathan Chavez
Project: *The Network: Financial Connectivity and Economic Growth*
Faculty Mentor: Lane Morris

Rebecca Colburn
Project: *Returns Management and Consumer Satisfaction*
Faculty Mentor: Lane Morris

Robert Davis
Project: *The Effect of Subsidies on Solar Panel Purchases*
Faculty Mentor: Lane Morris
Nicholas Love  
Project: *Sustainable Fish: A Look at Consumer Behavior*  
Faculty Mentor: Lane Morris

Christopher Miles  
Project: *Will Say on Pay Matter?*  
Faculty Mentor: Lane Morris

Margaret Ross  
Project: *The Effectiveness of Coupons in Grocery Stores*  
Faculty Mentor: Lane Morris

Daniel Whitaker, III  
Project: *Tennessee’s Gas Tax: Burning Gas and Dollars*  
Faculty Mentor: Lane Morris

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**College of Communication and Information**

Lauren Beets  
Project: *Multimedia Storytelling*  
Faculty Mentor: Robert Heller

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**William Harris III Undergraduate Research Award**

Emily Blocher and Hannah Allen  
Project: *Streetwise: Burn the Night*  
Faculty Mentor: Robert Legg
Christine Copelan, Kristin Carver, and Lauren Gregg  
Project: *Mommy Made Me: An Investigation of Flu Shot Influences*  
Faculty Mentor: Ron Taylor

Nathaniel (Nate) Patton  
Project: *Multimedia Story Telling*  
Faculty Mentor: Robert Heller

**College of Education, Health, and Human Sciences**

Sheryl Benson  
Project: *Repeated Food Exposure via the Olfactory and Gustatory Systems and Rate of Salivary Habituation*  
Faculty Mentor: Hollie Raynor

Elisabeth Spratt  
Project: *Determining the effects of oral delivery of bile salt hydrolase in Zucker fatty rats*  
Faculty Mentor: Guoxun Chen

Emily Tucker  
Project: *Gender and Mother-Child Interaction in Informal Urban Settlements of Kenya*  
Faculty Mentor: Hilary Fouts
Laura Wilson, Maxwell Graham, Amanda Hall, Brianna Wilkerson, and Stephen Polcsa

Project: *Raising the Bar: Comparative Analysis of Neighborhood Culture and Demographics on Profit Margins and Socioeconomic Status of Bar Businesses*

Faculty Mentor: Rachel Chen

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**College of Engineering**

**Office of Research & Engagement**

**Top Undergraduate Award Winner**

Mary Bailey and Adithi Amarnath

Project: *Elucidating Role of Heart Valve Cells in the Aortic and Mitral Valve Calcification*

Faculty Mentor: Zannatul Ferdous

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Morgan Baltz

Project: *Characterization of Influenze Hemagglutinin Mutants for the Elucidation of an Autocatalytic Mechanism*

Faculty Mentor: Eric Boder

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Brock Bartley

Project: *Oxidation and Plasmonic Behavior of Ag-Co nanoparticle Arrays*

Faculty Mentor: Ramki Kalyanaraman
Thomas Warren de Wit
Project: *An Inter-Keypoint Orientation Descriptor for RGB-D Object Recognition*
Faculty Mentor: Lynne Parker

Alexandra Hackett
Project: *Mechanical Characterization of Ion-Irradiated Silicon Carbide by Nanoindentation*
Faculty Mentor: Erik Herbert

Ryan Hodges, Brandon Massengill, Brittani Perez, and Chanci King
Project: *Subclinical Mastitis Inline Detection System*
Faculty Mentor: John Wilkerson

Victor Lollar
Project: *In-Situ Condition Monitoring of Components in Small Modular Reactors*
Faculty Mentor: B.R. Upadhyaya

**School of Music**

**Phi Kappa Phi Award Winner**

Carson Hayes, Eric Greenep, and Matt Gabriel
Faculty Mentor: Wesley Baldwin
Sean Copeland, Daniel Reeve, Nathan Arnewine, and Tylar Bullion
Faculty Mentor: Dan Cloutier

Megan Brooker
Faculty Mentor: Shelley Binder

Andrea Markowitz
Faculty Mentor: Marjorie Stephens

College of Nursing

Tristan Daniel, Elizabeth Berry, and Cynthia Denton
Project: Effective pain management strategies for patients with addiction histories
Faculty Mentor: Thompson, Kathleen

Anna Freels, Evan Berres, and Summer Reives
Project: Awareness of the Female Condom Among Undergraduate College Students at the University of Tennessee
Faculty Mentors: Sadie Hutson and Ezra Holston
Blair Slingerland and Egan Monroe
Project: *CUVO’s Caps*
Faculty Mentor: Kathleen Thompson

Jasmine Brown
Project: *Effects of Rental Assistance on Recipients’ Living Situations*
Faculty Mentor: Sungkyu Lee

Jessica Heins
Project: *Effectiveness of Interventions Provided by Knox County for Families with Truant Behavior*
Faculty Mentor: Sungkyu Lee

Candice Sellers
Project: *Effect of Integrated Services on HIV-positive Clients’ Physical Health*
Faculty Mentor: Sungkyu Lee

John Wells
Project: *Effectiveness of a Community-Based Intervention on Criminal Thinking among Adults with Mental Illness Who are at Risk of Recidivism*
Faculty Mentor: Sungkyu Lee
Theatre

Adam Crandall
Project: Almost, Maine
Faculty Mentor: Casey Sams