

EURēCA

2013 EURēCA Awardees

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

Phi Kappa Phi Award Winner



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 Typhimurium 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 Applachian 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: *Confabulatores 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 Neuron Oscillation/Regeneration*

Faculty Mentor: Yuri Kamyshev

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

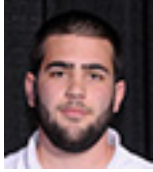
Nancy Tran

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

College of Communication and Information

Lauren Beets

Project: *Multimedia Storytelling*

Faculty Mentor: Robert Heller

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*

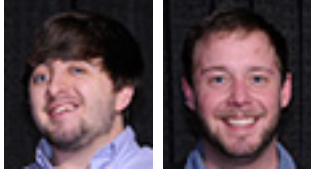
Faculty Mentor: Guoxun Chen



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

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

Morgan Baltz

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

Faculty Mentor: Eric Boder



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*

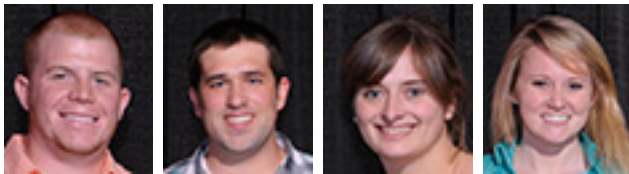
Faculty Mentor: Lynne Parker



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 Arnwine, and Tylar Bullion

Faculty Mentor: Dan Cloutier



Megan Brooker

Faculty Mentor: Shelley Binder

Andrea Markowitz

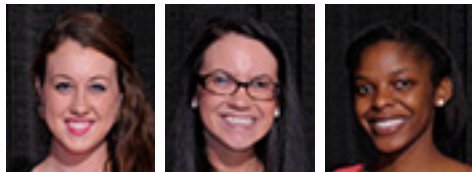
Faculty Mentor: Marjorie Stephens

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

College of Social Work



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