



T UNDERGRADUATE RESEARCH & FELLOWSHIPS

27th annual **EURēCA**

Exhibition of Undergraduate Research and
Creative Achievement

April 25, 2023



27th
annual

EURēCA

Exhibition of Undergraduate Research and
Creative Achievement



Caleb Hupp
Performing, "Rebonds B"
by Iannis Xenakis

27th
annual

EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

College of Arts and Sciences Visual and Performing Arts/Music

Presented by,

Dr. Andrew Skoog

Professor and Area Coordinator of Voice,
School of Music

School of Music

Third Place

Amara Pappas

Elle et moi by Amy Beach;

*Everything Else from **Next to Normal** by Tom Kitt*

Mentor: Andrew Skoog

School of Music

Second Place

Emma Woodward

Symphonie espagnole, Movement No. 1

by Édouard Lalo

Mentor: Miroslav Hristov

School of Music

First Place

Caleb Hupp

Rebonds B

by Iannis Xenakis

Mentor: Andrew Bliss

27th
annual

EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

College of Arts and Sciences Humanities

Presented by,

Dr. Stefanie Ohnesorg

Associate Professor and Chair of the German Program
Department of World Languages and Cultures
College of Arts and Sciences

College of Arts and Sciences Humanities

Achievement Award

Delia McDevitt

*Juror Bias and Epistemic Injustice in Sexual Assault
Trial Procedures*

Mentor: Georgi Gardiner

College of Arts and Sciences Humanities

Achievement Award

Tony J Caldwell

*The Role of the Roman Emperor in a Provincial Society:
Multiple Correspondence Analysis of Identities in the
Latin Epigraphy of Africa Proconsularis*

Mentor: Stephen Collins-Elliott

College of Arts and Sciences Humanities

Achievement Award

Angelica Williams

*Activism in the Archives: A Glimpse of Social
Movements in the Department of Africana Studies*

Mentor: DeLisa Hawkes

College of Arts and Sciences Humanities

Achievement Award

Corinne Kamien

*International Sisters? Interactions between U.S.
Female Missionaries and Mexican Women, from the
19th to 20th Centuries*

Mentors: Tore Olsson & Jacob Latham

College of Arts and Sciences Humanities

Achievement Award

Brett Rogers

*From Maciunas to Branca: Fluxus Principles in the No
Wave Movement*

Mentor: Rachel Golden

College of Arts and Sciences Humanities

Achievement Award

Tate Mobley

*The Powerful Mary: An Analysis of Late Medieval
Miniatures in Speculum Humanae Salvationis*

Mentor: Mary Dzon

College of Arts and Sciences Humanities

Achievement Award

Makaela Webb

*The Vesey Conspiracy of 1822: The Nonexistent Revolt
that Changed History*

Mentor: Beau Gaitors

College of Arts and Sciences Humanities

Achievement Award

Nicole Deasy

*All You Knead is Love: The Lives of the Liddell Sisters
and the Founding of the Love Kitchen*

Mentors: Brandon Winford & Jacob Latham

27th
annual

EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

College of Arts and Sciences

Natural Sciences

Presented by,

Dr. Larry McKay

Associate Dean for Research and Facilities
College of Arts and Sciences

College of Arts and Sciences
Natural Sciences

Achievement Award

Raegan van Wirt

*Exploring Mu-Opioid Receptor Dynamics Using
Single-Molecule Fluorescence*

Mentor: Rajan Lamichhane

College of Arts and Sciences
Natural Sciences

Achievement Award

Jessica Kearney

Elucidating patterns of defeat-induced social avoidance behavior and medial amygdala activity in female Syrian hamsters

Mentor: Matthew Cooper

College of Arts and Sciences
Natural Sciences

Achievement Award

Jessica Olatt & Charlie Olson

*Sleep-Disruptive Doses of Morphine and Fentanyl are
Antinociceptive in C57BL/6J (B6) Mice*

Mentor: Helen Baghdoyan

College of Arts and Sciences
Natural Sciences

Achievement Award

**Yaswanth Singamaneni &
Benjamin Kilgore**

*Effects of Social Play on Neural Plasticity and Stress
Susceptibility in Syrian Hamsters*

Mentor: Matthew Cooper

College of Arts and Sciences Natural Sciences

Achievement Award

Tyler Myers

*Mind-Altering Microbes: Impacts of Gut Bacteria on
Animal Host Development and Behavior*

Mentors: Heidi-Goodrich-Blair & Jennifer Heppert

College of Arts and Sciences
Natural Sciences

Achievement Award

Lucas McBee

*Soliton Behavior Arising from a Novel Quartic Spin
Interaction in Sr_2IrO_4*

Mentor: Jian Liu

College of Arts and Sciences Natural Sciences

Achievement Award

Kanan Wise

Dark Matter Search with Neutrons

Mentor: Yuri Kamyshev

College of Arts and Sciences

Natural Sciences

Achievement Award

Marla Leone

*Further Evidence for a Chemical Mirror in Socially
Naïve Sibling Common Garter Snakes (*Thamnophis
sirtalis*)*

Mentor: Gordon Burghardt

College of Arts and Sciences
Natural Sciences

Achievement Award

Sydney Baldwin

*Effects of Pollinator Feeding Behavior and Visit
Duration on Seed Set in Asteraceae*

Mentor: Laura Russo

College of Arts and Sciences
Natural Sciences

Achievement Award

Angela Jo & Benjamin Bridges

*Deep Learning algorithms aid in distinguishing
characteristics of mouse fine motor movement during
a pellet grasping assay*

Mentors: Keerthi Krishnan & Michael Mykins

College of Arts and Sciences
Natural Sciences

Achievement Award

Benjamin Kilgore

*The Effects of Social Isolation on Cortical Plasticity and
Stress-Induced Social Anxiety*

Mentor: Matthew Cooper

College of Arts and Sciences
Natural Sciences

Achievement Award

Ghaeath Abbas & Elijah Greene

*The Effects on Expression Levels of Heterologous Gene
BpsA in Streptomyces Albus Based on Genomic Loci
and Rare Codon Usage*

Mentor: Constance Bailey

College of Arts and Sciences
Natural Sciences

Achievement Award

Zan Killeffer

*Consequences of autotetraploidy on sexual allocation
in Galax urceolata*

Mentor: Joseph Williams

College of Arts and Sciences
Natural Sciences

Achievement Award

Taylor Smith

*Investigation into the identity and function of an
uncharacterized brown pigment produced by the
marine bacterium *Ruegeria pomeroyi* DSS-3*

Mentor: Alison Buchan

College of Arts and Sciences

Natural Sciences

Achievement Award

Alex Dowd

Are fungal endophytes of fire adapted plants also fire adapted?

Mentor: Karen Hughes

College of Arts and Sciences
Natural Sciences

Achievement Award

Sanaz Hossain

*Exploring the Effect of Glucose Starvation on CTCF
Genomic Binding Following DNA Damage Exposure*

Mentor: Rachel Patton McCord

College of Arts and Sciences
Natural Sciences

Achievement Award

Ohm Sharma

*Anxiety-like Behavior in C57BL/6J Mice is Sexually
Dimorphic and Altered by Buprenorphine*

Mentor: Ralph Lydic

College of Arts and Sciences
Natural Sciences

Achievement Award

Shabré Eskridge

Overexpression of mitochondrial glutamate transporter rescues the lipid droplet mutant

Mentor: Amit Joshi

College of Arts and Sciences

Natural Sciences

Achievement Award

Luke Carpenter

*Searching for new Physics in Muon Colliders: What
Could We Find?*

Mentor: Tova Holmes

College of Arts and Sciences
Natural Sciences

Achievement Award

Alexandra McBryar & Joseph Martin

*Effects of Perineuronal Net Manipulation in Female
Mouse Model For Rett Syndrome*

Mentor: Keerthi Krishnan

College of Arts and Sciences Natural Sciences

Achievement Award

Gage Coon

*Methane Production and Accumulation in Sulfate-rich
Marine Sediments at Cape Lookout Bight*

Mentor: Karen Lloyd

College of Arts and Sciences
Natural Sciences

Achievement Award

Moneera Khan & Abby Solano

*The Effects of Pubertal Timing on Perineuronal Net
Development in the Hippocampus in c/57 Mice*

Mentor: Kalynn Schulz

College of Arts and Sciences Natural Sciences

Achievement Award

Yash Deo

*Status-Dependent Differences in Neural Ensemble
Activity is Associated with Stress Vulnerability*

Mentor: Matthew Cooper

College of Arts and Sciences
Natural Sciences

Achievement Award

Ashley Wells

*Aggressive Interactions Alter Perineuronal Net
Expression in the Ventral Prefrontal Cortex and
Basolateral Amygdala*

Mentor: Matthew Cooper

College of Arts and Sciences
Natural Sciences

Achievement Award

Alex Gillespie

*Determining Whether Androgen Receptor Knockdown
in the Medial Amygdala Leads to Stress-Induced
Changes in Social Behaviors in Syrian Hamsters*

Mentor: Matthew Cooper

College of Arts and Sciences
Natural Sciences

Achievement Award

Vincent Terta

*Functional Analysis of Programmed DNA
Elimination*

Mentor: Jianbin Wang

College of Arts and Sciences

Natural Sciences

Achievement Award

Lillian Para

*Singing in the heat: how male zebra finch songs vary
with air temperature*

Mentors: Elizabeth Derryberry & Melissa Proffitt

College of Arts and Sciences
Natural Sciences

Achievement Award

Renata Dos Reis Marques

*Elucidating the Effect of Cytoskeletal Disruption on
Nuclear Morphology and Chromosome Structure of
Migratory A375 Melanoma Cells*

Mentor: Rachel Patton McCord

College of Arts and Sciences
Natural Sciences

Achievement Award

Christiane Alvarez

Developing and testing a novel in-vitro microfluidic device to analyze temporal, spatial, and molecular responses of mouse brain tissues

Mentor: Rebecca Prosser

College of Arts and Sciences
Natural Sciences

Achievement Award

Eleanor Mancini

*A Campylobacter jejuni nuclease contributes to host
colonization and inflammasome activation*

Mentor: Jeremiah Johnson

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Creative Achievement

College of Arts and Sciences

Social Sciences

Presented by,

Dr. Larry McKay

Associate Dean for Research and Facilities
College of Arts and Sciences

College of Arts and Sciences
Social Sciences

Achievement Award

Sarah Lerner

*Changing the Channel: The Impact of Television on
Children's Racial Biases in Emotion Perception*

Mentor: Sarah Lerner

College of Arts and Sciences
Social Sciences

Achievement Award

Gabrielle Petrella

*Stoic Savages?: The Oversimplification of Native
Emotions in Media*

Mentor: Sarah Lamer

College of Arts and Sciences
Social Sciences

Achievement Award

Carson Oleary

*Insecure Attachment Predicts Poor Sexual
Communication Among Emerging Adults*

Mentor: Deborah Welsh

College of Arts and Sciences

Social Sciences

Achievement Award

Zoe Ward

*The Development of Health System Resiliency: How
Kenya's Experience with Malaria Impacted Its Reaction
to the COVID-19 Pandemic*

Mentor: Katie Cahill

College of Arts and Sciences
Social Sciences

Achievement Award

Chloe Solomon

Shape Bias & The Developing 3-Year-Old

Mentor: Aaron Buss

College of Arts and Sciences
Social Sciences

Achievement Award

Hayley Simpson

*Green is for Girls: Interactions Between Masculine
Identity and Environmental Behavior*

Mentor: Sarah Lamer

College of Arts and Sciences
Social Sciences

Achievement Award

Madlen Conley

*Exploring the Dendrochronological Potential of
Eastern Red Cedar Trees to Inform Conservation
Efforts at the McGhee-Carson Site, Vonore, Tennessee*

Mentor: Matthew Kerr

College of Arts and Sciences
Social Sciences

Achievement Award

Olivia Wilkerson

*Building a Sustainable Future: The Necessary
Variations of Plastic Regulations*

Mentor: Alex Moulton

College of Arts and Sciences
Social Sciences

Achievement Award

Raneem Ammar

*UTK American Medical Student Association (AMSA)
Premedical Research Project to Evaluate Access to
Resource Barriers*

Mentor: Karmen Stephenson

College of Arts and Sciences
Social Sciences

Achievement Award

Ryan Beatty

*Conspiratorial thinking and conspiracy theories in the
time of COVID-19*

Mentor: Jana Morgan

College of Arts and Sciences
Social Sciences

Achievement Award

Inshira Bediako

*Raising Black Knoxville: Displacement, Disinvestment,
and Reproductive Justice in Knoxville's Black
Community*

Mentor: Shaneda Destine

College of Arts and Sciences
Social Sciences

Achievement Award

Annie Liu

*From Public Housing to Vouchers: the Impacts of
Redevelopment and Forced Displacement on
Low-Income Public Housing Residents*

Mentor: Solange Munoz

College of Arts and Sciences
Social Sciences

Achievement Award

Madison Huffstutter

*TikTok Use and Addiction are Related to Impaired
Mental Health Outcomes*

Mentor: Hollie Pelloosmaa

College of Arts and Sciences
Social Sciences

Achievement Award

**Dhanush Mallavarapu & Caroline
Wright**

*Examining the relationship between inhibitory control
and dimensional attention*

Mentor: Aaron Buss

College of Arts and Sciences
Social Sciences

Achievement Award

Kristopher Hensley

*The effects of saccades on visual working memory
representations*

Mentor: Caglar Tas

College of Arts and Sciences
Social Sciences

Achievement Award

Julia Craven

*Climate Conversations: An Intergenerational Artistic
Exploration with Family*

Mentor: Alex Moulton

College of Arts and Sciences
Social Sciences

Achievement Award

Jack Orebaugh

*Observations of Blow Fly Diversity in Cases of
Advanced Burnings*

Mentor: Charity Owings

College of Arts and Sciences
Social Sciences

Achievement Award

Aidan Homan

*Centrality and Compliance: Unitary vs. Federalist
Political Systems in the Implementation of the Kyoto
Protocol in Argentina and Uruguay*

Mentor: Paul Gellert

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EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

College of Education, Health, and Human Sciences

Presented By,

Dr. Hollie Raynor

Associate Dean of Research Sciences and Professor in the
Department of Nutrition, College of Education, Health, and Human
Sciences

College of Education, Health, and Human Sciences

Third Place

Naba Alfatlawy & Rawon Alfatlawi

Methods to optimize and reduce the costs of brown adipocyte differentiation from Murine primary brown preadipocytes

Mentors: Ahmed Bettaieb & Presley Dowker-Key

College of Education, Health, and Human Sciences

Second Place

Laila Martin

*The Role of AICAR Transformylase (ATIC) in Adipocyte
Differentiation*

Mentors: Ahmed Bettaieb, Presley Dowker-Key, &
Brynn Voy

College of Education, Health, and Human Sciences

First Place

Callie Tucker

*Investigation of blood lactate's association with
metabolic dysfunction in pregnancy*

Mentor: Jill Maples

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EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

College of Communication & Information

Presented By,

Beth Meko

Information Specialist I

College of Communication and Information

College of Communication & Information

Second Place

Sarah Fisher

Analyzing influencers advocating disability issues

Mentor: Moonhee Cho

College of Communication & Information

First Place

Peyton Mills

*Breaking the Silence: Peer-to-Peer Communication
About Menstruation in College*

Mentor: Michelle Violanti

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EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

College of Nursing

Presented By,

Dr. Kathleen Thompson

Clinical Professor and Honors Program Coordinator
College of Nursing



UNDERGRADUATE RESEARCH & FELLOWSHIPS

College of Nursing

Research Category Award

Maria Thompson

Caregiver Burden and Stress Among Millennial and Generation Z Caregivers of Persons with Dementia

Mentors: Kathleen Thompson & Joel Anderson

College of Nursing

Research Category Award

Skylar Sopko

*Correctional Nurses' Perceptions of Substance Use
Withdrawal Treatment for Pregnant Women in Jail in
the South-Central Appalachia Region*

Mentors: Kathleen Thompson, Sadie Hutson, Carrie
Lingerfelt

College of Nursing

Research Category Award

Samantha Reidy

Identify the role of gut microbiome in adolescent mental health problems based on socioeconomic inequalities

Mentor: Ji Youn Yoo

College of Nursing

Research Category Award

Flatt Claire

The Effects of Clonidine on Outcomes in Patients with Neonatal Abstinence Syndrome

Mentors: Jennifer Tourville & Kathleen Thompson

College of Nursing

Evidence-based Practice Projects

**Claire Connelly, Julie Headrick,
Margaret Priest, & Eva Randolph**

*The Effect of Acupuncture on Chronic Pain Reduction in
Adult Patients with Cancer: A Literature Review*

Mentor: Cristina Barroso

College of Nursing

Evidence-based Practice Projects

Jenna Briggs, Bailey Grove, Hannah Busch, & Luke Schoenbrunn

*Music Therapy Effect on Anxiety and Stress in Breast
Cancer Patients Undergoing Chemotherapy*

Mentor: Kathleen Thompson

College of Nursing

Evidence-based Practice Projects

**Mary Jarecke, Celia Stem,
Maia Stewart, & Lauren Stuart**

*Screening Protocols for Prostate Cancer for
African-American Men*

Mentor: Kathleen Thompson

College of Nursing

Evidence-based Practice Projects

**Lindsey Ierubino, Emily Hudson,
Isabelle Lama, & Kinga Major**

*The Effects of Aromatherapy on Decreasing Labor Pain
in Pregnant Women*

Mentors: Knar Sagherian & Heeyeon Son

College of Nursing

Evidence-based Practice Projects

**Ashley Bunch, Megan Clancy,
London Fleming, & Madison Hider**

*Adult Patients with Cancer-related Pain and the
Effectiveness of Mind-Body Techniques*

Mentors: Cristina Barroso & Noel Arring

College of Nursing

Quality Improvement Projects

Victoria Dina

*Evaluating the Effects of Health-Based Education on
the Home Insecure Population at Knoxville Area
Rescue Ministries*

Mentor: April Bryant

College of Nursing

Quality Improvement Projects

Jaiden Kraft & Abigail Taylor

*Effectiveness of Disinfectant Catheter Caps In
Preventing Central-Line Associated Bloodstream
Infections*

Mentor: April Bryant

College of Nursing

Quality Improvement Projects

Kate Roberson

*Orthopedic Patients Receiving Return Demonstration
for their Wound Care Stay Home After Discharge*

Mentor: Sandra Mixer

College of Nursing

Quality Improvement Projects

Lucy Lightholder

Improving Patient Satisfaction One Whiteboard at a Time

Mentor: Sandra Mixer

College of Nursing

Quality Improvement Projects

Elizabeth Ellis

Depression Screening Frequency in Low Income

Primary Care Adult Patients

Mentor: Laurie Acred-Natelson

College of Nursing

Quality Improvement Projects

Casey Langsjeon & Savana Eaton

Depression Screening Among Knoxville's Elders

Mentor: Christina Brown

College of Nursing

Quality Improvement Projects

Anber Akmanligil, Jamison Gould, & Anna Hsieh

*Evaluating COVID-19 Vaccination Education For
African Americans in Knox County to Close the
Compliance Gap Among Residents*

Mentor: Cindi Adams

College of Nursing

Quality Improvement Projects

**Nealy Anderson, Eva Karnowski,
Rachel Schutte, & Chloe Siscoe**

*Evidence-Based Wound Care Education and Prevention
in People Who Use Intravenous Substances*

Mentor: Cameron Carr

College of Nursing

Quality Improvement Projects

Kieran Elliot

*Use of Non-Pharmacologic Interventions to Improve
ICU-Related Delirium Rates in Patients Who are Cared
for in an Intensive Care Unit*

Mentor: Sarah Neller & Melissa Hessoock

College of Nursing

Quality Improvement Projects

Jasmine Russell

The Positive Effects of Implementing a Resiliency Toolkit to Combat Nursing Burnout: A Literature Review

Mentor: Sandy Mixer

College of Nursing

Quality Improvement Projects

Amelia Cassidy, Kaitlyn Biggs, Caroline Current, Grace Gavigan, & Sara Leese

Evaluating the Positive Effects of Streamlining the Structure of the Dream Connection Volunteer Community through Implementation of Google Classroom

Mentor: Olivia Freels

College of Nursing

Quality Improvement Projects

Hannah Goralnick

*The Effect of the Implementation of Doula-Supported
Care on the Rate of Unplanned Cesarean Sections and
Patient Satisfaction*

Mentor: Sarah Neller

27th
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EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

College of Social Work

Presented by,

Dr. Bill Nugent

Professor

College of Social Work

College of Social Work

Award of Merit

Patrick Angelaccio

Has the COVID-19 pandemic affected future college plans for students in Knox County?

Mentor: William Nugent

College of Social Work

Award of Merit

Claire Brown

*Determining if There is a Relationship Between Parent
Disclosure of Trauma/Abuse and Likelihood of Child
Discharging from Therapy Against Medical Advice*

Mentor: William Nugent

College of Social Work

Third Place

Wendy Whaley

*The Study of the Relationship Between Physical and
Sexual Dating Violence and Suicidal Thinking,
Planning, and Attempts*

Mentor: William Nugent

College of Social Work

Second Place

Natalia Lewis

*A Study of the Relationship Between Violent Political
Rhetoric (VPR) and Police Shootings Against Persons of
Color (POC)*

Mentor: William Nugent

College of Social Work

First Place

Alice Grosserode

*Comparison of Assistance Requests Pre-Covid (2019)
and Post-Covid (2022) at Knox County Community Call
Center*

Mentor: William Nugent

27th
annual

EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

Haslam College of Business

Presented by,

Dr. Mary Cooper

Assistant Director of Honors
Haslam College of Business

Haslam College of Business

Third Place

Kaiya Moore

Factors Which Influence Leadership Style Preferences

Mentor: Melissa S. Cardon

Haslam College of Business

Second Place

Max Thompson

*Applied Machine Learning: Predicting Future Order
Cost from Historical Data*

Mentor: Sean Willems

Haslam College of Business

First Place

Keegan Moore

*Exploring the Relationship Between Unemployment
Funding and the Unemployment Rate by Analyzing
Unemployment Data Collected During the COVID-19
Pandemic*

Mentor: Benjamin Compton

27th
annual

EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

Herbert College of Agriculture

Presented by,

Dr. John Stier

Associate Dean for Academic Programs and Professor of Plant
Sciences, Herbert College of Agriculture



UNDERGRADUATE RESEARCH & FELLOWSHIPS

Herbert College of Agriculture

Excellence in Undergraduate Research

William Smith

*Assessing the Influence of Daily Light Integral on
Photosynthetic Active Radiation Productivity and
Secondary Phytonutrients of Deep Water Cultured Red
and Green Oakleaf Lettuce*

Mentor: Kellie Walters

Herbert College of Agriculture

Excellence in Undergraduate Research

**Laura Whaley, Hannah Sutt, Emerson
Sapienza, & Jakob Johnson**

*Reducing Off-target Pesticide Spray and Harm to
Beneficial Insects with Variable-rate, Intelligent Spray
Technology*

Mentor: Amy Fulcher

Herbert College of Agriculture

Excellence in Undergraduate Research

Adnan Shihaibar

*Simulated Transport of Nano-plastics through Topsoil
in Different Rain Conditions*

Mentor: Douglas Hayes

27th
annual

EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

Tickle College of Engineering

Presented by,

Dr. Kevin Kit

Director of the Cook Grand Challenge Honors Program
Associate Professor of Materials Science and Engineering
Tickle College of Engineering



UNDERGRADUATE RESEARCH & FELLOWSHIPS

Tickle College of Engineering

Award of Merit

Jonathan Smith

*Investigation of the Tensile Strength of Threaded
Fasteners*

Mentor: Mark Denavit

Tickle College of Engineering

Award of Merit

Garrett Holbert

*Computational Modeling of a Multi-Site
Phosphorylation Network in Cell Compartments*

Mentor: Steven M. Abel

Tickle College of Engineering

Award of Merit

Marlena Alexander

*Investigation of high entropy precursor powder
synthesis for transparent ceramic synthesis*

Mentor: Mariya Zhuravleva

Tickle College of Engineering

Award of Merit

Heidi Seuss

The Design and Testing of a Jointed Foot-Ankle

Mentor: Dustin Crouch

Tickle College of Engineering

Award of Merit

Jordis Blackburn

*Investigation Into Stent Retriever Removal Speed
Affecting Removal Forces in an Experimental Model Of
Acute Ischemic Stroke*

Mentor: Bryan Good

Tickle College of Engineering

Award of Merit

Reese Sorgenfrei

*Effects of Super Absorbent Polymers on the Properties
of 3D Printed Concrete*

Mentor: Hongyu Zhou

Tickle College of Engineering

Award of Merit

Thomas Paterson & Ryan Thompson

*Brain Spatial Multi-Omic Imaging & Analysis Protocol:
Alzheimer's Disease Proof-of-Concept*

Mentor: Colleen Crouch

Tickle College of Engineering

Award of Merit

**Jack Krimmel, Seth Shuchat,
& Harriet Williamson**

*Optimal Design Refresh Planning and its Applications
in Digital Product Twins*

Mentor: Hugh Medal

Tickle College of Engineering

Award of Merit

Bryson Gullett

Neuromorphic Computing Starter Kit

Mentor: James S. Plank

Tickle College of Engineering

Third Place, Research

Mariana Milano-Benitez

*Supercapacitor Electrodes Based on Reduced
Graphene Oxide Compositied with Manganese Metal
Oxide*

Mentor: Bamin Khomami

Tickle College of Engineering

Second Place, Research

Nicole Liu

Optimized Bifunctional OER and ORR with a Spinel Catalyst

Mentor: Katharine Page

Tickle College of Engineering

First Place, Research

Maria Hernandez Rivero

*Low-Power Dynamic Circuit Design With
Steep-Switching Hybrid Phase Transition FETs
(Hyper-FETs)*

Mentor: Ahmedullah Aziz

Tickle College of Engineering

Second Place, Design

**Darlene Player, Cameron McCreynolds,
Bailey Millsaps, & Robert Cowan**

PIPER - Pot-In-Pot Extracting Robot

Mentor: Hao Gan & Amy Fulcher

Tickle College of Engineering

First Place, Design

**Melanie Moczadlo, Christopher Webb,
Alexander Bowman, Conner Cornachione,
& Alicia Zahnen**

*Replacing Current Plastic Car Parts with a PET and
Paper Composite*

Mentor: David Harper

27th
annual

EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

College of Architecture & Design

Presented by,

Dr. Milagros Zingoni Phielipp

Associate Professor and Director of the School of Interior
Architecture

College of Architecture & Design

College of Architecture and Design
School of Architecture

Honorable Mention

Katie Pennington

*ESPERANTO FICTIO: metaphysical declarations of the
[un]archival*

Mentor: Brian Ambroziak

College of Architecture and Design
School of Architecture

Third Place

Thomas Theisen

Remediation Through Building Systems

Mentor: Katherine Ambroziak

College of Architecture and Design
School of Architecture

Second Place

Nicholas Williams

REIMAGINE: Concrete and Reuse

Mentor: Katherine Ambroziak

College of Architecture and Design
School of Architecture

First Place

Alexandria Anderson

*Inside the Glass: Defining the Rapturous South
through the Lens of a Mason Jar*

Mentor: Brian Ambroziak

College of Architecture and Design
School of Interior Architecture

Honorable Mention

Greta Mehlberg

The Value of Empathy in Design Disciplines

Mentor: Milagros Zingoni Phielipp

College of Architecture and Design
School of Interior Architecture

Honorable Mention

Katie Gilstorf

*Catholic Interiority: A Comparative Analysis of Church
Design Before and After the Second Vatican Council*

Mentor: Marie Saldana

College of Architecture and Design
School of Interior Architecture

Third Place

Mariam Siahatgar

Yayladagi, Hatay's Container City

Mentor: Hojung Kim

College of Architecture and Design
School of Interior Architecture

Second Place

Kaleigh Powers

Rocky Top Reef Fully Immersive Dive Training Facility

Mentors: Timothy Dolan & Greg Blankenship

College of Architecture and Design
School of Interior Architecture

First Place

Deaney O'Brien

*Encouraging Growth in a Coastal Community through
Ecotourism: Smith Island, Maryland*

Mentor: Ashley Coon

College of Architecture and Design School of Design

Honorable Mention

Avery Jones

*The Echo Effect: Impactful Stories Unveiling the Stories
of At-Risk Youth*

Mentor: Cary Staples

College of Architecture and Design
School of Design

Honorable Mention

Kennedy Davis

Women in the Automotive Industry

Mentor: Cary Staples

College of Architecture and Design School of Design

Honorable Mention

Tanner Dunning

*Mercato: Improving Second Hand shopping through
online accessibility*

Mentor: Cary Staples

College of Architecture and Design School of Design

Third Place

Che Davis

*The Black Experience: African American Studies in the
U.S. School System*

Mentor: Cary Staples

College of Architecture and Design
School of Design

Second Place

Victoria Wheelock

PowerHouse:

Residential Energy Use in the Tennessee Valley

Mentor: Cary Staples

College of Architecture and Design
School of Design

First Place

**Ella Hosse, Luke Macdougall, &
Matthew Rightsell**

*Designing and Building a Friendly Robot To Ease
Dementia*

Mentors: Kimberly Mitchell & Xiaopeng Zhao

27th
annual

EURēCA

Exhibition of Undergraduate Research and
Creative Achievement

Graduate Student Research Mentor Awards

Presented By,

Dr. Erin Darby

Inaugural Faculty Director for Undergraduate Research & Fellowships

Associate Professor

Department of Religious Studies



UNDERGRADUATE RESEARCH & FELLOWSHIPS

Herbert College of Agriculture

Graduate Student Research Mentor Award

Spencer Givens

Graduate Research Assistant

Masters Student

Department of Plant Sciences

Herbert College of Agriculture

College of Education, Health, and Human Sciences

Graduate Student Research Mentor Award

Presley Dowker

Graduate Research Assistant

Ph.D. Candidate

Department of Nutrition

College of Education, Health, and Human Sciences

Tickle College of Engineering

Graduate Student Research Mentor Award

Mahshid Mokhtarnejad

Research Assistant, Material Research and Innovation Laboratory (MRAIL)

Ph.D. Candidate

Department of Chemical & Biomolecular Engineering

Tickle College of Engineering

College of Arts and Sciences Natural Science

Graduate Student Research Mentor Award

Tien (Miah) Sword

Ph.D. Candidate

Department of Chemistry

College of Arts & Sciences

College of Arts and Sciences Social Sciences

Graduate Student Research Mentor Award

Maya Barrett

Graduate Research Assistant

Transitions Across the Lifespan Lab (TALL)

Ph. D. Candidate

Department of Psychology

College of Arts & Sciences

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Associate Professor

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Haslam College of Business

Faculty Research Mentor Award

Dr. Phillip Daves

Associate Professor
Department of Finance
Haslam College of Business

Herbert College of Agriculture

Faculty Research Mentor Award

Dr. Kellie Walters

Assistant Professor
Department of Plant Sciences
Herbert College of Agriculture

College of Education, Health, and Human Sciences

Faculty Research Mentor Award

Dr. Rachel White

Assistant Professor

Department of Educational Leadership & Policy Studies

College of Education, Health, and Human Science

Tickle College of Engineering

Faculty Research Mentor Award

Dr. Nick Wierschem

Associate Professor

Department of Civil and Environmental Engineering

Tickle College of Engineering

College of Arts and Sciences, Natural Science

Faculty Research Mentor Award

Dr. Constance Bailey

Assistant Professor
Department of Chemistry
College of Arts & Sciences

College of Nursing

Faculty Research Mentor Award

Dr. Patricia Roberson

Assistant Professor
College of Nursing

College of Arts and Sciences, Social Sciences

Faculty Research Mentor Award

Dr. Sarah Lamer

Assistant Professor
Department of Psychology
College of Arts & Sciences



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27th annual **EURēCA**

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April 25, 2023