15th Annual Research & Creative Achievement Week
April 5th–9th Student Center

RCAW 2021 Awards Program
Opening Remarks
Interim Vice Chancellor Michael Van Scott

Chancellor’s Remarks
Chancellor Philip Rogers

Distinguished Graduate Faculty Mentor Awards
Graduate Dean Paul Gemperline

Thesis and Dissertation Awards
Graduate Dean Paul Gemperline

RCAW Undergraduate Awards
Dr. Lynnsay Marsan

RCAW Graduate Awards
Dr. Tom McConnell

Innovation and Entrepreneurship Recognition
Marti Van Scott

Provost’s Challenge Award
Dr. Elizabeth Hodge

Laser TAG Awards
Dr. Karen Litwa

Closing Remarks
Dr. Paul Gemperline
Planning Committee Members

Executive Committee

Mary Farwell
Assistant Vice Chancellor, Division of Research, Economic Development, and Engagement

Donna Kain
English, Thomas Harriot College of Arts and Sciences

Lynnsay Marsan
VC Fellow for Undergraduate Research, REDE

Tom McConnell
Associate Dean, The Graduate School

Virginia Stage
Nutrition Science, College of Allied Health Sciences

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Jocelyn Bayles
Nutrition Science, Undergraduate Student

Marquerite Bond
The Graduate School

Kathleen Cox
Associate Dean, The Graduate School

Amy Curtis
Science Librarian
Planning Committee Members (cont.)

**Taylor Dement**
Biomedical Physics Student, Thomas Harriot College of Arts and Sciences

**Christyn Dolbier**
Psychology, Thomas Harriot College of Arts and Sciences

**Nehad Elsawaf**
Economics, Thomas Harriot College of Arts and Sciences

**Rich Franklin**
Microbiology & Immunology, Brody School of Medicine

**Emma Goldberg**
Department of Physiology, Brody School of Medicine

**Pam Hopkins**
School of Communication

**Margaret Macready**
Division of Research, Economic Development, and Engagement

**Travis Moffitt**
MA Music Student, College of Fine Arts & Communications

**Plummer Nye**
The Graduate School

**Matt Smith**
Communication Specialist, University Communications

*Artwork by Will Chance

*Program by Travis Moffitt
Mentor List

A special thank you to all the mentors that encouraged and worked with students for RCAW 2021

Abdel-Salam, Tarek M
Ables, Elizabeth Tweedie
Alipour, Kent
Annetta, Leonard
Asagbra, Oghale Elijah
Asch, Rebecca G
Atherton, William Leigh
Atkinson, Terry Stafford
Aziz, Shahnaz
Babatunde, Oyinlola Toyin
Baker, Michael Drew Banerjee, Sambuddha
Bell, Natasha Lynn
Beltran-Huarac, Juan
Black, Kristin Zenee
Blakeslee, April Monica Houghton
Blanchflower, Tiffany
Machado Bolin, Linda Prior
Bowler, Mark C
Broskey, Nicholas Thomas
Chen, Yan-Hua
Christensen, Timothy W
Christian, John C
Clemens, Stefan
Cofie, Leslie E
Collins, John
Corbett, Robin
Daniel, Isaac Randolph
Das, Bhibha Mayee
DeWitt, Regina
Dias, Nancy
Dolbier, Christyn
Donica, Denise
Driscoll, Virginia Darnell
Dubis, Gabriel
DuBose, Katrina D
Eagan, Sheena Marie
Edwards, Robert
Egan, Kathleen Louise
Eppler, Marion A
Erickson, Timothy Paul
Etheridge, James Randall
Ewen, Charles R
Farr, Deonna Emm
Fazzone, Patricia Anne
Ferreira, Rosana Nieto
Field, Erin Kirby
Fish, Matthew Taft
Forbes, Thompson Hollingsworth
George, Stephanie
Geraldeli, Saulo
Geyer, Christopher
Gittman, Rachel Kelley
Gonzalez, Monica Lyn
Goodwillie, Carol
Graber, Theodore G
Gregory, Jenny Crowder
Guidry, Allen O
Habeeb, Christine
Haddock, Rosemary Kidd
Hegde, Archana
Hodge, Elizabeth Baker
Hodgson, Jennifer
Horn, Patrick Jacob
Horsman, Eric
Huang, Hu
Hudson, Nathan E
Hur, Mi-Sook
Hur, Misun
Hvastkovs, Eli Gerald
Issa, Fadi Aziz
Jensen, Jakob F
Johnson, Erika Katherine
Jubran, Hanna
Kang, Jin-Ae
Kariko, Daniel Josip
Kennerly, Susan
Kindl, Heather
Knox, David H
Kovar, Cheryl L
Kowalczyk, Christine Marie
Kulas, Anthony
Lagomasino, David
Lamb, Alfred C
Larson, Kim L
Lee, Jinkun
Lee, Joseph G
Lee, Tammy D
Lewis, Travis Earl
Limberis, Loren
Lin, Ziwei
Littleton, Heather
Loudon, James Ernest
Mansfield, Kyle David
Martin, Ryan John
Massarra, Carol
Matthews, Jennifer Cremeens
McCarlie, Van Wallace
McClung, Joseph Matthew
McCoy, Michael W
McKinnon, Jennifer Faith
McRae, Susan B
Meardon, Stacey Augusta
Mitra, Siddhartha
Mizelle, Elizabeth
Moss, Mark Eric
Muirse, Heather Lynn
Murashov, Alexander K
Murenina, Elena Konstantinovna
Murphy, Lynne
Murray, Nicholas P
Nassehzadeh-Tabrizi, Moha
Neil, Janice A
Neufer, Peter D
Ngo, Thanh
Olson Lounsbery, Marie
Owens, Tosha Lynn
Oyen, Michelle Lynn
Pardi, Vanessa
Pawlak, Roman M
Peery, Annette Ivey
Peralta, Ariane Legaspi
Perry, Jamie L
Perry, Megan A
Pokhrel, Lok R
Polakowski, Nicholas
Reardon, Robert Martin
Rickenbach, Thomas M
Rider, Patrick Michael
Roberson, Donna W
Robidoux, Jacques
Rocha, Edson R
Roop, Roy M
Roper, Rachel L
Rothermich, Kathrin
Ryan, Teresa Jean
Sastre, Lauren Rogers
Shearman, Sachiyo M
Sherman, Susan G
Shewchuk, Brian M
Shinpaugh, Jefferson
Sitzman, Kathleen Laura
Skibins, Jeffrey C
Soderstrom, Kennth M
Sousan, Sinan
Speicher, James Edward
Spuches, Anne M
Stage, Virginia Carraway
Surkar, Swati Manoharrao
Szatmari, Erzsebet Maria
Thompson, Beth
Thornton, Kendell C
Tisnado, James R
Tran, Tuan D
Tyndall, Deborah Eastwood
Vahdati, Ali
Vail-Smith, Karen
Vance Chalcraft, Heather D
Wei, Holly Lee
Wells, Angela Franks
Wilmes, Justin A
Yeh, Chia Jung
Zhu, Yong
ECU Distinguished Graduate Faculty Mentor Award, Master’s Category

Charles R. Ewen, PhD
Department of Anthropology
Thomas Harriot College of Arts and Sciences

Dr. Charlie Ewen is a professor of Anthropology in the Thomas Harriot College of Arts and Sciences, Department of Anthropology, East Carolina University. He obtained his PhD in Anthropology from the University of Florida and is director of the Phelps Archeology Laboratory at East Carolina University. Dr. Ewen has conducted research on many historical sites and cemeteries of North Carolina. He has written books on such diverse topics as the archeology of piracy and the Lost Colony. Dr. Ewen’s research has focused mostly on historical archeology, specifically the contact period and colonial period. However, like most archeologists, circumstances have led him to work on nearly every kind of archeological site, from prehistoric villages to civil war fortifications and twentieth century homesteads. Dr. Ewen’s colleagues note that he exemplifies the role of a faculty mentor, having chaired over sixty MA thesis committees. Dr. Ewen mentors students in local field projects where he provides hands-on training on research design, budgeting, personnel and logistics. His students get theoretical and practical skills from putting shovels into the ground to analyze recovered data and writing final reports. His colleagues note Dr. Ewen’s commitment to diversity and inclusivity. As president for the Society for Historical Archelogy, he has implemented policies to address these issues nationally, and he consistently makes accommodations at his field schools for students for a range of disabilities.

Students remarked: “During our excavations, Dr. Ewen made a point to engage visitors at our historic site.” “His eagerness to include public stakeholders and local community members to ensure their interests were addressed is a value I incorporate in my own research today.”

“I am most grateful for the trust and value Dr. Ewen placed on my input during excavations.” “His willingness to listen and act on my input gave me confidence to be an active voice and a leader when conducting research.”
ECU Distinguished Graduate Faculty Mentor Award, Doctoral Category

Mark C. Bowler, PhD
Department of Psychology
Thomas Harriot College of Arts and Sciences

Dr. Mark Bowler is an associate professor in the Thomas Harriot College of Arts and Sciences, Department of Psychology, East Carolina University. He obtained his PhD in Industrial and Organizational Psychology from the University of Tennessee. Dr. Bowler is director of the Occupational Health Psychology concentration in Health Psychology PhD program. Dr. Bowler’s students and faculty colleagues praise his mentoring of students. His advisees are noted for producing top-notch work not only through their formal projects but also work-life balance. Faculty colleagues write that he gives feedback on student work in a remarkable manner; relevant and important, but phrased in a manner to empower students. Dr. Bowler achieves this through detailed feedback, outlining reasons for feedback and methods needed to address problems. The most remarkable aspect of Dr. Bowler’s mentoring is when these two strengths, rapport with students and skilled feedback are combined. Outside of the classroom Dr. Bowler is well known for publicizing opportunities for students whether he encourages people to find their own passions rather than pushing students into a specific area. He doesn’t pressure students to change their research ideas, but rather come up with ways to study it and provide additional variables that might work well. Dr. Bowler’s students remark that he is one of the most approachable and sincere professors they have ever worked with, an exceptional scholar and mentor.
Thesis and Dissertation Awards

The Graduate School and the Division of Research, Economic Development, and Engagement at East Carolina University sponsor thesis and dissertation awards to recognize and honor outstanding research and scholarship at the graduate level. Each recipient is recognized during Research and Creative Achievement Week. During the fall semester, each college is invited to nominate students for these awards.

Eligibility and Criteria for Selection

Awards are presented in two categories for the 2020 Master’s Theses Award: (1) Life Sciences, and (2) Social Sciences.

Awards are presented in two categories for the 2020 Doctoral Dissertation Award: (1) Humanities and Fine Arts, and (2) Life Sciences.

Thesis and dissertations are selected from specific previous years to meet requirements for nomination to regional and national competitions.

A selection committee composed of ECU Graduate Faculty representing each college at ECU reviewed nomination materials and considered the methodological and substantive quality of theses and dissertations, as well as their contributions to the student’s chosen discipline and field of research. We thank the college-level and university-level committee members for their work in determining today’s awardees.
Jordan W. Barbee, MS, Kinesiology, May 2020.

Thesis Title: “Associations of Coach, Peer, and Parent-Initiated Motivational Climate with Burnout and Engagement”

Thesis Director: Dr. Thomas D. Raedeke

Using survey data, Jordan investigated athlete engagement and burnout in a population of 150 high school athletes. Her study examined athlete perceptions of motivational climates created by social agents (coaches, parents, and peers). A survey was used to assess the mastery climate as well as the performance climate created by social agents. Her study found that a mastery climate created by coaches and peers had a significant relationship with a sense of accomplishment, engagement and reduced burnout. A mastery climate is one in which success is focused on improvement, effort and learning through mistakes. A performance climate was defined in terms of social comparison and outperforming others that can result in intra-team rivalries and conflict. Her study also found that a coach created performance climate was linked to a higher engagement, but the effect was small in magnitude. Practical implications of this study suggest creating a mastery climate can help prevent burnout, promote engagement, and that coaches can create a mastery climate by emphasizing effort, learning, and that mistakes are part of the learning process. Strategies were described by which coaches can create challenging practice activities that emphasize self-improvement and learning. The study found that mastery climates did not have a relationship burn out. It did have a significant relationship with athlete engagement and suggested parents play a role in helping promote their adolescent athletes’ feeling of engagement.
ECU Doctoral Dissertation - Life Sciences category

Edward Sanderlin, PhD, IDPBBBC-Biomedical Science, November 2018

Dissertation title: "The Functional Roles of pH-Sensing G Protein-Coupled Receptors in Intestinal Inflammation"

Dissertation Director: Li Yang, PhD

Dr. Sanderlin’s dissertation research sought to understand the microenvironmental mechanisms of inflammatory bowel disease. In his dissertation he studied how immune cells and intestinal tissue responds to acid pH in an inflamed microenvironment. Currently little is known how cells sense extracellular acidity and subsequently alter inflammatory response. Dr. Sanderlin’s dissertation sought to understand the mechanism by which three different members of a class of proton sensing receptors serve as functional pH sensors and alter immune cell inflammatory response in acidic environments. In the course of this study Sanderlin uncovered novel roles for three proteins, GPR4, GPR65 and GPR132 in pH sensing and the regulation of intestinal inflammation. This work was performed by studying mouse models in the presence and absence of each of these proteins. His results showed that GPR4 contributes to intestinal inflammation and could be a valuable therapeutic target in colitis. On the other hand, GPR65 was found to reduce intestinal inflammation. Results indicated GPR132 also functions to reduce intestinal inflammation, however further studies are needed to evaluate its mechanisms of action. Overall, the dissertation work highlights the roles of pH sensing, G protein-coupled receptors in regulation of intestinal inflammation and it highlights the potential of these receptors as valuable therapeutic targets in the treatment of intestinal inflammation.
ECU Doctoral Dissertation - Humanities and Fine Arts category

Temptaous T. McKoy, PhD, Rhetoric, Writing, and Professional Communication, July 2019

Dissertation title: “Y’all Call it Technical Professional Communication, We Call it #ForTheCulture: The Use of Amplification Rhetorics in Black Communities and their Implications for Technical and Professional Communication Studies”

Dissertation Director: Michelle F. Eble, PhD

Dr. Mckoy’s multimodal dissertation project illustrates in innovative and original ways why cultural approaches to technical communication are important to the field of technical communication. The dissertation develops a theoretical framework, Amplification Rhetorics (AR), that allows for a dynamic and intersectional analysis of communicative actions within two communities/spaces made up of historically marginalized people. This framework uses scholarship from critical race theory, Womanist theory, African American/Black rhetorics, and cultural approaches to technical communication to articulate its commitments to reclaiming agency, lived experiences, and intersectional knowledge-making practices. Dr. Mckoy investigated these knowledge-making practices and communicative practices using interviews, observation, social media, and archival materials from HBCUs.

Dr. Mckoy demonstrates the framework’s application by providing two case studies. One case analyzes the histories and curriculum of Historically Black Colleges and Universities (HBCUs) and the other case reports on observations and interviews with participants of TrapKaroake as well as other TrapKaroake musicians in digital format. Her project illustrates both how knowledge is created and circulated in these African American/Black spaces as well as the implications for technical and professional communication theory, practice, and pedagogy.

The compelling case studies in this dissertation will influence the ways we discuss knowledge-making and rhetorical practices within technical communication, especially in relationship to historically marginalized communities and the spaces they occupy. Dr. Mckoy’s dissertation also has implications for increasing inclusivity for minority bodies in academic as well as professional places and spaces.
Research and Creative Achievement Weeks Awards

Oral and Poster Presentation Awards

ECU Research and Creative Achievement Week provides students with an excellent opportunity to practice their presentation skills and meet other creative scholars at ECU with similar interests.

East Carolina University undergraduate, graduate, and postdoctoral scholars are invited to present their research to fellow students, scholars, colleagues, faculty, and the local community in a professional, conference-style setting. We define research as an original systematic investigation and/or original creative activity designed to develop or contribute to general knowledge or culture.

Students and scholars may present their research in any one of the following categories. Only categories with five or more presenters are eligible for an award.

- Biomedical Sciences
- Business
- Community Engagement
- Education
- Engineering
- Engineering/Technology
- Fine & Performing Arts
- Human Health
- Humanities
- Natural Sciences
- Social Sciences
- Sustainability
- Technology & Computer Science
Undergraduate Student Oral Presentation Awards

Biomedical Sciences
**Spencer Lynch**
Mentor: Nathan Hudson
*A New Model for Fibrinolysis*

Business
**Rachel Watkins, Oswaldo Rangel-Corona**
Mentor: Timothy Christensen
*Tellus: A Business Driving the World’s Transition to Sustainable Products*

Engineering
**Nia Wilson**
Mentor: Teresa Ryan
*Exploring the dynamic relationship between temperature and elevation in the lower atmospheric boundary layer*

Human Health
**Dana Shefet**
Mentor: Virginia Stage
*YOUR CHILD IS OVERWEIGHT, NOW WHAT? UNDERSTANDING HOW HEAD START STAFF COMMUNICATE WITH LOW-INCOME FAMILIES ABOUT CHILDHOOD OBESITY*

Humanities
**Arvind Rajan**
Mentor: Sheena Eagan
*Medspectives - the Podcast about Health Professionals, the Stories of Their Practice, and Their Diverse Perspectives into the World Around Us*

Natural Sciences
**Sarah Akers**
Mentor: Sarah McRae
*Why so Blue? An Investigation into the Genetic Underpinning of Blue Eggshells in the Eastern Bluebird*

Social Sciences
**William Guiler**
Mentor: Christyn Dolbier
*A Neuropsychological Profile of College Students with ADHD*
Biomedical Sciences
Mikayla Luke
Mentor: Nicholas Polakowski
Predicting HBZ Interaction With BATF3 Enhancer Regions Through ChIP-seq

Biomedical Sciences
Ananya Pentakota
Mentor: Joseph McClung
Validation of a Novel Mouse Model of Cox6a2 Knockdown

Business
Kunal Chakraborty, Shaima Alamari, Ryan Cotroneo
Mentor: John Christian
Activity Based Costing for Management Decision Making in Quality Assurance Laboratories

Community Engagement
Alex Urban
Mentor: Timothy Christensen
Campus Voter Initiative

Education
Adam Butler
Mentor: Terry Atkinson
The Child-Parent Reading Experience in Pediatric Medical Office Waiting Areas

Engineering
Grace Krell
Mentor: Stephanie George
Repeatability of AERO for Improved Lymphedema Assessment

Human Health
Katrina Free
Mentor: Hu Huang
Acute High and Moderate Intensity Treadmill Exercise Increases Appetite and NPY/AgRP Neuron Activity in Untrained Female Mice
Natural Sciences

**Raazia Zia**
Mentor: Anne Spuches
*Structural and Thermodynamic Investigation of Pb2+ Binding to Human Cardiac Troponin C*

Social Sciences

**Marianne Congema and Sarah Hoffman**
Mentor: Kim Larson
*Culturally Responsive Community Palliative Care*
Graduate Student Awards

Masters Student Oral Presentation Awards

Education
Varina Wekam
Mentor: Heather Vance-Chalcraft
Investigating Mentoring Experiences for Populations Interested in Pursuing a Career in Medicine

Natural Sciences
Kelley Depolt
Mentor: Rosanna Ferreira
Compound Coastal Water Event Risk within Eastern North Carolina

Visual and Fine Arts
John Rhodes-Pruitt
Mentor: Heather Miuse
The Monster in Me: Navigating Towards the Mainstream

Graduate Student Oral Presentation Awards

Biomedical Sciences
Bhaven Patel
Mentor: Brian Shewchuck
Emergent Coordination of the Chkb and Cpt1b Genes in Eutherian Mammals: Implications for the Origin of Brown Adipose Tissue

Engineering and Technology
Matthew Carroll
Mentor: Jinkun Lee
Simulation of Transient Traffic Flow Resulting from Mixed Conventional and Autonomous Vehicles

Human Health
Rachel Grantham
Mentor: Christine Habeeb
Investigating the influence of framing techniques on self-efficacy, other-efficacy, and anticipated affect in an online fitness setting
Social Sciences

Gwyneth Schuler
Mentor: Jeffery Skibins

Wildlife Tourists’ Perceptions of Pro-Conservation Behavior Efficacy

Doctoral Student Oral Presentation Awards

Education

Paul Briney
Mentor: Travis Lewis

THE EFFECTS OF IMPLEMENTING RESEARCH-BASED INTERVENTIONS TO FIDELITY WITHIN THE MTSS FRAMEWORK ON K-2 LITERACY

Natural Sciences

Brian Bartlett
Mentor: Rebecca Asch

Projected Changes of the Distribution of Nassau Grouper Spawning Habitat and Its Management Implications

Masters Student Poster Presentation Awards

Engineering

Patricia Butler
Mentor: Stephanie George

Cost-Benefit Analysis of 3D FE Modeling of the Tibia Throughout the Stance Phase

Human Health

Kathryn Moore
Mentor: Lynne Murphy

Maintaining Social Participation and Quality of Life Through Community Mobility After Driving Cessation with Transportation Planning
Graduate Student Poster Presentation Awards

Biomedical Sciences

**Mark Tripson**
Mentor: Kenneth Sonderstom
*Cannabidiol (CBD) improved vocal recovery is associated with anti-inflammatory and antioxidant efficacy*

Natural Sciences

**Aied Garcia**
Mentor: Ariane Peralta
*Chronic nutrient enrichment alters the functional role of the soil microbiome in a coastal plain wetland*

Social Sciences

**Dakota Pavell**
Mentor: James Loudon
*The Genus Cantius and the Phylogenetic Importance of North American Primates*

Doctoral Poster Presentation Award

Human Health

**Polina Krassovskaia**
Mentor: Nicholas Broskey
*Inheritability of the “Athlete’s Paradox”: the impact of maternal exercise on offspring skeletal muscle health*
Innovation & Entrepreneurship Recognition
   Marti Van Scott

Provost’s Challenge Awards
   Elizabeth Hodge

Laser TAG Awards
   Karen Litwa

Closing Remarks
   Dean Gemperline

Thank you all!