2022 Research and Creative
Achievement Week Awards Luncheon
April 11, 2022
BUFFET LUNCHEON

Opening Remarks and Introduction

Distinguished Graduate Faculty Mentor Awards
Thesis and Dissertation Awards
RCAW Graduate, Master’s and Doctoral Awards
Dr. Paul J. Gemperline, Dean
The Graduate School

RCAW Postdoctoral Scholar Awards
Dr. Kathryn Verbanac, Assistant Vice Chancellor Division of Research, Economic Development,
and Engagement Director of Postdoctoral Affairs

RCAW Undergraduate Awards
Dr. Mary Farwell, Assistant Vice Chancellor
Division of Research, Economic Development, and Engagement & Director of Undergraduate
Research

Closing Remarks
Dr. Mary Farwell, Assistant Vice Chancellor
Division of Research, Economic Development, and Engagement & Director of Undergraduate
Research
Thank You to Our Mentors!

Abdel-Rahman, Abdel-Rahman
Abdel-Salam, Tarek M
Ables, Elizabeth Tweedie
Aileru, Azeez
Akpan, Uduak Stella
Allen, William E
Anderson, Eric Shawn
Asch, Rebecca G
Aziz, Shahnaz
Baker, Michael Drew
Balanay, Jo Anne Goot
Banerjee, Sambuddha
Bee, Beth Anne
Bell, Natasha Lynn
Beltran-Huarac, Juan
Black, Kristin Zenee
Blake, Beth A
Blakeslee, April Monica Houghton
Bolin, Linda Prior
Bowman, Josie Martin
Brewer, Kori Louise
Brewer, Michael Scott
Bright, Kawanna Michelle
Briley, Patrick Minton
Bryson, Sara
Burch, Ashley
Burns, Colin Sanderson
Campbell, Lisa
Cavanagh, John
Chambers, Crystal Renee
Christensen, Timothy W
Clark, Patricia A
Clemens, Stefan
Collins, John
Corbett, Robin
Corns, Robert
Daneri, Juan Jose
Das, Bhibha Mayee
DeWitt, Jamie C
DeWitt, Regina
Dickerson, Anne
Dickerson, Daniel Lee
Donica, Denise
Driscoll, Virginia Darnell
Eagle, John Scott
Eamon, Thomas Floyd
Egan, Kathleen Louise
Elmore, Cindy J
Eppler, Marion A
Etheridge, James Randall
Ewen, Charles R
Feder, Helena M
Filho, Faete
Fisher-Wellman, Kelsey Howard
Forbes, Thompson Hollingsworth
Fraleys, Todd A
Garcia, Brandon L
Gardner, Catherine M
George, Stephanie
Geraldeli, Saulo
Geyer, Christopher
Gittman, Rachel Kelley
Golden, Jean Ann
Grabers, Theodore G
Green, Erick Y
Habeek, Christine
Hall, Tana Louise
Hallberg, Christy Alexander
Hand, Mark Charles
Hannan, Johanna
Hart, Stephanie
Hegde, Archana
Herndon, Nic
Hodge, Elizabeth Baker
Horn, Patrick Jacob
Howard, Gregory Edward
Hu, Xin-Hua
Huang, Yilei
Hudson, Nathan E
Hughes, Robert Murray
Hurst, Misun
Irons, Paige Latham
Jubran, Hanna
Jung, Jae Won
Kane, Melinda D
Kearney, Gregory Dale
Keiper, Brett
Kipp, Aaron Marshall
Knox, David H
Kovar, Cheryl L
Lagomasino, David
Lamb, Richard Lawrence
Larson, Kim L
Lazorick, Suzanne
Lazure, Timothy
Lee, Jinkun
Lee, Joseph G
Lee, Mi Hwa
Lee, Myon Hee
Lee, Tammy D
Lewis, Travis Earl
Li, Yong Qing
Lin, Chia-Cheng
Lin, Ziwei
Liu, Haiyong
Liu, Yang
Lu, Qun
Maher, Derek F
Manda, Alex Kapolo
Mansfield, Kyle David
Massarra, Carol
McCarlie, Van Wallace
McClung, Joseph Matthew
McKinnon, Jeffrey
McRae, Susan B
Medina, Almitra
Militello, Matthew
This award is given annually to recognize East Carolina University faculty members who exemplify outstanding commitments to academic, professional, and personal development of graduate students through mentoring and advising. One award for mentoring master's students and one award for mentoring doctoral students is given each year. Each recipient receives $1,000 for professional expenses and is recognized during Research and Creative Achievement Week. The selection committee of faculty and graduate students considers traditional and innovative ways in which faculty members mentor graduate students. The selection committee considers evidence of success as an outstanding mentor; guiding students in their intellectual growth; helping them develop independent research interests; and fostering their development of communication, interpersonal, research, and professional skills.
ECU DISTINGUISHED GRADUATE
FACULTY MENTOR AWARD
DOCTORAL CATEGORY

Robert Carels
Department of Psychology
Thomas Harriot College of Arts and Sciences

Dr. Carels is a professor and a board-certified clinical health psychologist whose research focuses on developing more effective behavioral weight loss treatments through the application of theory-driven innovation and aims to better understand and combat weight stigma in its many forms. He is the Principal Investigator for a Health Resource Service Administration Graduate Psychology Education (HRSA GPE) training grant designed to train students in providing primary integrated care to the rural and underserved.

Dr. Carels is recognized for his ability to adapt his mentoring style to the specific doctoral students he mentors. One student wrote, “Dr. Carels is currently mentoring five graduate students...rather than requiring us to comply with his own style, Dr. Carels will adapt to our own individual preferences, becoming an ideal mentor for five different people.” The faculty who nominated Dr. Carels indicated he consistently puts his students first and does all he can to maintain the high academic caliber of ECU’s doctoral program in clinical health psychology.
ECU DISTINGUISHED GRADUATE
FACULTY MENTOR AWARD
MASTER’S CATEGORY

Virginia C. Stage
Department of Nutrition Science
College of Allied Health Sciences

Dr. Virginia C. Stage, PhD, RDN, is an Associate Professor in the Department of Nutrition Science and Director of the Food-based Early Education (FEEd) Lab (www.thefeedlab.org). She obtained her PhD in Nutrition Sciences from North Carolina State University, and her MS in Clinical Nutrition and BS in Nutrition & Dietetics from East Carolina University. Dr. Stage has received numerous awards including the Society for Nutrition Education & Behavior’s Early Career Award and most recently, NC State’s Outstanding Young Alumna Award. Dr. Stage’s research is housed under the FEEd Lab. From kitchen to classroom, her mission is to empower early childhood teachers’ and families with evidence-based strategies to improve children’s (3-5 year) dietary quality through early education, exposure, and access to healthy foods. After gaining a clear understanding of students’ background, past experiences, and personal interests, Dr. Stage puts them to work in the community. She strives to help students identify their professional purpose, recognize their strengths, and refine the skills they need to be successful in graduate school and their future career. Dr. Stage is recognized for her “selfless, persevering, committed” mentoring style. One student nominator wrote, “Dr. Stage’s mentorship turns mentees, like me, into future mentors. I know that if I had to count on one hand the most influential people in my life, she would be one of them. And I’m just one person, one story, one example of the powerful and life-changing result of Dr. Stage’s mentorship.” The faculty nominator noted that her mentoring always includes advocacy for important issues in nutrition science and her engagement with service-learning helps her students in immeasurable ways.
ANNUAL 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 2022 Master’s Theses Award: (1) Mathematics, Physical Sciences & Engineering, and (2) Humanities & Fine Arts. Awards are presented in two categories for the 2022 Doctoral Dissertation Award: (1) Mathematics, Physical Sciences & Engineering, and (2) Social Sciences, Business & Education.

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 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.
Many tissues in the body, especially bone, have exhibited adaptive responses to low magnitude, high frequency mechanical loading. However, the response of ligament to these types of mechanical loads is not well understood. Therefore, the purpose of this study was to identify the mechanisms by which ligaments respond in vivo to high-frequency, low-magnitude mechanical loading by identifying (1) if there is a response to this mechanical loading, and (2) what genes are altered in response to this mechanical loading on the ligament. The left ACL of seven rabbits were subjected to in vivo, low-magnitude, high-frequency mechanical loading for twenty minutes, in a novel mechanical loading device, the RACL loader. Three rabbits served as external controls and received no loading. Following four hours to allow for genetic response, the ACLs were harvested, and the RNA extracted to determine which genes were altered in expression in response to the loading. In response to mechanical loading, the loaded ACL had three genes differentially expressed compared to the internal control ACL. None of these three genes had annotations within the rabbit genome. The loaded ACL had 121 genes differentially regulated compared to the external control ACL (including 1 regulating collagen synthesis, and 15 with links to mechanotransductive pathways). This shows that there is a systemic response to mechanical loading in the ligament. Additionally, the genetic results shed light on the possible mechanotransduction response pathway in ligament. This study provides evidence that ligaments can be adapted through mechanical loading and may be used one day to strengthen a ligament for to reduce injury rates. 

https://thescholarship.ecu.edu/handle/10342/8778
Plantar foot ulcers are a severe and common complication associated with diabetes that overwhelmingly lead to non-traumatic major amputations among diabetic individuals. There are several known factors that contribute to the development of these ulcers; however, it is possible that stiffening of foot structures (i.e., muscles, tendons, ligaments) is another important factor that has yet to be fully investigated. Increased soft tissue stiffness on the plantar surface of the foot has been found in diabetic individuals, but stiffness of individual foot structures has yet to be investigated. It has been proposed in literature that stiffening of muscles and tendons in diabetic feet cause increased plantar pressures, which often precede development of ulcers. However, to date, no study has comprehensively examined stiffness of individual foot structures in diabetic individuals and the effect of stiffness on plantar pressures during gait. Therefore, the ultimate purpose of the following work was to investigate the relationship between foot structure stiffness and plantar pressures during gait in diabetic individuals. Firstly, it was hypothesized that stiffness of foot structures would be directly and linearly related to plantar pressures during gait. Secondly, it was hypothesized that diabetics would exhibit higher stiffness and higher plantar pressures than controls. There is also evidence of structural changes in the diabetic foot compared to controls, including thickening of the plantar fascia (PF) and Achilles tendon. Plantar fasciitis is a common musculoskeletal disorder that, like diabetes, is associated with thickening of the PF. To date, few studies have investigated material properties of the PF, and there are currently no studies that have assessed material properties of other arch supporting structures (i.e., muscles, tendons) . It is possible that, in addition to thickening of the PF, plantar fasciitis populations exhibit material property changes of the PF and other arch supporting structures that contribute to the plantar fasciitis injury mechanism. Investigating material properties of the PF and arch supporting structures and how these properties relate to plantar pressures in individuals with plantar fasciitis may help provide relevant information to injury development in the foot in plantar fasciitis and diabetic populations. results support the idea of foot structure stiffness relating to plantar pressures and more specifically, are suggestive of damage occurring to the plantar fascia that is directly influencing plantar pressure distributions and foot function in diabetic individuals and individuals with plantar fasciitis. Thus, stiffness may still be an important factor to consider in understanding alterations of foot function and potentially in the ulcer injury mechanism in diabetic individuals. Complete abstract available at: https://thescholarship.ecu.edu/handle/10342/7598
DOCTORAL DISSERTATION AWARD: SOCIAL SCIENCES, BUSINESS & EDUCATION

Natalie M. Richardson
College of Health and Human Performance, Department of Human Development and Family Science
Dissertation Director: Angela L. Lamson

Military service often requires engaging in activities, witnessing acts, or immediate decision-making that may violate the moral codes and personal values to which most individuals ascribe. If unacknowledged, these factors can lead to injuries that can affect the physical, psychological, social, and spiritual health of military men and women. The term moral injury has been assigned to these soul-ceasing experiences. Although researchers have attempted to define moral injury and what leads to such experiences, inconsistencies across definitions exist. In addition, nearly all existing definitions have lacked empirical support. Thus, an in-depth literature review, systematic review, and phenomenological qualitative study were completed to explore how moral injury has been conceptualized and defined across the literature and to respond to the need for an empirically-based, veteran-informed definitional understanding of such injuries. Findings from a qualitative study with United States veterans revealed that moral injuries can be conceptualized by chronic, deep-rooted experiences of (a) betrayal, (b) moral ambivalence, (c) soul injuries, and (d) lack of reconciliation. Recommendations for future research and clinical practice with moral injury must consider the systemic roots and implications for these injuries of the soul. Rather than viewing moral injury as a construct distinct to the field of psychology, trauma, or theology, applying a more systemic framework may be most appropriate for capturing the multi-level implications. For instance, a biopsychosocial-spiritual lens may support the cellular to society and spiritual implications of moral injuries. Additionally, Bronfenbrenner’s ecological theory was proposed as a potentially influential theory in grounding future assessments and interventions for the constructs by emphasizing the interplay between context, personal characteristics/values, and multi-level systemic influences on the development of moral injury. [http://hdl.handle.net/10342/8795]
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.

Biomedical Sciences  
Business  
Community Engagement  
Education  
Engineering  
Humanities  
Fine & Performing Arts  
Social Sciences  
Human Health  
Natural Sciences  
Sustainability & Innovation  
Technology & Computer Science
MASTER’S STUDENT AWARDS

Oral Awards

Natural Sciences
Nina Woodard
Mentor: Dr. Rachel Kelley Gittman
“Borrowing ecological principles: Influence of Substrate Orientation on Free-Living and Parasite Diversity”

Fine Arts
John Cannon Rhodes-Pruitt
Mentor: Dr. John Scott Eagle
“Information-Media the Transference of Information”
GRADUATE STUDENT AWARDS
Graduate Category Includes both Master's and Doctoral Students

Oral Awards

Biomedical Sciences
Mohammed G. Dorgham
Mentor: Dr. Kyle David Mansfield
“The Effects of m6A RNA Modifications on Breast Cancer Progression and EMT”

Education
Jocelyn Bayles Dixon
Mentor: Dr. Virginia Carraway Stage
“Connecting Kindergarten Readiness and Food-based Learning in the Head Start Preschool Classroom”

Human Health
Kimberly F. Delgado
Mentor: Dr. Donna W. Roberson
“Nursing Staff’s Role in Detecting Urinary Tract Infection in Nursing Homes: An Integrative Review”

Engineering
Matthew James Carroll
Mentor: Dr. Jinkun Lee
“Simulation of Traffic Network Performance with Human driving and Autonomous Vehicles”

Social Sciences
Lindsay Myers Wentzel
Mentor: Dr. Jason Thomas Raupp
GRADUATE STUDENT AWARDS
Graduate Category Includes both Master's and Doctoral Students

Poster

Biomedical Sciences
Mclane Montgomery
Mentor: Dr. Kelsey Fisher-Wellman
“Optimized protocol for the isolation and bioenergetic phenotyping of mouse colon mitochondria”

Education
Christina McCray
Mentor: Dr. Tammy Lee
“African American Students in Honors Level Sciences Classes”

Engineering
Mackenzie Wheeler
Mentor: Dr. Theresa Jean Ryan
“Mechanical Failure of Human Fetal Membrane Tissues in Premature Birth”

Human Health
Kenneth Michaud
Mentor: Dr. Stephanie Lynn Richards
“Risk Assessment for Japanese Encephalitis Virus in Hog Farms in North Carolina”

Natural Sciences
Haley Hagemeier
Mentor: Dr. April Blakeslee
“Parasite Diversity in the Invasive Asian Shorecrab, Hemigrapsus Sanguineus on the Eastern Coast of the United States”

Social Sciences
Marianne Congema
Mentor: Dr. Kim Larson
“Hydrotherapy Use and Maternal-Infant Outcomes”

Computer Science
Alicia Abrams
Mentor: Dr. Nic Herndon
“Expanding the Galaxy University of CartograPlant” Awards”
DOCTORAL STUDENT AWARDS

Oral

Natural Sciences
Todd Michael Mendenhall
Mentor: Dr. Ziwei Lin
“A semi-analytical method for calculating the QCD phase diagram trajectories of relativistic nuclear collisions”

Poster

Education
Dusk Stroud
Mentor: Dr. Heidi Puckett
“Face the Facts: Identifying Potential Socioeconomic Barriers that Impact Success for Students Enrolled at Lenoir Community College”

POSTDOCTORAL SCHOLAR AWARD

Poster

Biomedical Sciences
Berwin Singh Swami Vetha
Mentor: Dr. Azeez Aileru
“Functional Significance of Angiotensin Receptors in the Neuroplasticity of (mRen2)27 Transgenic Model of Hypertension”
UNDERGRADUATE STUDENT AWARDS

Oral Awards

Biomedical Sciences
Jennifer Painter
Mentor: Dr. John Christopher Mizelle
“Differences in Neurological Connectivity Between Right and Left Limb Dominant Individuals in Implicit Motor Sequence Learning”

Engineering
Zachary Pakulniewicz
Mentor: Dr. Yang Liu
“An Experimental Study on the Dynamics of Binder Drops Impacting on a Powder Surface in Binder Jetting Additive Manufacturing”

Social Sciences
Holly Batt
Mentor: Dr. Virginia Carraway Stage
“COVID-19’s Impact on Head Start Teachers’ Relationships, Health Behaviors, and Stress Levels”

Humanities
Alexander Teodorescu
Mentor: Dr. Cindy J. Elmore
“Teotography - A photo collection of North Carolina’s wilderness, wildlife and culture surrounding coastal areas”

Natural Sciences
Jessica Long
Mentor: Dr. Susan B. McRae
“Refining artificial incubation of chicken eggs: laying season and not size affects incubation period of eggs laid by multi-generational crossbred chickens”

Fine Arts
Evan Martschenko
Mentor: Dr. Mark Douglas Richardson
“Hexatonic Collections and Thematic Development in Frederic Rzewski’s Four Pieces for Piano”

Human Health
Luke Fogarty
Mentor: Dr. Van Wallace McCarlie
UNDERGRADUATE STUDENT AWARDS

Poster Awards

Biomedical Sciences
Hannah Coalson
Mentor: Dr. Kelsey Fisher-Wellman
“Mitochondrial alterations accompany forced differentiation in acute promyelocytic leukemia cells”

Community Engagement
Hannah Haynes
Mentor: Dr. Kim Larson
‘Leadership and technology use among adolescents at a Boys & Girls Club in Eastern North Carolina

Education
Hannah Dixon
Mentor: Dr. Timothy Christensen
“The Advantages of Executive Processing in Bilingual Students”

Engineering
Avery Vose
Mentor: Dr. Chia-Cheng Lin
“Next Generation Balance Test for Vestibular Hypofunction”

Fine Arts
Skyler Hall
Mentor: Dr. Gerald Weckesser
“A Look Inside Different Cultures Through Art’

Human Health
Sarah March
Mentor: Dr. Linda Bolin
“Exploring the Use of Heart Rate Variability in Coronavirus Disease 2019”
UNDERGRADUATE STUDENT AWARDS

Poster Awards Continued

Humanities
Imani Riddick-Cherry and Leah Beth Warren
Mentors: Dr. Bhibha Mayee Das and Chad Carwin
“UterUS: Changing the Perception of Menstrual Health on College Campuses”

Interdisciplinary Innovation
Hunter Pigg
Mentor: Dr. Tarek Abdel-Salam
“Numerical Analysis of Oscillating Wave Surge Converters Under Extreme Sea Conditions”

Natural Sciences
Ivan Martinez-Santoyo and Scott Siebor
Mentor: Dr. Ariane Legaspi Peralta
“Long-term nutrient enrichment effects on greenhouse gas production in a coastal plain wetland”

Social Sciences
Shae Malham
Mentor: Dr. Kristin Zenee Black
“The Mental Health Effects of Assisted Reproductive Technology”
THANK YOU TO EVERYONE WHO HELPED TO MAKE THIS WEEK POSSIBLE!!

Mary Farwell
Donna Kain
KT Harcourt-Medina
Kathy Cox
Yvonne Kao
Anja Burcak
Marquerite Bond
Margaret Macready
Heather Mahany Futrell
Paul Gemperline
Marti Van Scott
Seo Eo
Nehad Elsawaf
Carrie Lee Wilkerson
Annette Kariko & Continuing and Professional Education
Jennifer Harrell & Central Reservations Office
All our undergraduate & graduate student presenters
All our postdoctoral scholar presenters
All the mentors who support their students
The many judges and moderators who generously volunteered their time

And Especially To our 2022 RCAW Artist
RENO STRICKLAND for creating the outstanding RCAW “REVEAL” artwork

And
Dan Elliot, Faculty, School of Art and Design for allowing his art students to create RCAW designs each year as a class assignment

WE HOPE TO SEE YOU NEXT YEAR FOR 2023 RCAW – April 2023

https://gradschool.ecu.edu/research-creative-achievement-week/