Three Minute Thesis

October 24th, 2018
2:00 PM
Mendenhall Student Center
About 3MT

The Three Minute Thesis (3MT) is a research communication competition that challenges masters and predoctoral students to present a compelling oration on their research endeavors in just 3 minutes to a non-specialist audience. The first 3MT was held at the University of Queensland in 2008 with 160 graduate students competing. Enthusiasm for the 3MT concept has grown and its widespread implementation by universities has led to the development of an international competition. Today, the 3MT competition has grown to over 170 universities across more than 17 countries worldwide. East Carolina University (ECU) is excited to host its second annual 3MT event.

3MT Rules:
Each presentation will be judged on comprehension, content, engagement and communication. Each presentation is limited to a 3 minute maximum and competitors exceeding 3 minutes will be disqualified. Presentations are considered to have commenced when a presenter starts their presentation through movement or speech. Although a presenter is allowed to have a single static PowerPoint slide (No slide transitions, animations or ‘movement’ of any description are allowed), no additional electronic media (e.g. sound and video files) or props (e.g. costumes, musical instruments, laboratory equipment) are permitted. All presentation are required to be spoken word (e.g., no poems, raps or songs) and commence from the stage. The decision of the head judge and moderator is final.

3MT People’s Choice:
Each member of the audience can vote for their favorite presenter by writing down their name. Voting ballots will be given out at the beginning of the Championship Round. We ask audience members to submit only one ballot per round.

3MT Departmental Cup:
The Department Cup is given to the Department that has the three highest scoring presenters during the first round of Heats. The Department Cup is sponsored by the North Carolina Biotechnology Center.

Program Sponsors
The Graduate School
Research and instructional Services
The Speech Communication Center
The North Carolina Biotechnology Center
Special Acknowledgements

Event Committee
Tom McConnell, ECU Graduate School, 3MT Chair
Paul Gemperline, Dean, ECU Graduate School
Carlyle Rogers, 3MT Consultant, Office of Technology Transfer
Kathy Cox, ECU Graduate School
Shona Smith, ECU Graduate School and MBA candidate
Marquerite Latham, ECU Graduate School

3MT Workshops
Pamela Hopkins, The Speech Communication Center
Katy Webb, Research and Instructional Services

Video Services and Artwork
Mike Myles, ECU-TV
Emily Branch

Mentor List
Abdel Abdel-Rahman  Erik Everhart  Michael McCoy
Atta Ahmad    Charles Ewen   Xiaoping Pan
Eric Anderson  Rachael Gittman  Ariane Peralta
Chris Balakrishnan  Shoquan Huo  Megan Perry
Sharon Ballard  Robert Hughes  Roger Rulifson
David Chalcraft  Keith Keene  Teresa Ryan
Paul DeVita  James Loudon  Yong Zhu
Overview of Events

1:30 pm-1:45 pm | Judge and Presenter Check-In | MSC 244

2:00 pm-2:15 pm | Opening Ceremony | MSC 244

2:15 pm-3:00 pm | 3MT Heats

Heat 1 | Great Room 1

Heat 2 | Great Room 2

Heat 3 | Great Room 3

3:00 pm-3:10 pm | Networking | Corridor Outside MSC 244

3:10 pm-3:45 pm | Championship | MSC 244

3:10 pm-3:45 pm | Closing Ceremony | MSC 244

Judges

Kelly Andrews, Associate Director, Pitt County Development Commission
Robin Ashley, Business Instructor, Pitt Community College
Ariana Billingsley, Regional Center Director at Small Business Technology Development Center
Nicole Caswell, Associate Professor and Director of University Writing Centers
Yuexian Hong, Master’s student, College of Business
Pam Hopkins, Teaching Associate Professor & Director of Speech Communication Center
Jim Howard, Weather Person, WITN-TV
Shawn Moore, Director, Center for Science, Tech, Engineering, Mathematics Education
Nick Petraglia, Master’s Student, College of Business
1. PESTICIDE RUNOFF AND ITS IMPACTS ON THE ABILITY OF PREDATORY INSECTS TO SUPPRESS THEIR PREY
How pesticides affect the biodiversity of predatory insects in freshwater ponds and what that means for prey populations

Caroline Sorey and David Chalcraft, PhD; Department of Biology

2. WHY GRANDMA, WHAT A BIG HIP TORQUE YOU HAVE.
Exploring the age-related redistribution of walking joint torques and the variation in decrement of muscle strength

Ashley Moulder and Paul DeVita, PhD; Department of Kinesiology

3. MASS DETECTION USING A SUBORDINATE OSCILLATOR ARRAY
Using the notion of oscillator synchronization and energy return to detect the change in mass.

Jules Zapanta and Teresa Ryan, PhD; Department of Engineering

4. BETTER TOGETHER: OYSTER REEFS AND SALT MARSHES AS A DYNAMIC DUO
Testing novel reef substrates to prevent marsh erosion and stimulate oyster development in a North Carolina estuary.

Emory Wellman and Rachel Gittman, PhD; Department of Biology

5. THE RISK OF ASTHMA FOR CESAREAN SECTION BORN BABIES
Determining the association between microbes and immunity.

Kari Beasley and Xiaoping Pan, PhD; Department of Biology
6. NANOPARTICLES: THE TINY TERRORS IN YOUR TOOTHPASTE
Comparing the reproductive toxicity of different Metal Oxide nanoparticles and the regulation of gene expression in Caenorhabditis elegans

Thomas Thornburg and Xiaoping Pan, PhD; Department of Biology

7. FANTASTIC THINGS AND HOW WE FIND THEM

Kimberly Byrnes and Charles Ewen, PhD; Department of Anthropology

8. THE INFLUENCE OF CANNABIS ON SEXUAL FUNCTIONING AND SATISFACTION
Masters and Johnson’s sexual response cycle provides a framework for analyzing the influence of cannabis (marijuana) on sexual functioning and satisfaction.

Amanda Moser and Sharon Ballard, PhD; Department of Human Development & Family Science

9. THE ROLE OF SIDEROPHORES IN BRUCELLOSIS INFECTIONS
Does Brucebatin contribute to Brucellosis?

Dalton Chapman and Eric Anderson, PhD; Department of Biology

Judges: Ariana Billingsley, Yuexian Hong, Jim Howard
Moderator: Samantha Palethorpe
1. WE'RE ALL JUST HOSTS FOR SOMETHING
How habitat fragmentation creates hotspots for parasitic disease

Sarah Goodnight and Michael McCoy, PhD; Department of Biology

2. LIGHTENING THE LOAD
Alleviating the high cost of Platinum based Organic reactions.

Jacob Guthrie and Shoquan Huo, PhD; Department of Chemistry

3. EGG IMMATURE
How Estrogen and GPER (an Estrogen receptor), keep your eggs immature.

Marcus Williams and Yong Zhu, PhD; Department of Biology

4. DIABETES: SUGAR THAT SOURS WOMENS' HEARTS
Why diabetes mellitus intensely impacts women's heart health

Korin Leffler and Abdel Abdel-Rahman, PhD; Department of Pharmacology and Toxicology

5. DESIGN OF AN OPTICALLY TRIGGERED BIOSENSOR FOR ENVIRONMENTAL CHANGES IN LIVING CELLS
What if we could make Alzheimer's patients remember their own name and the faces of their beloved ones again? Studying the reasons behind Actin-cofilin rods formation will open doors for mechanism studies that will help scientists and doctors to reverse the formation process and thus reverse the Alzheimer disease.

Fatema Salem and Robert Hughes, PhD; Department of Chemistry-10PBS
6. METAL TOXICITY AND ALZHEIMER’S DISEASE
Discovering the pathway to Alzheimer’s Disease.

Kong Lor and Atta Ahmad, PhD; Department of Biology

7. SCURVY ISN’T JUST FOR SAILORS
Metabolic Disease in Infants and Young Children from Ottoman-Era Jordan

Emily Edwards and Megan Perry, PhD; Department of Anthropology

8. DISCOVERING “STOCKS” OF HICKORY SHAD
Using body shape analysis and a suite of analyses to identify spawning stocks of Hickory Shad.

Steven Meyer and Roger Rulifson, PhD; Department of Biology

9. SNAILS AND THE CITY
How warmer, cement-covered cities disrupt food chains.

Katherine Gordon and Michael McCoy, PhD; Department of Biology

Judges: Pam Hopkins, Nick Petraglia, Kelly Andrews
Moderator: Sasha Kirsanov
Heat 3 Presentations
Great Room 3 | 2:15 pm – 3:00 pm

1. FINDING THE LINK
Bridging the gap between genetics and recurrent stroke.

*Dunya Safa and Keith Keene, PhD; Department of Biology
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2. DIFFERENT STROKES FOR DIFFERENT FOLKS
A metabolomics approach to understanding recurrent stroke risk.

*Kelsey Spragley and Keith Keene, PhD; Department of Biology
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3. WHAT GOES IN MUST COME OUT: IMPROVING STORMWATER WETLAND DESIGN
Stormwater wetlands reduce nuisance flooding and improve water quality by removing pollutants but can also produce greenhouse gases. How do we balance the good and bad?

*Regina Bledsoe and Ariane Peralta, PhD; Department of Biology
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4. COLORS OF PRIMATE PELAGE
The Independent Evolution of Sexual Dichromatism in the Primate Order.

*Thomas Wilson and James Loudon, PhD; Department of Anthropology
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5. A BRUSH WITH DEATH
‘Gene’uses act FAST to save lives by discovering genetic variants in recurrent stroke patients, paving the way for personalized medicine.

*Catherine Darcey and Keith Keene, PhD; Department of Biology
6. THE KEY TO A PEACEFUL LIFE HIDDEN IN THE SIAMESE FIGHTING FISH
The Siamese Fighting Fish, long prized for its aggression, may hold the secret to the genetics behind what makes our blood boil, and help us control our anger.

Robert Driver and Christopher Balakrishnan, PhD; Department of Biology

7. I CAN READ YOUR MIND - AND YOU'RE IN PAIN
Utilizing EEG to measure Middle Alpha frequency in order to predict pain intensity

Taylor Zurlinden and Erik Everhart, PhD; Department of Psychology

8. A STROKE OF GENIUS
Correlations Between Genetic Single-Nucleotide Changes and Risk of Recurrent Stroke

Nicole Mitchell and Keith Keene, PhD; Department of Biology

Judges: Robin Ashley, Nicole Caswell, and Shawn Moore
Moderator: Ariel Myers
Thank You

The 3MT Committee would like to extend a warm thank you to all who participated and attended the 2018 East Carolina University Three Minute Thesis Competition. Without your generosity and expertise, this event would not have been possible. We sincerely appreciate your time and effort in making this event a success!

Please do not forget to view our website for any information on this and future 3MT events at www.ecu.edu/3MT
ECU Graduate School

East Carolina University currently offers 74 master's degree programs and 73 graduate certificate programs through our 11 colleges and schools. In addition, we offer 13 doctoral programs, 5 first professional programs, and hold the distinction of being classified among the Doctoral/Research Universities by the Carnegie Foundation. ECU is constantly striving to meet the evolving needs of our students, the people of North Carolina, the United States, and the world by providing educational, research, and outreach programs designed to address the challenges and opportunities of the 21st century. With over 1,100 full-time Graduate Faculty actively engaged in research & scholarly activity and $215 million in external research funding in the last 5 years, ECU has a program that can fulfill your academic and professional needs.

www.ecu.edu/gradschool