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Department of Marine Science
Gupta College of Science
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Education:

Ph.D. Zoology, 2013

Texas A&M University, Department of Biology
College Station, TX

M.S. Marine Biology and Coastal Zone Management, 2007

Nova Southeastern University, Oceanographic Center
Dania Beach, FL

B.A. Biology, 2003

The College of Wooster, Department of Biology
Wooster, OH

Teaching Experience:

Senior Lecturer – August 2020 – Present

Lecturer – August 2014 – August 2020

Coastal Carolina University, Department of Marine Science
Conway, SC

- Introduction to Marine Science Lecture & Laboratory
- Origin and Evolution of the Marine Environment Laboratory
- Marine Biology Lecture & Laboratory
- Biology of Sea Turtles Lecture, Laboratory, and Internship (Study Abroad)
- Earth Systems Science Laboratory
- Behavioral Ecology of Coastal Fauna (Directed Independent Study)

Visiting Assistant Professor – Georgia Southern University, Department of Biology
Statesboro, GA – August 2013 – July 2014

- Environmental Biology Lecture
- Introductory Biology I Laboratory
- Introductory Biology II Lecture & Laboratory
- Invertebrate Zoology Lecture & Laboratory
- Directed Independent Study

Biology Instructor – Blinn College, Department of Biology

Bryan, TX – August 2012 – May 2013

- Introductory Biology II Lecture & Laboratory

Teaching Assistant – Texas A&M University, Department of Biology
College Station, TX – August 2007 – May 2013

- Marine Biology Laboratory
- Invertebrate Zoology Laboratory
- Zoology Laboratory
- Introductory Biology II Laboratory
- Genes, Ecology, and Evolution Lecture
- Undergraduate Research

Teaching Assistant – Nova Southeastern University, Department of Biology
Dania Beach, FL – January 2004 – May 2007

- Introductory Biology II Laboratory
- Invertebrate Zoology Laboratory (graduate and undergraduate)
- Microbiology Laboratory

Environmental Educator – Build-a-Field-Trip, Inc.
Ft. Lauderdale, FL – January 2005 – May 2007

- Ecology, environmental science, and conservation with Florida school systems

Laboratory Assistant – The College Of Wooster, Department of Biology
Wooster, OH – January 2003 – May 2003

- Introduction to the Biology of Populations Laboratory

Research Experience and Interests:

Microplastics (2018 – Present)

- Prevalence and abundance of microplastics in fiddler crabs, ghost crabs, and their environment

Anthropogenic impacts on coastal ecosystems (2017 – Present)

- Beach development effects on population dynamics and behavior
- Effects of disturbance on population density, behavior, and stress levels
- Effects of impact level on recovery from major storm events
- Assessment of environmental health using bioindicators

Ghost crab ecology (2015 – Present)

- Population dynamics
- Territoriality
- Aggressive and defensive behaviors

Marine bird behavior (2015 – Present)

- Biotic and abiotic effects on foraging and flocking behaviors
- Behavioral factors affecting foraging success

Fiddler crab behavior (2008 – Present)

- Biotic and abiotic effects on foraging and social behaviors
- Courtship and territorial displays
- Examination of the “selfish herd” hypothesis

Oil Spill Recovery (2013 – 2014)

- Long-term assessment of a controlled spill in Panama
- Biological indicators of recovery
- Chemical analysis of sediment for spill residues

Dissertation (2008 – 2013)

- Chemical communication in fiddler crabs
- Interpopulation mate choice
- Factors affecting larval development and success
- Population genetics of fiddler crabs in the Gulf of Mexico

Ecological Assessment (2008 – 2009)

- Biological indicators of environment stress and recovery
- Benthic macrofaunal invertebrate identification

Master’s Thesis (2006 – 2007)

- Macrofaunal invertebrate population dynamics in a mangrove creek ecosystem

Independent Study (Undergraduate Thesis) (2000 – 2003)

- Factors affecting social, foraging, and cleaning behaviors in coral reef fish in the Bahamas

Agricultural Ecology (2000 – 2002)

- Field collections of coleoptera across Ohio
- Testing and assessing efficacy of chemical and biological based insect pest traps for agricultural use
- Identification and cataloging of coleoptera

Presentations:

Rosch, Eric. Ghosts in the storm: shifts in ghost crab population patterns following tropical storms in South Carolina 2016-2017. Southeastern Estuarine Research Society Meeting, Flagler College. St. Augustine, FL. 8-10 March 2018. Oral presentation.

Rosch, Eric. Factors affecting ghost crab (*Ocypode quadrata*) populations and burrow characteristics along the Grand Strand. Benthic Ecology Meeting Society and Southeastern Estuarine Research Society Joint Meeting, Myrtle Beach Convention Center. Myrtle Beach, SC. 12-16 April 2017. Oral presentation.

Burge, Erin; Guentzel, Jane; Abel, Daniel; Boneillo, George; Fribance, Diane; Fuss, Karen; Hill, Jenna; Koepfler, Eric; Libes, Susan; **Rosch, Eric**; Viso, Richard; and Young, Robert. The Experienced@Coastal program provides structured research opportunities for undergraduates in marine science. Coastal and Estuarine Research Federation (CERF) Conference, Portland, Oregon. 8-12 November 2015. Poster presentation.

Baca, Bart; **Rosch, Eric**; DiMicco, Erik; and Schuler, Paul. 2014. TROPICS: 30-year follow-up and analysis of mangroves, invertebrates, and hydrocarbons. Proceedings of the 2014 International Oil Spill Conference. Oral presentation.

Rosch, Eric. Chemical signals in mate choice and social interactions in the fiddler crab *Uca rapax*. The Animal Behaviour Society Meeting, University of New Mexico. Albuquerque, NM. June 2012. Oral presentation.

Rosch, Eric. Chemical signals in mate searching and potential rival deterrence in the fiddler crab *Uca rapax*. Texas A&M University Student/Post-doc Research Conference, Texas A&M University. College Station, TX. September 2011. Oral presentation.

Rosch, Eric. The use of chemical signals in the fiddler crab *Uca rapax*. The Crustacean Society Meeting, University of Hawaii. Honolulu, HI. June 2011. Oral presentation.

Rosch, Eric. The effect of group size on the feeding rate, aggressive interaction frequency, and cleaning behaviors of blue tangs (*Acanthurus coeruleus*) on Andros Island, Bahamas. The Ohio Academy of Science. April 2003. Poster presentation.

Mentored Undergraduate Research Presentations (student presenters underlined):

Conner, Caroline and **Rosch, Eric.** Microplastic concentration analysis of the Atlantic sand fiddler crab (*Leptuca pugilator*) in Murrells Inlet, South Carolina. Undergraduate Research Competition, Coastal Carolina University, 12-13 April 2022. Poster Presentation. *Awarded first place in the poster presentation category.

LaLumia, Meredith and **Rosch, Eric.** Territoriality of the Atlantic ghost crab, *Ocypode quadrata*, based on anthropogenic impact of private and public beaches. Southeastern Estuarine Research Society Meeting, Jekyll Island, GA, 24-26 March 2022. Poster Presentation. *Awarded first place in the undergraduate poster presentation category.

Kladler, Allison and **Rosch, Eric.** The effect of sunscreen on the life expectancy of *Palaemonetes pugio*. Undergraduate Research Competition, Coastal Carolina University, 21-22 April 2021. Oral Presentation (virtual). *Awarded first place in the oral presentation category.

LaLumia, Meredith and **Rosch, Eric**. Anthropogenic impacts on the territoriality of the Atlantic ghost crab, *Ocypode quadrata*, along the Grand Strand, South Carolina. Undergraduate Research Competition, Coastal Carolina University, 21-22 April 2021. Poster Presentation (virtual). * Awarded runner-up in the poster presentation category.

Rothwell, Madeline and **Rosch, Eric**. Tracking microplastics throughout a beach renourishment project on Pawley's Island, South Carolina. Undergraduate Research Competition, Coastal Carolina University, 21-22 April 2021. Poster presentation (virtual).

Green, Kiirah and **Rosch, Eric**. Claw function as a thermoregulatory structure in male sand fiddler crabs (Genus *Uca*). Marine Science Research Symposium, Coastal Carolina University. Conway, SC. 9 December 2019. Poster presentation.

Harding, Bailey and **Rosch, Eric**. Paired ghost crab burrow morphology: an analysis of shape, angle, and seasonal variation. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 16-17 April 2019. Oral presentation.

Hayes, Taylor and **Rosch, Eric**. Spatial distribution and behavioral patterns in American alligators (*Alligator mississippiensis*) at Huntington Beach State Park, SC. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 16-17 April 2019. Oral presentation.

Forbes, Gabrielle; Gleich, Callista; Brotemarkle, Kayla and **Rosch, Eric**. Microplastics in fiddler crabs. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 16-17 April 2019. Poster presentation.

Pase, Ann-Marie and **Rosch, Eric**. An analysis of population density and body condition in fiddler crabs (Genus: *Uca*) compared between areas of high and low levels of human disturbance. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 16-17 April 2019. Poster presentation.

Hobdy, Anne and **Rosch, Eric**. The effects of human approach on sanderling foraging behavior. Southeastern Estuarine Research Society Meeting, University of North Carolina Wilmington. 7-9 March 2019. Poster presentation.

Pase, Anne-Marie and **Rosch, Eric**. An analysis of population density and body condition in fiddler crabs (Genus: *Uca*) compared between areas of high and low levels of human disturbance. Southeastern Estuarine Research Society Meeting, University of North Carolina Wilmington. 7-9 March 2019. Poster presentation.

Scheuermann, Mackenzie and **Rosch, Eric**. Examining territoriality in the Atlantic ghost crab, *Ocypode quadrata*, based on burrow characteristics. Southeastern Estuarine Research Society Meeting, University of North Carolina Wilmington. 7-9 March 2019. Poster presentation.

Harding, Bailey and **Rosch, Eric**. Paired ghost crab burrow morphology: an analysis of shape, angle, and seasonal variation. Marine Science Research Symposium, Coastal Carolina University. Conway, SC. 3 December 2018. Poster presentation.

Pase, Ann-Marie and **Rosch, Eric**. An analysis of population density and body condition in the fiddler crabs *Uca pugilator* and *U. pugnax* compared between areas of high and low levels of human impact. Marine Science Research Symposium, Coastal Carolina University. Conway, SC. 3 December 2018. Poster presentation.

Ward, Emeline, **Rosch, Eric**; Parker, Scott; and Boneillo, George. Histological analysis of limb bud development during regeneration in fiddler crabs. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 11-12 April 2018. Poster presentation.

Green, Kiirah and **Rosch, Eric**. Assessing the behavioral change in aggression of male sand fiddler crabs (*Uca pugilator*) after temporary amputation or autotomization of a claw Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 11-12 April 2018. Poster presentation.

Masterson, Logan and **Rosch, Eric**. Ontogenetic changes in ghost crab behavior: size and gender effects. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 11-12 April 2018. Poster presentation.

Bertelsen, Olivia and **Rosch, Eric**. An evaluation of ghost crab (*Ocypode quadrata*) territoriality and the role humans play at two locations along the northern South Carolina coast. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 11-12 April 2018. Poster presentation.

Harding, Bailey and **Rosch, Eric**. Sand compaction and ghost crab burrows: an analysis of morphology and volume. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 11-12 April 2018. Oral presentation.

Metcalf, Carley and **Rosch, Eric**. Intruder alert! Fiddler crab response to a same-species invader. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 11-12 April 2018. Oral presentation.

Metcalf, Carley and **Rosch, Eric**. Intruder alert! Fiddler crab response to a same-species invader. Association of Southeastern Biologists Meeting, Myrtle Beach Convention Center. Myrtle Beach, SC. 28-31 March 2018. Oral presentation.

Harding, Bailey and **Rosch, Eric**. Sand compaction and ghost crab burrows: an analysis of morphology and volume. Association of Southeastern Biologists Meeting, Myrtle Beach Convention Center. Myrtle Beach, SC. 28-31 March 2018. Oral presentation.

Ward, Emeline; **Rosch, Eric**; Parker, Scott; and Boneillo, George. Histological Analysis of limb bud development during regeneration in fiddler crabs. Southeastern Estuarine Research Society Meeting, Flagler College. St. Augustine, FL. 8-10 March 2018. Poster

presentation. *Awarded student travel award and tied for 1st place best undergraduate poster.

Masterson, Logan and **Rosch, Eric**. Ontogenetic changes in ghost crab behavior: size and gender effects. Southeastern Estuarine Research Society Meeting, Flagler College. St. Augustine, FL. 8-10 March 2018. Poster presentation. *Awarded student travel award and tied for 1st place best undergraduate poster.

Harding, Bailey and **Rosch, Eric**. Sand compaction and ghost crab burrows: an analysis of morphology and volume. Southeastern Estuarine Research Society Meeting, Flagler College. St. Augustine, FL. 8-10 March 2018. Oral presentation. *Awarded student travel award and 1st place best undergraduate oral presentation.

Harding, Bailey and **Rosch, Eric**. Sand compaction and ghost crab burrows: an analysis of morphology and volume. Marine Science Research Symposium, Coastal Carolina University. Conway, SC. 28 November 2017. Poster presentation.

Presley, Emily and **Rosch, Eric**. Relationship between burrow and mound size in *Ocypode quadrata*. Marine Science Research Symposium, Coastal Carolina University. Conway, SC. 28 November 2017. Poster presentation.

Davis, Sarah and **Rosch, Eric**. Human development and coastal zone impacts on the behavior of the ghost crab *Ocypode quadrata*. Benthic Ecology Meeting Society and Southeastern Estuarine Research Society Joint Meeting, Myrtle Beach Convention Center. Myrtle Beach, SC. 12-16 April 2017. Oral presentation.

Davis, Sarah and **Rosch, Eric**. Human development and coastal zone impacts on the behavior of the ghost crab *Ocypode quadrata*. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 11-12 April 2017. Oral presentation.

Johnson, James; Manns, Carrigen; and Rosch, Eric. Assessing the impacts of Hurricane Matthew on ghost crab populations and an examination of morphometrics. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 11-12 April 2017. Poster presentation.

Evans, Savana and **Rosch, Eric**. Testing ghost crab (*Ocypode quadrata*) digging behavior in different environments. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 11-12 April 2017. Poster presentation.

Campbell, Brooke and **Rosch, Eric**. The effects of sediment compaction on ghost crab burrowing behavior. Celebration of Inquiry, Coastal Carolina University. Conway, SC. 11-16 April 2016. Oral presentation.

Carter, Emily and **Rosch, Eric**. Testing the selfish herd hypothesis in fiddler crabs. Celebration of Inquiry, Coastal Carolina University. Conway, SC. 11-16 April 2016. Oral presentation.

Caughron, Juliane; Chaney, Abbey; and **Rosch, Eric**. Evaluation of variables effecting foraging success rates in eastern brown pelicans (*Pelecanus occidentalis carolinensis*) on the South Carolina coast. Celebration of Inquiry. Conway, SC. 11-16 April 2016. Oral presentation.

Caughron, Juliane; Chaney, Abbey; and **Rosch, Eric**. Evaluation of variables effecting foraging success rates in eastern brown pelicans (*Pelecanus occidentalis carolinensis*) on the South Carolina coast. Southern Regional Honor's Council Meeting. Orlando, FL. 30 March – 2 April 2016. Oral presentation.

Brun, Tyler and **Rosch, Eric**. Trematode metacercariae prevalence and intensity in *Uca minax*, *U. pugnator*, and *U. pugnax*, at Waties Island, SC. Southeastern Estuarine Research Society Meeting, University of South Carolina Beaufort. Bluffton, SC. 10-12 March, 2016. Poster presentation.

Campbell, Brooke and **Rosch, Eric**. The effects of sediment compaction on ghost crab burrowing behavior. Southeastern Estuarine Research Society Meeting, University of South Carolina Beaufort. Bluffton, SC. 10-12 March 2016. Poster presentation.

*Awarded student travel award and 1st place best undergraduate poster.

Caughron, Juliane; Chaney, Abbey; and **Rosch, Eric**. Evaluation of variables effecting foraging success rates in eastern brown pelicans (*Pelecanus occidentalis carolinensis*) on the South Carolina coast. Southeastern Estuarine Research Society Meeting, University of South Carolina Beaufort. Bluffton, SC. 10-12 March 2016. Poster presentation.

Roberts, Hayden and **Rosch, Eric**. A study on ghost crab burrowing behavior vs. lunar stage. Southeastern Estuarine Research Society Meeting, University of South Carolina Beaufort. Bluffton, SC. 10-12 March 2016. Poster presentation.

Smith, Mickayla; Guentzel, Jane; **Rosch, Eric**; and Stoughton, Margaret. The sea floor: A living learning residential community. Southeastern Estuarine Research Society Meeting, University of South Carolina Beaufort. Bluffton, SC. 10-12 March 2016. Poster presentation.

Westwater, Erica and **Rosch, Eric**. Factors affecting ghost crab burrow morphology in Horry County, South Carolina. Southeastern Estuarine Research Society Meeting, University of South Carolina Beaufort. Bluffton, SC. 10-12 March 2016. Oral presentation.

Guentzel, Jane; **Rosch, Eric**; Stoughton, Margaret; Bowyer, Ryan; Mortensen, Kathryn; and Smith, Mickayla. Ocean Sciences Meeting, New Orleans, LA. 21-26 February 2016. Poster presentation.

Aulffo, Tyler and **Rosch, Eric**. Abundance, distribution, and physical properties of ghost crab burrows in Horry County, SC. Undergraduate Research Competition, Coastal Carolina University. Conway, SC. 14 April 2015. Poster presentation.

Muellner, Julius and **Rosch, Eric**. Aggression in *Uca pugilator* is associated with size and neighbor identity. Student Research Symposium, Georgia Southern University. Statesboro, GA. 22 April 2014. Poster presentation.