

Amanda M. Barker

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EDUCATION

Texas A&M University- Corpus Christi

Ph.D. Marine Biology (Expected graduation: Fall 2019)

Dissertation: *Population genomics and molecular ecology of the scalloped hammerhead (Sphyrna lewini) and Carolina hammerhead (Sphyrna gilberti)*

Advisor: Dr. David S. Portnoy

GPA: 4.0

University of California San Diego

M.S. Biology (2014)

Thesis: *The genetic structure of leopard shark (Triakis semifasciata) populations along the Pacific coast of North America*

Advisor: Dr. Ronald S. Burton

GPA: 3.86

B.S. Ecology, Behavior and Evolution (2012)

Minor: Marine Science

Provost Honors: Fall 2011

GPA: 3.37

RESEARCH EXPERIENCE

Graduate Research Assistant (Aug 2014- Present)

Texas A&M University- Corpus Christi

- Conservation genomics of exploited marine species using next-generation sequencing techniques
- Assist in management of bottom longline survey

Lab Assistant (Apr 2013 – Jul 2014)

Scripps Institution of Oceanography

- Analyze water samples using microscopy and molecular techniques to detect the presence of invasive quagga mussels

Lab Assistant (Sep 2012- Jul 2014)

Southwest Fisheries Science Center (NOAA)

- Sort fish eggs and larvae from CalCOFI survey zooplankton samples

Graduate Research Assistant (Jan 2012- Mar 2014)

Scripps Institution of Oceanography

- Investigate population structure of leopard sharks using microsatellites and mitochondrial DNA

Field Assistant (June 2011- Sep 2011)

Scripps Institution of Oceanography

- Assist with handling, tagging and tracking of leopard sharks
- Provide care and monitor leopard shark adults and pups housed in experimental aquarium

Lab Assistant (Oct 2010- Dec 2011)

Scripps Institution of Oceanography

- Assist in the creation, maintenance, and quality control of a large and detailed fisheries database of weekly recreational landing reports compiled from 1952-2011

PUBLICATIONS

- **Barker AM**, Adams DA, Driggers III WB, Frazier BS, Portnoy DS. Hybridization between sympatric hammerhead sharks in the western North Atlantic Ocean. *In review*.
- **Barker AM**, Frazier BS, Gelsleichter J, Grubbs RD, Hollenbeck CM, Portnoy DS. High rates of genetic polyandry in the blacknose shark, *Carcharhinus acronotus*. *In review*.
- **Barker AM**, Frazier BS, Bethea DM, Gold JR, Portnoy DS (2017) Identification of young-of-the-year great hammerhead *Sphyrna mokarran* in Northern Florida and South Carolina. *Journal of Fish Biology*, 472, 151-157.
- Bellquist LF, Graham JB, **Barker A**, Ho J, Semmens BX (2016) Long-term dynamics in “trophy” sizes of pelagic and coastal pelagic fishes among California recreational fisheries (1966–2013). *Transactions of the American Fisheries Society*, 145, 977–989.
- **Barker AM**, Nosal AP, Lewallen EA, Burton RS (2015) Genetic structure of leopard shark (*Triakis semifasciata*) populations along the Pacific coast of North America. *Journal of Experimental Marine Biology and Ecology*, 472, 151-157.

TEACHING EXPERIENCE

Genetics (Teaching Assistant, Fall 2016 & Spring 2017)

Texas A&M University- Corpus Christi, Department of Life Sciences

- Course description: Principles of genetic transmission and molecular basis of heredity and variation
- Lead two weekly recitation sections that involve team assignments and problem-solving activities to reinforce material learned in lecture.

The Oceans (Teaching Assistant, Fall 2013)

UC San Diego, Scripps Institution of Oceanography

- Course description: Introduction to physical and biological oceanography, marine geology, and marine chemistry.
- Lead two weekly discussion sections that included lecture material review and problem solving

Organismal and Evolutionary Biology (Teaching Assistant, Spring 2012)

UC San Diego, Department of Biological Sciences

- Course description: Overview of the principles of evolution and diversity of life
- Lectures given by professor were open discussions on topic of the professor’s choice; teaching assistants taught all tested curriculum during weekly discussion sections
- Led one weekly discussion, created course examinations and weekly quizzes

ADDITIONAL TRAINING

ConGen 2017 (September 25-30, 2017)

Flathead Lake Biological Station, University of Montana

- Intensive workshop providing training in advanced molecular techniques and analyses to understand the ecological and evolutionary genomics of populations of conservation concern

PRESENTATIONS

- Oral presentation, Joint Meeting of Ichthyologists and Herpetologists 2018
- Oral presentation (Lightening talk), Texas A&M University Marine Biology IDP Retreat 2017
- Oral presentation, American Elasmobranch Society Meetings 2016
- Poster presentation, Texas A&M University Marine Biology IDP Retreat 2016
- Poster presentation, American Elasmobranch Society Meeting 2015
- Oral presentation, American Elasmobranch Society Meeting 2013
- Poster Presentation, UC San Diego Division of Biological Studies Student Research Showcase 2013

AWARDS AND GRANTS

- Texas A&M University- Corpus Christi Marine Biology Research Assistantship (2018-2019): \$19,800
- R.N. "Dick" Conolly Endowed Scholarship (2017-2018): \$500
- Texas A&M University Parent's Council Travel Award (2017): \$350
- American Genetics Association Travel Award (2017): \$400
- College of S&E Graduate Scholarship (2017): \$1000
- Texas A&M University- Corpus Christi Marine Biology Research Assistantship (2017-2018): \$19,800
- College of S&E Graduate Scholarship (2016): \$1000
- Texas Sea Grant Grants-in-Aid of Graduate Research (2015): \$1900
- Texas A&M University Parent's Council Travel Award (2015): \$500
- CJ Davidson Scholarship Endowment (2014): \$1000
- College of S&E Graduate Scholarship (2014): \$1000

PROFESSIONAL AFFILIATIONS

- American Fisheries Society
- American Fisheries Society TAMU-CC Student Subunit
- American Elasmobranch Society

SKILLS & QUALIFICATIONS

- *Laboratory*: DNA extraction, PCR, agarose & polyacrylamide gel electrophoresis, ddRAD library preparation, microscopy, skeletal preparation, fish identification
- *Field*: Tissue collection, longline fishing, gillnet fishing, electrofishing, handling and tagging elasmobranchs, boating and trailering
- *Computational*: R, Python, Linux, bioinformatics