

TRACY ANN ZIEGLER

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Career interests: Conservation biology; marine ecology; animal behavior; fisheries ecology; reproductive physiology; marine invertebrates.

EDUCATION

DOCTOR OF PHILOSOPHY, December 2007

Department of the Environment

The Graduate School

Duke University, Durham, NC

Dissertation: Larval release rhythms and larval behavior of the Caribbean spiny lobster, *Panulirus argus*.

Concentration: Applied ecology; fisheries biology with emphasis on reproductive physiology and biological rhythms in the marine environment.

MASTER OF SCIENCE, *magna cum laude*, May 2002

Biological Sciences, Florida Institute of Technology, Melbourne, FL

Thesis: Larval release behaviors in ovigerous blue crabs, *Callinectes sapidus*.

Honors: Graduate Student of the Year, 2001; 1st Place Poster Presentation, 2001 Graduate Student Symposium.

BACHELOR OF SCIENCE, *magna cum laude*, December 1999

University of Maryland Baltimore County, Baltimore, MD

Double major: Biological sciences and History.

Honors: Golden Key National Honor Society; Tri Beta Honor Society.

PROFESSIONAL EXPERIENCE

Duke University Marine Laboratory, Beaufort, NC

Postdoctoral Researcher/Principal Investigator. Lead scientist for North Carolina Sea Grant addressing effects of pot stress on embryo development and larval survival by ovigerous blue crabs, *Callinectes sapidus*. Assess the effect of being caught in crab pots on the survival and future clutch production of female blue crabs. By estimating fecundity and clutch variability, we can predict the reproductive potential of pot-caught sponge crabs returned to the fishery. June 2007-May 2008

Artificial Reef Enhancement Project Manager. Organize, schedule, coordinate, and plan dive charters to artificial reefs in North Carolina. Conduct point fish counts, belt transects, and invertebrate surveys to understand the mechanisms involved in recruitment and species density at artificial reefs that were enhanced with prey compared to reefs that were not enhanced. Took charge of a staff of seven and over 45 volunteers. Performed professional work related to fisheries resources, management, monitoring, and habitat restoration. April-December 2007

Marine Biologist. Conducted original research on spawning behavior of spiny lobsters and mechanisms involved in larval transport. Supervised undergraduate and master students with independent research on topics of activity rhythms of intertidal hermit crabs, larval release patterns of hermit crabs. 2002-2007

Biology Research Assistant/Research Team Leader, Florida Institute of Technology, Melbourne, FL

Investigated migratory patterns and spawning behaviors for Atlantic blue crabs.

Experiments designed to determine temporal and spatial patterns of larval release to establish spawning sanctuaries for female blue crabs. Females release larvae at morning high tides to increase the chances of larval dispersal of offshore nursery grounds. January-May 2002

Park Ranger/Interpretive Tour Guide, US Department of the Interior, Fort McHenry National Monument and Historic Shrine, Baltimore, MD

Designed and led historical and archeological tours. Assisted in the curation of zoological specimens and researched past archeological documents. 1998-1999

TEACHING EXPERIENCE

National Science Foundation K-12 Lead Teaching Fellow, Duke University Marine Laboratory and East Carteret High School, Beaufort, NC

Teaching Fellows draw on their research activities, bringing insights gained about coastal/marine topics to promote a passion for understanding and applying science through hands-on, interdisciplinary learning experiences. Supervised six Teaching Fellows presenting year-long high school education programs in marine and environmental science. Conceptualized and taught marine ecology, invertebrate zoology, oceanography, and marine policy classroom learning programs and supplemental field trips. 2003-2005

Invited Lecturer, Carteret Community College, Morehead City, NC

Presented seminars on physiology, zoology, and conservation biology. 2005-2007

Biology Teaching Assistant, Florida Institute of Technology, Melbourne, FL

Taught invertebrate zoology and marine ecology laboratory classes. Educated students in hypothesis formation, experimental design, statistical analysis, behavioral ecology and physiology of marine animals. 2000-2002

SELECTED PUBLICATIONS

Ziegler, T. A., L. A. Anderson, R. B. Forward, Jr. 2007. Rhythms in larval release of the Caribbean spiny lobster *Panulirus argus* and the spotted spiny lobster *Panulirus guttatus*. Submitted to *Marine Ecology Progress Series*.

Ziegler, T. A., R. B. Forward, Jr. 2007. Larval release behaviors in the Caribbean spiny lobster, *Panulirus argus*: Role of peptides. *Journal of Chemical Ecology* 33:1795-1805.

Ziegler, T. A., R. B. Forward, Jr. 2007. Control of egg hatching in the Caribbean spiny lobster, *Panulirus argus*: Role of chemical cues. *Marine Biology* 152(3):589-597.

Gusev, O., T. A. Ziegler, M. Saigusa. 2006. Expression and structure of stress chaperon hsp90 in terrestrial decapods, *Coenobita* (Anomura: Coenobitidae) and *Chromantes* (Brachyura: Sesarmidae). *Crustacean Research* 6:103-113.

Ziegler, T. A., R. B. Forward, Jr. 2006. Larval release behaviors of the striped hermit crab, *Clibanarius vittatus* (Bosc): temporal pattern in hatching. *Journal of Experimental Marine Biology and Ecology* 335(2):245-255.

Hideki, I., Y. Hirano, T. A. Ziegler, M. Saigusa. 2006. Induction of hatching by chemical signals secreted by the ovigerous female of the estuarine crab *Sesarma haematocheir*. *Journal of Experimental Zoology* 05A:459-471.

Ziegler, T. A., R. B. Forward, Jr. 2005. Larval release rhythms in the mole crab *Emerita talpoida*. *Biological Bulletin* 209(3):194-203.

SELECTED PRESENTATIONS

Ziegler, T. A., L. A. Anderson, R. B. Forward, Jr. March 2007. Rhythms in larval release of the Caribbean spiny lobster, *Panulirus argus* and the spotted spiny lobster, *Panulirus guttatus*. Oral Presentation, Benthic Ecology Meeting, Atlanta, GA.

Ziegler, T. A., B. S. Waters. February 2005. Scientists in Schools: A partnership between Duke University Marine Laboratory and Carteret County, North Carolina public schools. Oral Presentation, American Society of Limnology and Oceanography Aquatic Sciences Conference, Salt Lake City, UT.

Ziegler, T. A., R. B. Forward, Jr. January 2003. Larval release rhythms in the mole crab *Emerita talpoida*. Poster Presentation at Society of Integrative and Comparative Biologists Conference, New Orleans, LA.

ADDITIONAL INFORMATION

SCUBA: 280+ logged dives for scientific research, aquarium collection, navigation, and salvage, in varying water temperatures, visibility conditions, and environments. Dive Safety Control Board Member, Duke University, 2005-2008. Data analysis skills using SigmaPlot, SigmaStat, S-plus, SAS, MatLab, and Oriana.