

Lauren M. Stefaniak, Ph.D.

Coastal Carolina University, Department of Marine Science
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Education

University of Connecticut, Marine Sciences

Ph.D. May 2012

Dissertation Title: *Didemnum vexillum*: Identity, Origin, and Life History of an Invasive Ascidian

Advisor: Dr. Robert B. Whitlatch

Cornell University, Ecology & Evolutionary Biology

B.A. May 2003 (Magna cum Laude)

Thesis Title: Are there costs to being bored? Interactions between the common periwinkle *Littorina littorea* and a boring sponge

Advisor: Dr. Myra J. Shulman

Employment

- Assistant Professor, Coastal Carolina University, August 2018 – Present
- Limited-term Assistant Professor, Georgia Southern University, August 2016 – May 2018
- Post-doctoral Associate, Georgia Southern University, April 2014 – July 2016
- Post-doctoral Research Fellow, University of Connecticut, August 2012 – March 2014
- Research Technician, University of Connecticut, June 2012 – August 2012
- Graduate Assistant, University of Connecticut, August 2005 – May 2012
- Intern, Smithsonian Environmental Research Center, June 2005 – August 2005
- Research Assistant, University of Iowa, March 2005 – June 2005
- Laboratory Manager, University of Iowa, October 2003 – October 2004
- Research Intern, Georgia Institute of Technology, Summer 2003

Teaching Experience

Assistant Professor, Department of Marine Science, Coastal Carolina University, August 2018 – Present

- Marine Biology Lecture: Prepared and delivered lectures on concepts in marine biology, including biodiversity, major habitats, abiotic and biotic interactions, and human interactions with the marine environment.
- Marine Biology Laboratory: Led laboratory exercises and field trips focused on observation, data collection, data analysis, and scientific communication within the field of marine biology. Revised activities and student assessments. Designed a new activity on biodiversity. Contributed to modifying laboratory activities for virtual delivery to accommodate disruptions due to hurricanes and COVID-19.
- Introduction to Marine Science Lecture: Prepared and delivered lectures on concepts in marine geology, marine chemistry, physical oceanography, and marine biology. Adapted lecture and homework activities for virtual delivery to accommodate disruptions due to COVID-19.
- Introduction to Marine Science Laboratory: Led laboratory exercises and field trips on concepts in marine science (geology, chemistry, biology, and physical oceanography). Contributed to modifying laboratory activities for virtual delivery to accommodate disruptions due to COVID-19.

Limited-term Assistant Professor, Department of Biology, Georgia Southern University, August 2016 – May 2018

- General Biology Lecture: Lectured on concepts and applications of biology, including the scientific method, scientific literacy, cell organization, genetics, diversity of life, plant and animal structure and function, evolution, and our impact on the environment (Non-majors core requirement)
- Principles of Biology I & II Laboratory: Led laboratory exercises in the applications of cellular and molecular biology and the diversity of life with emphasis on experimental design and data analysis (Biology majors)
- Microbiology Laboratory: Led laboratory exercises on handling and culturing of various microorganisms and interpreting serological and biochemical tests to ascertain microbial identities (Pre-health & biology majors)

Visiting Academic Staff, Sugashima Marine Biological Laboratory, Graduate School of Science, Nagoya University, Toba, Japan, July 2017, 2018 & 2019

- Advanced Marine Biology Summer Course: Lectured on molecular phylogenetics and molecular taxonomy; Led and assisted with laboratory exercises in intertidal and plankton collection techniques and invertebrate zoology

Instructor, Georgia Southern University & Universidad Nacional Autónoma de México, Unidad Académica de Sistemas Arrecifales, Puerto Morelos, México, July – August 2015

- Coral Reproduction Course: Lectured on effects of UV radiation on coral embryos; Trained and supervised students on coral spawn collection and coral embryo rearing

Invited Instructor, Sugashima Marine Biological Laboratory, Nagoya University, Toba, Japan, June – July 2015

- Advanced Marine Biology Summer Course: Lectured on molecular taxonomy, basic molecular biology, DNA markers, population genetics of invasive species, and general marine invertebrate zoology; Led and assisted with laboratory exercises in intertidal collection techniques, invertebrate zoology, ascidian taxonomy, DNA extraction, PCR, DNA sequencing, and molecular data analysis

Guest Lecturer, University of Georgia, Athens, GA, April 2015 & 2016, Nov 2015 & 2016

- Scientific Diving: Lectured on underwater benthic monitoring and sampling techniques

Guest Co-Instructor, University of Connecticut, Groton, CT, Spring 2012

- Biological Oceanography: Lectured on benthic and deep sea environments for graduate/undergraduate course

Graduate Teaching Assistant, Marine Biology Laboratory, University of Connecticut, Storrs, CT, Fall 2008 – Fall 2011

- Marine Biology Laboratory: Revised, designed, and led new laboratory exercises; Prepared and delivered laboratory lectures for undergraduate course; Collected organisms for laboratory from Long Island Sound

Research Experience

Ascidian Taxonomist, BioBlitz Survey, June 2019

Oregon Institute-Marine Biology, University of Oregon, Charleston, OR 97420

- Collected and identified ascidians at field sites in and near Coos Bay, OR

Post-doctoral Associate, Georgia Southern University, April 2014 – July 2016

Dr. Daniel Gleason, Institute for Coastal Plain Science, Georgia Southern University, Statesboro, GA

- Designed and conducted experiments on UV damage repair in Caribbean reef corals
- Planned and conducted ascidian distribution surveys on coastal Georgia docks
- Expanded the Gray's Reef Invertebrate Collections (GRIC) housed at Georgia Southern University; Collected, identified, and cataloged ascidians in the GRIC; Conducting DNA barcoding program for ascidians from the Gray's Reef National Marine Sanctuary
- Conducted benthic invertebrate surveys on offshore, Georgia live bottom reefs
- Conducted field experiments to determine impact of Georgia riverine output on offshore reefs

Post-doctoral Research Fellow, University of Connecticut, August 2012 – March 2014

Dr. Peter Auster, Dept. Marine Sciences & NURTEC, University of Connecticut, Groton, CT 06340

- Conducted pilot study to assess approaches for ecological mapping of epifaunal communities in deep waters of Long Island Sound; used GIS to create benthic habitat maps; collected images and benthic samples using remote camera systems and closed circuit rebreather diving
- Developed map products for use by policy decision makers, managers, and stakeholders in Long Island Sound
- Project lead, research cruises (R/V Connecticut): 10 – 17 October 2012 & 21 – 24 May 2013

Research Technician, University of Connecticut, June 2012 – August 2012

Dr. Robert Whitlatch, Dept. Marine Sciences, University of Connecticut, Groton, CT 06340

- Managed and conducted field and laboratory experiments in benthic invertebrate recruitment, and predation on benthic organisms; conducted photo surveys of benthic communities using SCUBA
- Supervised undergraduate lab interns

Graduate Assistant, University of Connecticut, August 2005 – May 2012

Dr. Robert Whitlatch, Dept. Marine Sciences, University of Connecticut, Groton, CT 06340

- Managed and conducted field and laboratory experiments in benthic recruitment, competition of sessile marine organisms, and predation on benthic organisms; deployed and collected experiments from the field using SCUBA
- Supervised undergraduate lab interns
- Applied molecular approaches to determine conspecificity and region of origin in *Didemnum vexillum*
- Quantified aspects of life history cycle of *Didemnum vexillum*

Ascidian Taxonomist, Smithsonian Marine Station, December 2010

Dr. Chris Meyer, Smithsonian Natural History Museum, Washington, D.C. 20560

- Identified ascidians from the Indian River Lagoon, FL to assess usefulness of hard substrate community collectors in subtropical lagoon habitats

Ascidian Taxonomist, Rapid Assessment Survey, 2007, 2010, & 2013

Massachusetts Coastal Zone Management, Boston, MA 02114 & MIT SeaGrant, Cambridge, MA 02142

- Collected and identified ascidians at field sites in RI, MA, NH, and ME

Laboratory Manager/Research Assistant, University of Iowa, October 2003 – October 2004/March 2005 – June 2005

Dr. John M. Logsdon, Jr., Biological Sciences, University of Iowa, Iowa City, IA 52242

- Managed laboratory and consumable ordering; supervised undergraduate lab workers
- Conducted independent molecular biology projects and automated sequencing

Research Intern, Georgia Institute of Technology, Summer 2003

Dr. Mark Hay, School of Biology, Georgia Institute of Technology, Atlanta, GA 30332

- Conducted experiments on aquatic plant communication of herbivore presence
- Ran bioassays on the palatability of native and exotic aquatic macrophytes from freshwater Georgia habitats

Research Experience for Undergraduates Intern, Shoals Marine Laboratory, Summer 2002

Dr. Myra J. Shulman, Ecology and Evolutionary Biology, Cornell University, Ithaca, NY 14850

- Researched *Cliona* spp. living in snail shells in the Isles of Shoals, ME, and how this parasitic sponge affected interactions between the snail and its crab predators

Peer-Reviewed Publications

Zajac, R.N., **Stefaniak, L.M.**, Babb, I., Conroy, C.W., Penna, S., Chadi, D., and P.J. Auster. 2019. An integrated seafloor habitat map to inform marine spatial planning and management: a case study from Long Island Sound (Northwest Atlantic). In: Harris, P., and E. Baker (eds) *Seafloor Geomorphology as Benthic Habitat*, 2nd Ed. Elsevier, Amsterdam, pp. 199-218.

Stefaniak, L.M. 2017. Mechanisms for invasion success by *Didemnum vexillum* (Chordata: Ascidiacea): observations versus manipulations. *Biological Invasions*. 19: 1213-1225.

Stefaniak, L.M., and J. Heupel. 2016. Alternative menthol sources for ascidian relaxation. *Management of Biological Invasions*. 7(1): 111-114.

Stefaniak, L.M., Auster, P.J., and I.G. Babb. 2014. Loss of an erect sponge on a rock reef in Long Island Sound (NW Atlantic). *Marine Biodiversity Records*. 7: e115.

Stefaniak, L.M. and R.B. Whitlatch. 2014. Life history attributes of a global invader: factors contributing to the invasion potential of *Didemnum vexillum*. *Aquatic Biology*. 21: 221-229.

Reinhardt, J.F., Gallagher, K.L., Nolan, R., **Stefaniak, L.**, Shaw, M. and R.B. Whitlatch. 2012. The material properties of *Didemnum vexillum* and prediction of tendrill fragmentation. *Marine Biology*. 159: 2875-2884.
DOI: 10.1007/s00227-012-2048-9

Stefaniak, L., Zhang, H., Gittenberger, A., Smith, K., Holsinger, K., Lin, S., and R.B. Whitlatch. 2012. Determining the native region of the putatively invasive ascidian *Didemnum vexillum* Kott, 2002. *Journal of Experimental Marine Biology and Ecology*. 422-423: 64-71.

Smith, K.F., **Stefaniak, L.**, Saito, Y., Gemmill, C.E.C., Cary, S.C., and A.E. Fidler. 2012. Increased inter-colony fusion rates are associated with reduced COI haplotype diversity in an invasive colonial ascidian *Didemnum vexillum*. *PLoS One*. 7: e30473.

Reinhardt, J.F., **Stefaniak, L.M.**, Hudson, D., Mangiafico, J., Gladych, R., and R.B. Whitlatch. 2010. First record of the invasive light bulb tunicate *Clavelina lepadiformis* Müller 1776 in the northwest Atlantic. *Aquatic Invasions*. 5(2): 185-190.

Stefaniak, L.M., Lambert, G., Gittenberger, A., Zhang, H., Lin, S., and R.B. Whitlatch. 2009. Genetic conspecificity of the worldwide populations of *Didemnum vexillum* Kott, 2002. *Aquatic Invasions* 4(1): 29-45.

Malik S.-B., Pightling A.W., **Stefaniak L.M.**, Schurko, A.M., and J.M. Logsdon Jr. 2008. A phylogenomic inventory of meiotic genes in the early-diverged parasitic protist *Trichomonas vaginalis*. *PLoS One*. 3(8): e2879.

Stefaniak L.M., McAtee J., and M.J. Shulman. 2005. The costs of being bored: effects of a clionid sponge on the gastropod *Littorina littorea* (L). *Journal of Experimental Marine Biology and Ecology*. 327(1): 103-114.

Other Publications

Stefaniak, L.M., and P.J. Auster. 2014. Emergent- and Epi-fauna. Section 5.5 in: *Seafloor Mapping of Long Island Sound, Final Report – Phase I: Pilot Project*. 382pp. Submitted to the office of Long Island Sound Programs, Connecticut Department of Energy and Environmental Protection, Hartford.

Auster, P.J., Chadi, D., Penna, S., **Stefaniak, L.M.**, and R. Zajac. 2014. Integrated Ecological Characterization and Habitat Classification. Section 5.6 in: *Seafloor Mapping of Long Island Sound, Final Report – Phase I: Pilot Project*. 382pp. Submitted to the office of Long Island Sound Programs, Connecticut Department of Energy and Environmental Protection, Hartford.

Wells, C.D., Pappal, A.L., Cao, Y., Carlton, J.T., Currimjee, Z., Dijkstra, J.A., Edquist, S.K., Gittenberger, A., Goodnight, S., Grady, S.P., Green, L.A., Harris, L.G., Harris, L.H., Hobbs, N.V., Lambert, G., Marques, A., Mathieson, A.C., McCuller, M.I., Osborne, K., Pederson, J.A., Ros, M., Smith, J.P., **Stefaniak, L.M.**, and A. Stevens. 2014. Report on the 2013 Rapid Assessment Survey of Marine Species at New England Bays and Harbors. Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs, Office of Coastal Zone Management, Boston, Massachusetts. 26 pp.

McIntyre, C.M., Pappal, A.L., Bryant, J., Carlton, J.T., Cote, K., Dijkstra, J., Erickson, R., Garner, Y., Gittenberger, A., Grady, S.P., Haram, L., Harris, L., Hobbs, N.V., Lambert, C.C., Lambert, G., Lambert, W.J., Marques, A.C., Mathieson, A.C., McCuller, M., Mickiewicz, M., Pederson, J., Rock-Blake, R., Smith, J.P., Sorte, C., **Stefaniak, L.**, and M. Wagstaff. 2013. Report on the 2010 Rapid Assessment Survey of Marine Species at New England Floating Docks and Rocky Shores. Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs, Office of Coastal Zone Management, Boston, Massachusetts. 35 pp.

Stefaniak L.M. and A. Gittenberger. Aug 2006. Results of the 2006 Smithsonian Tunicate Taxonomy Course. Bocas del Toro, Panama. www.ascidians.com

Invited Seminars

Stefaniak, L.M. Nov 2018. Looking for home: searching for the native range of two invasive ascidians, *Didemnum vexillum* and *Styela plicata*, using the evidence of their genes Coastal Carolina University Coastal and Marine Systems Science Graduate Seminar Series, Conway, SC.

Stefaniak, L.M. Apr 2016. Nailing down the biodiversity shifting baseline: establishing a time zero for two South Atlantic Bight habitats. Savannah State University Marine Sciences Graduate Seminar Series, Savannah, GA.

Stefaniak, L. May 2013. *Didemnum vexillum*: Identity, Origin, and Life History of an Invasive Ascidian. Mystic Aquarium Ridgeway Seminar Series. Mystic, CT.

Stefaniak, L. Feb 2012. Native or introduced? Pinning down a cryptogenic ascidian. Rhode Island College Biology Seminar Series. Providence, RI.

Grey, E.K. and **L.M. Stefaniak**. Aug 2009. It's a small world – How two JSPS/NSF fellows joined forces for research and adventure in Japan. Japan Society for the Promotion of Science Summer Program Final Meeting. Tokyo, Japan.

Stefaniak, L. Oct 2004. The costs of being bored: a sponge-snail-crab interaction. University of Queensland. Brisbane, QLD, Australia.

Selected Conference Presentations (*presenting author)

Stefaniak, L.M.* and S. López-Legentil. Apr 2019. Moving to the reef: historical and present observations of the worldwide introduced species *Styela plicata* in the Northwest Atlantic continental shelf. Benthic Ecology Meeting. Memorial University. St. Johns, Newfoundland, Canada.

Stefaniak, L.M.*. Apr 2017. Diversity and distribution of ascidians in Gray's Reef National Marine Sanctuary. Benthic Ecology Meeting. Coastal Carolina University. Myrtle Beach, SC.

Stefaniak, L.M.*, Schutter, M., Gleason, D., Medina Rosas, P., Carpizo-Ituarte, E., and A. Banaszak. June 2016. Ultraviolet radiation and coral embryos: survival, DNA damage, and development. 13th International Coral Reef Symposium, Honolulu, HI.

- Stefaniak, L.M.***, Gleason, D., Banaszak, A., Schutter, M., Diamanduros, A., Scarpinato, K., Medina Rosas, P. and E. Carpizo-Ituarte. Mar 2015. Ultraviolet radiation and coral embryos: DNA damage and survival. Benthic Ecology Meeting. Laval University. Quebec City, Quebec, Canada
- Stefaniak, L.M.***, Osman, R.W., and R.B. Whitlatch. Oct 2014. A potential induced physical defense in a didemnid ascidian. International Invasive Sea Squirt Conference – V. Woods Hole, MA.
- Stefaniak, L.***, Osman, R.W., and R.B. Whitlatch. Mar 2012. Fragmentation and invasibility in *Didemnum vexillum*. Benthic Ecology Meeting. Old Dominion University. Norfolk, VA. 2nd Place - Best Student Poster Presentation.
- Stefaniak, L.M.***, Zhang, H., Gittenberger, A., Smith, K., Holsinger, K., Lin, S. and R.B. Whitlatch. July 2011. Determining the native region of the putatively invasive ascidian *Didemnum vexillum*. 6th International Tunicate Meeting. McGill University. Montreal, Quebec, Canada.
- Stefaniak, L.M.***, Reinhardt, J.F., Hudson, D.M., Mangiafico, J., Gladych, R. and R.B. Whitlatch. R.B., Apr 2010. First record of the invasive light bulb tunicate *Clavelina lepadiformis* Muller 1776 in the northwest Atlantic. International Invasive Sea Squirt Conference – III. Woods Hole, MA.
- Smith, K.F.* , **Stefaniak, L.M.**, Gemmill, C.E.C., Cary, S.C., and A. Fidler. June 2009. Molecular identification and population genetics of a colonial ascidian (*Didemnum vexillum*) in New Zealand. 5th International Tunicate Meeting. Okinawa Institute of Science and Technology, Naha, Okinawa, Japan.
- Stefaniak, L.M.***, Lambert, G., Gittenberger, A., Zhang, H., Lin, S., and R.B. Whitlatch. Apr 2008. Identifying an Invader: Genetic conspecificity of worldwide populations of *Didemnum vexillum* Kott, 2002. Benthic Ecology Meeting. Providence, RI
- Stefaniak, L.M.***, Lambert, G., Gittenberger, A., Zhang, H., Lin, S., and R.B. Whitlatch. Oct 2007. Genetic conspecificity of worldwide populations of the colonial tunicate, *Didemnum* sp. International Invasive Sea Squirt Conference - II. Brudenell, PEI, Canada.
- Stefaniak, L.M.***, Zhang, H., Lambert, G., Lin, S., and R.B. Whitlatch. June 2007. Generating nuclear markers for phylogenetic and population genetic analyses of *Didemnum* sp. 4th International Tunicate Meeting. Observatoire Océanologique, Villefranche-sur-Mer, France.
- Stefaniak, L.M.***, Lin, S., and R.B. Whitlatch. Mar 2006. Ascertaining suitable methods to quantify genetic diversity of *Didemnum* sp. in Eastern Long Island Sound: Some preliminary findings. Benthic Ecology Meeting. Laval University. Quebec City, Quebec, Canada.
- Stefaniak, L.M.*** and M.J. Shulman. Feb 2003. Are there costs to being bored? A sponge-snail-crab interaction. American Society of Limnology and Oceanography Conference. Salt Lake City, UT.

Awards and Honors

- Benthic Ecology Meeting, Best Student Poster Presentation – 2nd Place, 2012
- Doctoral Dissertation Award, University of Connecticut, 2010
- Excellence-in-Research Award, Dept. of Marine Sciences, University of Connecticut, 2008
- Outstanding Scholar Fellowship, University of Connecticut, 2005-2008
- Smithsonian Environmental Research Center Internship, 2005
- Hughes Research Scholarship, 2002
- Research Experience for Undergraduates Internship (National Science Foundation), 2002

Grants

- Pre-doctoral Fund Award, Graduate School & Dept. of Marine Sciences, University of Connecticut, 2010 (\$542)
- Travel Award, Dept. of Marine Sciences, University of Connecticut, 2010 (\$145)
- Graduate Fellowship, East Asia Pacific Summer Institute (National Science Foundation) & Summer Program (Japan Society for the Promotion of Science), 2009 (~\$15000)
- Pre-doctoral Fund Award, Graduate School & Dept. of Marine Sciences, University of Connecticut, 2009 (\$489)
- Multi-Disciplinary Grant, Center for Environmental Sciences & Engineering, University of Connecticut, 2009 (\$5000)
- Pre-doctoral Fund Award, Graduate School & Dept. of Marine Sciences, University of Connecticut, 2008 (\$1999)
- Sounds Conservancy Grant, Quebec-Labrador Foundation, 2008 (\$500)
- Pre-doctoral Fund Award, Graduate School & Dept. of Marine Sciences, University of Connecticut, 2007 (\$1300)

- Sounds Conservancy Grant, Quebec-Labrador Foundation, 2007 (\$500)
- Travel Award, Dept. of Marine Sciences, University of Connecticut, 2007 (\$450)
- Development Fund Award, Connecticut SeaGrant, 2007, (with Dr. R.B. Whitlatch, \$3000)
- Pre-doctoral Fund Award, Graduate School & Dept. of Marine Sciences, University of Connecticut, 2006 (\$1364)
- Travel Award, Dept. of Marine Sciences, University of Connecticut, 2006 (\$356)

Outreach/Professional Activities

- Reviewer (*Marine Ecology Progress Series, Aquatic Invasions, Journal of Shellfish Research, Management of Biological Invasions, Global Change Biology, Journal of Experimental Marine Biology and Ecology*)
- Member, Sigma Xi, 2016-2017
- Member, International Society for Reef Studies, 2016-2017
- Volunteer judge, Gray's Reef Southeast Regional ROV MATE Competition, 2018-2019
- Volunteer support diver, Gray's Reef Southeast Regional ROV MATE Competition, 2017
- Volunteer science judge, National Ocean Science Bowl, GA/SC Regionals, 2016-2019
- Presenter, Ocean Science & Technology Day, Mystic Aquarium, Mystic, CT, 2013
- Volunteer timekeeper/science judge, National Ocean Science Bowl, RI/CT Regionals, 2008, 2010-2014
- Instructor, Taste Touch and Smell of Science Youth Camp, University of Connecticut, 2007-2010

Certifications

- Geospatial Technologies at Work: An Introduction to GIS – University of Connecticut Center for Land Use Education and Research
- SDI Rescue Diver SCUBA Certification
- TDI Evolution Air Closed Circuit Rebreather Diver Certification
- SSI Nitrox (EAN 40) Diver Certification
- AAUS Scientific Diver Certification – Current depth rating: Inactive
- DAN O2 provider
- DAN CPR/First Aid certification
- Connecticut Safe Boater License