

Genevieve Bernatchez, M.Sc., Biologist

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Education

2012: M.Sc., Northeastern University, Boston, Massachusetts, Biology Department
The nonconsumptive and consumptive effects of the invasive green crab (*Carcinus maenas*) on macroinfaunal diversity, abundance and ecosystem functioning in a New England salt marsh. Advisor: Dr. Geoffrey C. Trussell

2001: Northeastern University, Boston, Massachusetts, Biology Department
East/West Marine Biology Program

2000: Bs. C. in Wildlife Management, Université du Québec à Rimouski, Rimouski, Canada, Biology Department

Honors and awards

2006-2009: National Estuarine Research Reserve Graduate Research Fellowship for 3 years of funding (\$20,000 annually)

2004-2005: Summer stipend, Wells National Estuarine Research Reserve, Maine (\$4,000 annually)

Publications

Altieri, A.H., G.C. Trussell, P.J. Ewanchuk, **G. Bernatchez** and M.E.S. Bracken (2009). Consumers control diversity and functioning of a natural marine ecosystem. Plos One, 4(4), e5291.

Bernatchez, G. (2012). The nonconsumptive and consumptive effects of the invasive green crab (*Carcinus maenas*) on macroinfaunal diversity, abundance and ecosystem functioning in a New England salt marsh. MA thesis, Northeastern University.

Sorte C.J.B, **Bernatchez G.**, Pandori L.M., Silbiger N.J., Wallingford P.D. (2017). Warming tolerance and predicted distributional shifts differ by species in a diverse intertidal mussel guild. Submitted to Oikos

Bracken M.E.S., Silbiger N.J, **Bernatchez G.**, Sorte C.J.B (2017). Primary producers ameliorate impacts of CO₂ addition in a coastal marine ecosystem. Submitted to Proceedings of the Royal Society B

Research experiences

2014-Present: **Assistant Specialist II** (Dr. Matthew Bracken and Dr. Cascade Sorte Laboratories, UC Irvine)

Managing the daily operations of the lab. Coordinating ongoing research investigation related to the study of the relations between marine communities, ecosystem functioning and climate change. <http://faculty.sites.uci.edu/biodiversity/lab> and <http://cascadesorte.org/>

2014-2014: **Long Island Sound Study Water Quality Intern (NEIWPC)**

Compile and format water quality datasets for multivariate time series analysis to assist with a review of the LISS monitoring program. Additional fieldwork, laboratory analyses and office work

2012-2014: **Research Assistant**, National Oceanic Atmospheric Administration, National Marine Fisheries Service (NOAA, NMFS)

Collection, processing, and analysis of biological, chemical and environmental samples as part of an ongoing research investigation related to aquaculture habitat effects and climate changes.

Presentations

Bernatchez, G., J.M. Oates and M.E.S. Bracken. 2017. Contributions of grazers to nitrogen recycling in tide pools: not all species are excreting equally. Southern California Academy of Sciences Annual Meeting, Santa Monica, California.

Bernatchez, G. 2015. The nonconsumptive and consumptive effects of the invasive green crab (*Carcinus maenas*) on macroinfaunal diversity and abundance in a New England salt marsh. California State University Long Beach Seminar, Long Beach, California.

Bernatchez, G., G.C. Trussell. 2010. Non-consumptive effects of an invasive predator on macroinfaunal functional feeding groups in a New England salt marsh. Benthic Ecology Meeting, Wilmington, North Carolina.

Bernatchez, G., G.C. Trussell. 2008. Trait-mediated effects of an invasive predator on macroinfaunal functional feeding groups in a New England mud flat. Benthic Ecology Meeting, Providence, Rhode Island.

Bernatchez, G., G.C. Trussell, P.J. Ewanchuk. 2007. The non-consumptive indirect effect of an invasive predator on macroinfaunal diversity and abundance in a New England mud flat. Benthic Ecology Meeting, Atlanta, Georgia.

Bernatchez, G., G.C. Trussell, P.J. Ewanchuk. 2006. The effects of crab-gastropod interactions on the benthic macroinfaunal community of a salt marsh mudflat. Poster. Benthic Ecology Meeting, Quebec City, Canada.

Bernatchez, G., G.C. Trussell, P.J. Ewanchuk. 2005. The effects of the invasive asian shore crab (*Hemigrapsus sanguineus*) on benthic macrofaunal communities in a southern Maine salt marsh. Benthic Ecology Meeting, Williamsburg, Virginia.

Bernatchez, G., G.C. Trussell, P.J. Ewanchuk. 2003. Evidence of interspecific competition between two invasive shore crabs (*Carcinus maenas* and *Hemigrapsus sanguineus*)? Poster. Benthic Ecology Meeting, Groton, Connecticut.

Guest lectures

2015: Guest lecturer

Marine Biology class, University of California Irvine, (Dr. Matthew Bracken and Dr. Cascade Sorte), lecture on Marine Invertebrates Diversity

2011: Guest lecturer

Ecology class, Northeastern University (Dr. Cascade Sorte), lecture on Conservation Biology

2010: Guest lecturer

Ecology Class, Eastern Connecticut State University, (Dr. Joshua Idjadi) on Salt Marsh Ecology

Teaching experiences

2010-present: Part-time lecturer

College of Professional Studies at Northeastern University for the following classes: Biology 1 (Principles), class and lab, Biology 2 (Diversity) lab

2005-2011: Led Marine Invertebrate Zoology teaching assistant

Three Seas Program at Northeastern University

Responsibilities include: create the lab curriculum, write lab instructions, grade

2001-2012: Teaching assistant

Northeastern University: Experimental Design in Marine Ecology, General Biology 1 and 2, Neuroethology, the Biology of Fishes, Marine Botany, Marine Birds and Mammals, Introduction to Marine Biology

Skills

Citizenship: American and Canadian

Language: English and French (Fluent)

Computer program/software: IMB, MAC, Microsoft Word, Excel, PowerPoint, JMP, ArcGIS, Primer, R

Certification:

1997: Introduction to Pleasure Boating certified -33hours

2000: NAUI scuba diver certification (Open Water Certification, 60 feet)

2014: Maps and the Geospatial Revolution by The Pennsylvania State University on Coursera (GIS)

2015: Wilderness First Aid 2 days training course (University of California, Irvine)

2015: Analysis of Multivariate Data from Ecology and Environmental Science, using PRIMER California State University, Long Beach CA, January 12-16

Technical Skills- Research

Nutrients and Chlorophyll *a* analysis using Lachat Quickem 8500 method, Quattro Seal Analytical instrument, spectrophotometer and fluorometer techniques

Maintaining and managing indoor seawater system to grow and raise marine algae and invertebrates

Sterile techniques (acid wash, ethanol baths, use of bunsen burner, autoclave)

Aseptic techniques to maintain algal cultures viable and bacteria-free

Preparing reagents, solutions and medium for algae growth (liquid base and/or agar)

DIC analyzer, microprobes usage, pipetting, weighing, and mixing

Carbon/Nitrogen ratio analysis using FLASH EA 1112 series NC soil analyzer and an Elemental Analyzer

Methods for analyzing carbohydrates, protein content, DIN, alkalinity, pH, nutrients, moisture content, C/N ratio, total phosphorus, YSI, Lamotte test kit

Field collection: benthic samples, water samples using CTD, YSI and Niskin bottles, fish sampling using seine nets, plankton nets

Benthic sampling using coring, staining and preserving techniques. Using both dissection and compound microscopes, performing dissections

Maintaining and conducting field experiments on phytoplankton (natural and cultured species), fin fish (*Centropristis striata*, black sea bass), crustaceans (*Carcinus maenas*, green crab), mollusks (*Littorina littorea*, common periwinkle) and many other marine species

Conducting field experiments in marine intertidal zones and salt marsh habitats

Service and Outreach

2014-Present: Mentorship of independent research by undergraduate interns at UC Irvine, including training in research techniques and data analyses.

2008: Participant in the Boston Islands Harbor Intertidal Bioblitz, Massachusetts for the annual fauna and flora survey of the Boston Islands.

2002-2012: Mentorship of graduate and undergraduate student marine biology research associated with the Three Seas Program at Northeastern University.

2001-2012: Volunteering with the outreach program at the Marine Science Center (Northeastern University, Boston). Specific activities included helping with the coastal ocean science academy, assisting with the MSC annual open house, giving guided tours of the intertidal zone and tide pools.

1999-2000: Natural science interpreter, Parc du Mont St-Bruno, Government Park, Québec, 2000 and Parc de l'île Bonaventure et du Roche Percé, Government Park, Québec, 1999. Interpretation of the nature and history of that region.