

Elizabeth Jones Sbrocco

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Research Interests

Marine phylogeography; seascape genetics; conservation biogeography; global climate change; spatial ecology and GIS; biological oceanography

Education

PhD	Biology, Program in Marine Biology	Boston University	2012
MS	Marine Biology	College of Charleston	2005
BS	Biology	Duke University	1997

Professional Experience

Research Scholar Ronin Institute for Independent Scholarship <i>Climate change impacts on marine biodiversity.</i>	2016 - present
Postdoctoral Fellow National Evolutionary Synthesis Center, Duke University <i>Seascape genetics in a marine biodiversity hotspot.</i>	2012 - 2015
Doctoral Student Boston University, Department of Biology, Program in Marine Biology Dissertation: <i>A seascape genetics approach to exploring the phylogeographic response of marine fishes to late Quaternary climate change.</i>	2006 - 2012
Senior Research Technician Boston University Marine Program, Woods Hole, MA <i>Speciation and genetic connectivity of coral reef fish and invertebrates.</i>	2004 - 2006
Master's Student College of Charleston, Grice Marine Lab, Graduate Program in Marine Biology Thesis: <i>Comparative phylogeography, population structure, and extended maternal care in three intertidal haustoriid amphipods from the western North Atlantic.</i>	2000 - 2003
Biologist Forensic Botany Lab, Bode Technology Group, Springfield, VA <i>Molecular methods for the detection of botanical trace evidence</i>	2000

Summer Intern **1999**
 Darling Marine Center, University of Maine
Larval ecology and dispersal of the American lobster.

Research Technician **1997 - 1999**
 Department of Botany, Duke University
Plant molecular systematics

Honors and Awards

2012 – 2015 National Evolutionary Synthesis Center - Postdoctoral Fellow
2012 National Academy of Sciences, Kavli Frontiers of Science - Kavli Fellow
2006 Boston University, Graduate School of Arts and Sciences - Dean's Fellow
2003 Sigma Xi, Charleston Chapter - Associate Member
1996 – 1997 Duke University - Dean's List

Grants and Fellowships

National Evolutionary Synthesis Center **\$145,300**
 (2014 – 2015) Postdoctoral Fellowship: *Seascape genetics in a marine biodiversity hotspot*
 (2012 – 2014) Postdoctoral Fellowship: *Exploring environmental correlates of range limits across a marine biodiversity hotspot.*

Boston University Marine Program **\$9,200**
 (2010) Warren McLeod Graduate Research Award: *Seascape genetics in Indo-Pacific clownfish.*

Boston University, Graduate Student Organization **\$500**
 (2010) Student travel grant to attend Evolution Annual Meeting, Portland, OR

Boston University, Department of Biology **\$700**
 (2010) Student travel award to attend Evolution Annual Meeting, Portland, OR
 (2007) Student travel award to attend American Fisheries Society Meeting, San Francisco, CA

Boston University, Graduate School of Arts and Sciences **\$50,010**
 (2006 – 2007) Dean's Fellowship, graduate merit scholarship

Summer Institute in Statistical Genetics, North Carolina State University **\$250**
 (2003) Tuition scholarship

College of Charleston, Grice Marine Laboratory **\$2,000**
 (2002) Joanna Graduate Research Fellowship: *Population genetics of northwest Atlantic haustoriid amphipods*

Sigma Xi **\$300**
 (2001) Grants-in-Aid of Research: *The effects of maternal care of dispersal and population genetic structure of two haustoriid amphipod species.*

Publications

Manuscripts in review and in preparation

von Dassow Y, **Sbrocco EJ**, and McClain CR (*in review*) Life history variability in a large, cosmopolitan genus reflects energetic tradeoffs and niche specificity rather than phylogenetic conservatism. *PLoS One*

Sbrocco EJ, Hice LA, Mach ME, Duffy TA, Conover DO, and Barber PB (*in prep*) Local adaptation despite high gene flow in a marine fish: implications for phenotypic evolution in a warming world.

Sbrocco EJ (*in prep*) Post-glacial climate velocity predicts biodiversity in Indo-Pacific reef-building corals.

Sbrocco EJ, Schofield P, and Barber PB (*in prep*) Climatic niche expansion during the Caribbean lionfish invasion.

*Hanson AL, *Crandall ED, ***Sbrocco EJ**, Barber PB, Romena N, Mahardika N, Trembl E, and Carpenter K (*in prep*) Pleistocene isolation and contemporary larval dispersal influence complex spatial population structure of the Black-and-Gold Damselfish (*Neoglyphidodon nigroris*) in the Coral Triangle. ***Authors contributed equally**

Peer-Reviewed Published Articles

Sbrocco EJ (2014) paleo-MARSPEC: Gridded ocean climate layers for the mid-Holocene and Last Glacial Maximum. *Ecology* **95(6)**: 1710.

Sbrocco EJ and Barber PH (2013) MARSPEC: Ocean climate layers for marine spatial ecology. *Ecology*. **94**: 979. <http://dx.doi.org/10.1890/12-1358.1>

Crandall ED, **Sbrocco EJ**, DeBoer TS, Barber PH, and Carpenter K (2012) Expansion dating: calibrating molecular clocks in marine species from expansions onto the Sunda Shelf following the Last Glacial Maximum. *Molecular Biology and Evolution* **29(2)**: 707-719.

Sbrocco EJ and Barber PH (2011) Isolation, characterization, and multiplex PCR of ten polymorphic microsatellite loci for the Atlantic Silverside (*Menidia menidia*). *Conservation Genetics Resources* **3(3)**: 585-587.

Mach ME, **Sbrocco EJ**, Hice L, Duffy T, Conover DO, and Barber PH (2011) Regional differentiation and post-glacial expansion of the Atlantic Silverside, *Menidia menidia*, an annual fish with high dispersal potential. *Marine Biology* **158**: 515 - 530.

Crandall ED, **Jones [Sbrocco] E**, Muñoz MM, Akinronbe B, Erdmann MV, and Barber PH (2008) Comparative phylogeography of two seastars and their ectosymbionts within the Coral Triangle. *Molecular Ecology* **17**: 5276 - 5290.

Vigliola L, Doherty PJ, Meekan MG, Drown DM, **Jones [Sbrocco] E**, and Barber PH (2007) Genetic identity determines risk of post-settlement mortality of a coral reef fish. *Ecology* **88(5)**: 1263 - 1277.

Jones [Sbrocco] E and Barber PH (2005) Characterization of microsatellite loci for the detection of temporal genetic shifts within a single cohort of the brown demoiselle, *Neopomacentrus filamentosus*. *Molecular Ecology Notes* **5**: 834 - 836.

Book Chapters

Allen GR, Erdmann MV, and **Sbrocco EJ** (2012). Description of *Forcipiger wanaei*, new species (Pisces: Chaetodontidae). pp. 1122-1125. in: Allen GR & Erdmann MV *Reef Fishes of the East Indies*. Volume III. Tropical Reef Research, Perth, Australia.

Presentations

Invited Presentations

- International Association of Landscape Ecology World Congress (2015) *Declined*
- Duke University, Population Biology Seminar (2014)
- College of Charleston, Fort Johnson Marine Science Seminar (2014)
- Israeli/American Kavli Frontiers of Science Symposium, Irvine, CA (2013) *poster*
- National Evolutionary Synthesis Center (2014)
- Duke University, Systematics Discussion Group (2013)
- UCLA, Department of Ecology and Evolutionary Biology (2013)
- National Evolutionary Synthesis Center (2013)
- UNC-Wilmington, Department of Biology and Marine Biology (2012)
- UNC-Chapel Hill, Curriculum for the Environment and Ecology (2012)
- Indonesian/American Kavli FOS Symposium, Solo, Indonesia (2012) *poster*
- National Evolutionary Synthesis Center (2012)
- American Fisheries Society Meeting, Session on Landscape Genetics San Francisco, CA (2007)

Contributed Talks and Posters

- International Coral Reef Symposium, Honolulu, HI (2016)
- ASLO/AGU/TOS Ocean Sciences Meeting, Honolulu, HI (2014) *poster*
- International Biogeography Society Meeting, Miami, FL (2013) *poster*
- Evolution Annual Meeting, Snowbird, UT (2013)
- Association for Tropical Biology and Conservation, Bali, Indonesia (2010)
- ASLO/AGU/TOS Ocean Sciences Meeting, Portland, OR (2010) *poster*
- Evolution Annual Meeting, Portland, OR (2010)
- Evolution Annual Meeting, Moscow, ID (2009)

- Evolution Annual Meeting, Stony Brook, NY (2006)
- Marine Benthic Ecology Meeting, Orlando, FL (2002) *poster*
- Southeast Ecology, Evolution, and Population Genetics Meeting, Beaufort, NC (2002)
- Marine Biology Student Research Colloquium, College of Charleston (2001)

Teaching and Outreach

Course Instructor

- *Molecular Ecology and Evolution* (co-taught two weeks of a four week course), National Evolutionary Synthesis Center Ambassador Program at the Indonesian Biodiversity Research Center in Bali, Indonesia (2012)

Guest Lectures

- *Marine Phylogeography* to Introduction to Marine Biology class, Boston University (2009)
- *Local Adaptation in Marine Fishes* to Vertebrate Zoology class, Boston University (2009)
- *Microsatellite Data Analysis* (2 lectures) to the Short Course on Molecular Ecology and Evolution, University of the Philippines Marine Science Institute and De La Salle University, Manila, Philippines (2008)
- *Genomic Applications in Marine Ecology* to the Boston Community Leadership Academy AP Biology Class (2009)

Lab Instructor

- Short Course on Molecular Ecology and Evolution, University of the Philippines Marine Science Institute and De La Salle University, Manila, Philippines (2008)
- Introduction to Cell and Molecular Biology, College of Charleston (2001- 2003; 4 semesters)
- Elements of Biology II for Non-Majors, College of Charleston (2001 - 2003; 3 semesters)

Teaching Assistant

- Marine Megafaunal Ecology, Boston University (2010)
- Introduction to Marine Biology, Boston University (2009)
- Marine Geographic Information Systems, Boston University (2007)
- Plant Physiology, College of Charleston (2000)

Outreach

- NESCent Darwin Day Roadshow – Presentations on evolution and careers in science to middle and high school students on Hawaii and Maui (2015)
- *Exploring the GeoSciences: Using Geographic Information Systems to Protect Whales* – Developed and led a half-day workshop on marine GIS for the Increasing Diversity and Enhancing Academia (IDEA) High School Summer Science Institute, North Carolina Central University in collaboration with the UNC Institute for the Environment (2014)
- Undergraduate diversity mentor at the Evolution Annual Meeting (2013, 2014)

- Ocean Sciences Meeting undergraduate mentor (2014)
- *Careers in Marine Science*, presentation to middle school science classes at New Dimensions Charter School, Morganton, NC (2014)
- NESCent Ambassador Program - Indonesian Biodiversity Research Center, Bali, Indonesia (2012) *see "Instructor" section*
- *Biogeography and Biodiversity* to NESCent's Evolution Workshop for Educators (2012)
- Volunteer, NC Science Olympiad State Tournament (2012)
- *The Diversity Project*, undergraduate mentor:
Boston University (2005-2007)
De La Salle University - Philippines (2008)
Indonesian Biodiversity Research Center (2010)
- *Workshop on Microsatellite Data Analysis* (1 day workshop), University of the Philippines Marine Science Institute, Quezon City, Philippines (2008)
- Volunteer, BioBUGS - Biology Inquiry and Outreach with Boston University Graduate Students; Outreach to Boston-area high school students (2007)

Informal Training

- NESCent Academy Workshop Participant (2013):
Next-gen Sequencing Data for Phylogenetics and Phylogeography
- PADI Advanced SCUBA Certification (2008)
- 100-hour Scientific Diving Program, Woods Hole Oceanographic Institution (2006)
- NAUI Open-Water SCUBA Certification (2006)
- Summer Institute in Statistical Genetics, NC State University (2003):
Population Genetic Data Analysis
Quantitative Genetics

Synergistic Activities

- Referee for *Conservation Genetics*, *Evolutionary Applications*, *International Coral Reef Symposium*, *Journal of Biogeography*, *Marine Biology*, *Marine Ecology Progress Series*, *Molecular Ecology*, *ProcB*
- Societies: Society for the Study of Evolution, Society for Molecular Biology and Evolution, Ecological Society of America, International Biogeography Society, Society for Conservation GIS, Association for the Sciences of Limnology and Oceanography
- NESCent Working Group Participant:
Advancing genetic diversity research in the Indian and Pacific Oceans (2013 – 2015)
- NESCent Catalysis Meeting Participant:
Developing a Roadmap for the Future of Landscape Genomics (2013)
Molecular Ecology and Evolution of the Indo-Pacific (2012)
- Organizing Committee, National Academy of Sciences Israeli-American Kavli Frontiers of Science Symposia: Jerusalem, Israel (2013 - 2015); Irvine, CA (2012 – 2013)
- Travel Grant Committee, Boston University Graduate Student Organization (2010 - 2011)
- Academic Policy Committee, Boston University College of Arts and Sciences (2007 - 2008)
- Executive Council, Boston University Biology Graduate Student Association (2007 - 2008)

- Curriculum Committee, Program in Marine Biology, College of Charleston (2002 - 2003)
- Planning Committee, Marine Biology Student Research Colloquium, College of Charleston (2000 – 2001)