

ABIGAIL J. FUSARO

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- EDUCATION** **Ph.D. in Biological Oceanography**, expected 2008, Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program. Dissertation: “Spatiotemporal investigation of population genetic dynamics at deep-sea hydrothermal vents along the East Pacific Rise and Galápagos Rift.” Thesis advisor: Timothy Shank.
- B.S. Marine Biology**, German Minor. 2002, University of Rhode Island. *summa cum laude*. Honors Thesis: “Two new species of *Halosydna* Kinberg, 1855 (Annelida: Polychaeta: Polynoidae) from Peru and California/Mexico.” Academic advisor: J. Stanley Cobb.
- SSI Open-Water SCUBA License**, 1999, Atlantic Aquasport, Rye, NH.
- RESEARCH INTERESTS** Organismal biology and ecology; application of molecular techniques to traditional ecology, evolution and systematics; marine invertebrate speciation patterns and processes, especially the contribution of larvae to community establishment, population maintenance, and genetic connectivity; biogeographic patterns; metapopulation dynamics; deep-sea and hydrothermal vent biology; marine genomics
- RESEARCH EXPERIENCE**
- Woods Hole Oceanographic Institution** Woods Hole, MA 2002-present
- Developed DNA microsatellite markers to explore fine-scale genetic spatiotemporal variability of populations at mid-ocean ridges across multiple taxa
 - Designed species-specific 28S rDNA molecular probes targeting 9°N hydrothermal vent invertebrates through the use of diagnostic restriction enzyme digests
 - Characterized the host-symbiont specificity of *Rimicaris exoculata* shrimp-ε-Proteobacteria epibiont association among hydrothermal vent sites in the Atlantic and Indian Oceans using 16S rDNA
 - Directed multi-gene sequencing of vestimentiferans for annelid molecular phylogeny
- University of Rhode Island** Kingston, RI 2001-2002
- Described and illustrated two new scale worm species (Family Polynoidae)
 - Investigated phylogenetic systematics and species concepts for cladistic practices
- Smithsonian National Museum of Natural History** Washington, DC 2001
Research Training Program under Dr. Kristian Fauchald
- Conducted cladistic analysis of the polychaete genus *Halosydna*, incorporating morphological character scoring, data analysis, and cladogram interpretation
- University of Rhode Island** Kingston, RI 2000
Coastal Fellowship with Dr. Michael Clancy and EPA chemist Mark Cantwell
- Evaluated carbon isotope composition of larval lobsters to infer stock populations
- Coastal Fellowship with Dr. David Bengston
- Established and conditioned summer flounder population in current tanks for net pen aquaculture in Narragansett Bay
- University of Rhode Island** Kingston, RI 1999-2000
- Identified and enumerated plankton collections of marine fish and invertebrates
 - Surveyed benthic invertebrate in RI salt marshes to establish baseline population data

- Investigated morphometric characteristics of freshwater crayfish population
- Evaluated estuarine dynamics in Great Bay

PUBLICATION **Fusaro, A.J.**, A.R. Baco, G. Gerlach, T.M. Shank. 2007. Development and characterization of twelve microsatellite markers from the deep-sea hydrothermal vent siboglinid *Riftia pachyptila*. *Molecular Ecology Notes* (Online Early Articles). doi:10.1111/j.1471-8286.2007.01897.x

PRESENTATIONS **Fusaro, A.J.** “Spatial and temporal population genetic connectivity at hydrothermal vents: the siboglinid tubeworm *Riftia pachyptila*.” 2007. Oral presentation at the New England Molecular Evolutionary Biologists XVIII meeting, Flushing, NY.

Fusaro, A.J., and T.M. Shank. “Development and application of microsatellite markers for spatiotemporal population genetic analysis of *Riftia pachyptila*.” 2007. Poster presented at the InterRidge Theoretical Institute ‘Biogeochemical interactions at deep-sea vents,’ Woods Hole, MA.

Fusaro, A.J., and T.M. Shank. “Application of microsatellite markers to understand temporal and spatial population dynamics at deep-sea hydrothermal vents.” 2006. Oral presentation at the First International Conference on Marine Genomics, Sorrento, Italy.

Fusaro, A.J., and T.M. Shank. “Genetic structure of hydrothermal vent populations: new insights from genomic fingerprinting.” 2005. Poster presented at the Third International Symposium on Hydrothermal Vent and Seep Biology, La Jolla, CA.

Knee, A.J., Z.P. McKiness, C.M. Cavanaugh, and T.M. Shank. “Hydrothermal vent-endemic shrimp episybiont diversity and distribution on the Mid-Atlantic and Central Indian Ridges.” 2004. Poster presented at the Ridge 2000 Mid-Atlantic Ridge Workshop, Providence, RI.

Knee, A.J., and K. Fauchald. “A cladistic analysis of the polychaete genus *Halosydna*.” 2001. Research Training Program, Smithsonian National Museum of Natural History, Washington, DC.

Knee, A.J. “Lobster larval transport: are stable carbon isotopes useful indicators of larval source?” 2001. Poster presented at the Estuarine Research Federation Conference, St. Petersburg, FL

SELECTED HONORS NOAA Dr. Nancy Foster Scholarship (2004-present), WHOI Graduate Research Fellow (2002 present), SEASPACE Scholarship (2002), President's Award in Marine Biology (2002), Best Undergraduate Poster at the Estuarine Research Federation Conference (2001), Harold A. Riemenschneider Award in Biological Sciences (2001), Barbara Allen Woods German Excellence and Achievement Award (2001), Phi Beta Kappa Honor Society (inducted 2001), University of Rhode Island Undergraduate Coastal Fellowship (2000), Golden Key Honour Society (2000), Phi Eta Sigma Freshman Honor Society (1999), University of Rhode Island Full Centennial Scholarship (1998-2002)

SCIENTIFIC EXPEDITIONS R/V *Atlantis* & DSV *Alvin*, Cruise AT15-15, 9°N East Pacific Rise.
10 January-5 February 2007. SEAS 2007. Chief Sci. T. Shank. 1 *Alvin* dive.

R/V *Atlantis* & DSV *Alvin*, Cruise AT11-27, Galápagos Rift.
19 May-3 June 2005. Dive and Discover 9, Return to the Galápagos Rift
Chief Sci. T. Shank. 1 *Alvin* dive.

R/V *Atlantis* & DSV *Alvin*, Cruise AT11-26, 9°N East Pacific Rise.
23 April-15 May 2005. Pirates III, SEAS 2005.
Chief Sci. C. Vetricani. 1 *Alvin* dive.

FS *Meteor*, Cruise M62/5B, 8°-11°S Mid-Atlantic Ridge. 1-29 December 2004.
Chief Sci. K. Lackschewitz. ROV *Quest 4000* and towed OFOS camera.

R/V *Atlantis* & DSV *Alvin*, Cruise AT11-10, 9°N East Pacific Rise.
6-30 April 2004. Pirates II, SEAS 2004. Chief Sci. R. Lutz. 1 *Alvin* dive.

R/V *Point Sur*, greater Monterey Bay area, CA. 28 March-4 April 2003.
WormNet. Chief Sci. K. Halanych. Dredge, interfacial sled trawl, box core.

Friday Harbor, San Juan Islands, WA. August 2002. WormNet.
Chief Sci. K. Halanych. Inter- and sub-tidal collection, trawl, dredge.

EDUCATION/ OUTREACH	• Seacoast Science Center Guest Lectures	2007
	• Stan Cobb Marine Biology Steering Committee	2006-present
	• Communicating Ocean Sciences Visiting Elementary Classroom Co-Teacher	2006
	• Lawrence Middle School Science Fair Judge	2006
	• Blue Lobster Ocean Science Bowl Science Judge	2006
	• WHSTEP Lawrence Middle School Science Fair Coach	2004
	• Elementary and Middle School Classroom Presentations	2004-present
	• Mentor of Undergraduate, High School, Junior High School Students	2003-present
	• Massachusetts Middle School State Science Fair Judge	2003, 2006

SOCIETIES American Association for the Advancement of Science, American Geophysical Union,
InterRidge, Ridge 2000