

DIANE K. ADAMS

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National Institute of Dental and Craniofacial Research
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CURRENT AFFILIATIONS:

Postdoctoral Fellow, National Institutes of Health (NIH)
Professorial Lecturer, American University
Guest Investigator, Woods Hole Oceanographic Institution (WHOI)

EDUCATION:

- 2007 Massachusetts Institute of Technology (MIT)
 Ph.D, MIT/WHOI Joint Program in Biological Oceanography.
 Thesis: Influence of hydrodynamics on the larval supply to hydrothermal
 vents on the East Pacific Rise.
- 2001 University of California, Santa Barbara (UCSB)
 B.S., Aquatic Biology, *summa cum laude*.
 Honors Thesis: Role of lipid stores in the annual variability of Antarctic
 krill fecundity.

RESEARCH EXPERIENCE:

- 2007-present Postdoctoral Fellow, Developmental Mechanisms Section
 NIH, National Institute of Dental and Craniofacial Research
 Advisor: Lynne Angerer
 Molecular basis of developmental plasticity in sea urchin larvae.
- 2007 Postdoctoral Investigator
 WHOI, Department of Biology
 Advisor: Lauren Mullineaux
 Changes in larval supply in response to an eruption on the East Pacific Rise.
- 2001-2007 Graduate Student
 MIT/WHOI Joint Program
 Advisor: Lauren Mullineaux
 Interdisciplinary and collaborative research on the role of hydrodynamics
 in larval dispersal and population connectivity in the deep-sea using
 primitive equation modeling, numerical modeling and field observations.
- 1999-2001 National Science Foundation (NSF) Polar Research Experience for
 Undergraduates Fellow
 UCSB, Marine Science Institute
 Advisors: Robin Ross & Langdon Quetin

TEACHING EXPERIENCE & TRAINING:

- 2009-present Professorial Lecturer, Adjunct Faculty
 American University. Undergraduate Oceanography. Fall 2009.
 Green Certified Course.

- 2007 Course Participant
NIH, Scientists Teaching Science: An Introduction to Best Practices in Science Education.
- 2006 Volunteer Science Teacher & Course Participant
Mullen-Hall School, K-5, Falmouth, MA
WHOI, Communicating Ocean Science Course.
Training in teaching pedagogy and inquiry-based teaching through (re)designing and teaching six ocean science lessons to 4th graders. A Centers for Ocean Science Education Excellence (COSEE) program.
- 2003 Teaching Assistant
WHOI, Department of Biology
Biological Oceanography (Graduate course). Led recitation; corrected and graded papers and tests.
- 2000 Student Teacher
Community Teaching Fellowship in Math and Sciences
Santa Barbara High School & Middle School
10th and 7th grade Biology. Fellowship included courses in teaching pedagogy, presentation of a teaching project, and 40h in-class teaching.

ADDITIONAL RESEARCH EXPERIENCE:

- 2000 NSF Research Experience for Undergraduates Summer Student Fellow
University of Hawaii, Manoa, Department of Oceanography
Advisor: Craig Smith
The affinity between southern California whale fall and seep epifauna.
- 1999-2001 Undergraduate Researcher
UCSB, Department of Geological Sciences
Advisor: Rachel Haymon
Temperatures during initial hydrothermal vent chimney formation based on fluid inclusions.
- 1999 Minority Summer Student Fellow
WHOI, Department of Biology
Advisors: Rob Olson & Heidi Sosik
Experimental effects of nitrogen and iron limitation on temperate and Antarctic diatoms.
- 1998-1999 Undergraduate Researcher.
UCSB, Department of Ecology, Evolution and Marine Biology
Advisor: Barbara Prezelin
Effects of UV on the pigmentation of coastal marine phytoplankton.

RESEARCH AT SEA: 9 cruises for 218 days. 3 Alvin dives.

- 2006 TCS06NH: *R/V New Horizon*, East Pacific Rise 9 50' N
Led deployments of moorings to monitor larval supply, geochemistry, and currents after an eruption. Supported towed-seafloor imaging.
- 2005 AT11-26: *R/V Atlantis*, East Pacific Rise 9 50' N
Led recovery of moorings. Supported macrofaunal collections.

- 2004 AT11-20: *R/V Atlantis*, East Pacific Rise 9 50' N
Led deployment, recovery and redeployment of moorings to monitor larval supply, geochemistry, and currents.
- 2004 AT11-09: *R/V Atlantis*, East Pacific Rise 9 50' N
- 2003 *R/V Atlantis*, Mid Atlantic Ridge, TAG
- 2002 *R/V Akademik Mstislav Keldysh*, Mid Atlantic Ridge
- 2002 *R/V Atlantis*, East Pacific Rise 9 50' N
- 2000 *R/V Lawrence M. Gould*, Antarctic Peninsula, Annual LTER cruise
- 1999 *R/V Point Sur*, Santa Barbara Channel Islands

GRANTS & FELLOWSHIPS:

- 2005 Ocean Venture Fund Award, WHOI, \$7,970
- 2005 Ocean Life Institute Grant, WHOI, \$5,000
- 2001-2004 National Defense Science and Engineering Graduate Fellowship
- 2001 NSF Graduate Research Fellowship (declined)
- 2000 Barry M. Goldwater Fellowship
- 2000 UCSB Foundation Award for Undergraduate Research, \$3,000
- 1997 Regents Scholarship, UCSB

AWARDS:

- 2009 Fellows Award for Research Excellence, NIH (\$1000 travel award)
- 2005 Student Poster Honorable Mention, Symposium on Hydrothermal Vent and Seep Biology, La Jolla, CA
- 2001 College Honors, College of Letters & Science, UCSB
- 2001 Distinction in the Major, Ecology Evolution, and Marine Biology, UCSB

SERVICE ACTIVITIES:

- 2009 Poster Judge. Advancing the Science of Limnology and Oceanography Meeting. Nice, France
- 2008-2009 Member, 2009 Fellow's Retreat Planning Committee, NIH
- 2008 Poster Judge. NIH Graduate Student Research Symposium.
- 2008 Co-Chair, Water Column-Sea-floor Synthesis Group, RIDGE 2000 East Pacific Rise Data Integration and Synthesis Meeting, Hyannis, MA
- 2005-2007 Student Representative, Secretary, Women's Committee, WHOI
- 2003-2004 Student Representative, Department of Biology, WHOI
- 2000-2001 Shoreline Preservation Fund Board Member, Associated Student Body, UCSB

Manuscript Reviewer: Limnology and Oceanography

Proposal Reviewer: NSF Ocean Sciences and Polar Programs

SELECT OUTREACH & COMMUNITY SERVICE:

- 2009 Science Judge. National Ocean Science Bowl Finals.
- 2009 Volunteer. National Ocean Science Bowl, Chesapeake Bay Bowl.
- 2005 Guest Teacher. WHOI & Morse Pond Middle School, Falmouth, MA
Developed and led a lab on changes of state though making ice cream.
- 2005 Guest Lecturer. Culver City High School, Culver City, CA
Six lectures on deep-sea communities to 200+ students.
- 2004, 2005 Science Judge. National Ocean Science Bowl, Blue Lobster Bowl.

PROFESSIONAL MEMBERSHIPS:

- Society for Developmental Biology, member since 2009
- American Association for the Advancement of Science, member since 2007
- American Geophysics Union, member since 2003
- American Society of Limnology and Oceanography, member since 2000
- Golden Key Honors Society, inducted 2000

ORAL PRESENTATIONS:

Adams, D.K. and L.M. Angerer. Dopamine mediates ectodermal-mesenchymal signaling underlying a developmental response to food availability. Invited Plenary. The Developmental Biology of the Sea Urchin XIX. Woods Hole, MA. October 2009.

Adams, D.K. and L.M. Angerer. Dopamine mediates ectodermal-mesenchymal signaling underlying a developmental response to food availability. Mid-Atlantic Regional Society for Developmental Biology Meeting. College Park, MD. May 2009.

Adams, D.K., G. Flierl, and L.S. Mullineaux. Local and long-distance larval dispersal at hydrothermal vents. Invited seminar. University of Delaware, DE. March 2009.

Adams, D.K., G. Flierl, L. Zamudio, and L.S. Mullineaux. Effects of a mesoscale eddy on the connectivity between hydrothermal vents. 7th Larval Biology Symposium. Coos Bay, OR. August 2006.

Poehls, D.K. and L.S. Mullineaux. Effects of a mesoscale eddy on larval dispersal at hydrothermal vents. Ocean Sciences Meeting. Honolulu, HI. February 2006.

POSTER PRESENTATIONS:

Adams, D.K. and L.M. Angerer. Molecular mechanism underlying the plastic response of sea urchin larval feeding structure to food availability. Advancing the Science of Limnology and Oceanography Meeting. Nice, France. January 2009.

Poehls, D.K., L.S. Mullineaux, and T.M. Shank. Investigating vent gastropod dispersal mechanisms using time-series observations of currents and of larval abundance in sediment traps. Third Symposium for Hydrothermal Vent and Seep Biology. La Jolla, CA. September 2005.

Poehls, D.K., and T.M. Shank. Geographic and temporal genetic structure within *Rimicaris exoculata* along the Northern Mid-Atlantic Ridge. RIDGE 2000 Mid-Atlantic Ridge Workshop. Providence, RI. March 2004.

Poehls, D.K., and R.M. Haymon. Bio 9 Chimney: Formation of multiple anhydrite layers. The Ridge 2000 Integrated Studies Community Workshop, Long Beach, CA. Feb 2002.

Poehls, D.K., Quetin, L.B, and R.M. Ross. Interannual comparison of lipid reserves in the Antarctic krill, *Euphausia superba*. American Society of Limnology and Oceanography meeting, Albuquerque, NM. Feb. 2001.

Poehls, D.K., Smith, C.R. and A.R. Baco. Epifauna community structure of the San Clemente Cold Seep: a diverse assemblage with moderate whale fall affinities. Second International Symposium on Deep Sea Hydrothermal Vent Biology, Brest, France. October 2001.

Poehls, D.K., R. Olson and H. Sosik. The physiological effects of iron and nitrogen limitation on marine diatoms. Colloquium for Undergraduate Research, Special Programs UCSB, May 2000; National Conference on Undergraduate Research, Missoula, Montana. April 2000.

OTHER PUBLICATIONS:

Research featured in: Kelsey, Elin. A strange new species: Astonishing discoveries of life on Earth. Maple Tree Press. 2005. pp 45.

Interview by April Holladay. *WonderQuest*. July 2, 2004.
<http://www.wonderquest.com/when-i-grow-up.htm>

Highlight on Student Research: Diane Poehls. *Oceanus Magazine*. Woods Hole Oceanographic Institution. 2004.

PUBLICATIONS:

Beaulieu, S.E., L.S. Mullineaux, **D.K. Adams**, and S.W. Mills. 2009. Comparison of a sediment trap and plankton pump for time-series sampling of larvae near deep-sea hydrothermal vents. *Limnology and Oceanography: Methods*. **7**: 235-248.

Adams, D.K. and L.S. Mullineaux. 2008. Supply of gastropod larvae to hydrothermal vents reflects transport from local larval sources. *Limnology and Oceanography*. **53**:1945-1955.

Adams, D.K., S.W. Mills, and L.S. Mullineaux. In press. Expanding dispersal studies at hydrothermal vents through species identification of cryptic larval forms. *Marine Biology*.

Adams, D.K. and G. Flierl. Modeled interactions of mesoscale eddies with the East Pacific Rise: Implications for larval dispersal. Submitted.

Mullineaux, L.S., **D. K. Adams**, S.W. Mills, and S. E. Beaulieu. Larvae from afar colonize deep-sea hydrothermal vents after a catastrophic eruption. Submitted.

Adams, D.K., D.J. McGuillicuddy, L.M. Zamudio, C.R. German, and L.M. Mullineaux. Transport of hydrothermal vent derived products by mesoscale eddies in the deep-sea. In prep.

Adams, D.K., R.C. Angerer, and L.M. Angerer. Ecological adaptation of sea urchin larvae to food mismatches through dopamine-mediated developmental plasticity. In prep.