**Diane K. Adams**

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**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. Advisor: L. Mullineaux.

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. Advisors: R. Ross & L. Quetin.

**Professional Experience:**

2009-present Adjunct Faculty, American University, Biology Dept.

2007-present Postdoctoral Fellow, Developmental Mechanisms Section

NIH, National Institute of Dental and Craniofacial Research

Advisor: L. Angerer

Mechanisms underlying the environmental regulation of development.

2007-present Guest Investigator, Woods Hole Oceanographic Institution (WHOI)

2007 Postdoctoral Investigator, WHOI, Dept of Biology. Advisor: L. Mullineaux

1999-2001 Undergraduate Researcher. UCSB, Dept of Geological Sciences. Advisor: R. Haymon

1998-1999 Undergraduate Research Assistant. UCSB, Dept of Ecology, Evolution &

Marine Biology. Advisor: B. Prezelin

**Publications:**

**Adams, D.K.**, D.J. McGillicuddy, L.M. Zamudio, A.M. Thurnherr, X. Liang, O. Rouxel, C.R. German, and L.M. Mullineaux. 2011. Surface-driven mesoscale eddies transport deep-sea products from hydrothermal vents. *Science.* 332:580-583. [doi:10.1126/science.1201066](http://www.sciencemag.org/content/332/6029/580.full?rss=1) \*Featured paper by RIDGE 2000 program, May 2011

**Adams, D.K.** and G.R. Flierl. 2010. Modeled interactions of mesoscale eddies with the East Pacific Rise: Implications for larval dispersal. *Deep-Sea Research I.* 57: 1163-1176. http://www.sciencedirect.com/scidirimg/clear.gif[doi:10.1016/j.dsr.2010.06.009](http://dx.doi.org/10.1016/j.dsr.2010.06.009)

Mullineaux, L.S., **D. K. Adams**, S.W. Mills, and S. E. Beaulieu. 2010. Larvae from afar colonize deep-sea hydrothermal vents after a catastrophic eruption. *Proceedings of the National Academy of Sciences.* 107:7829-7834. [doi/10.1073/pnas.0913187107](http://www.pnas.org/cgi/doi/10.1073/pnas.0913187107) \*Evaluated by Faculty of 1000 Biology.

**Adams, D.K.**, S.W. Mills, T.M. Shank, and L.S. Mullineaux. 2010. Expanding dispersal studies at hydrothermal vents through species identification of cryptic larval forms. *Marine Biology.* 157:1049-1062. [doi:10.1007/s00227-009-1386-8](http://www.springerlink.com/content/68t31471203h7h35/?p=4bacfbefed9944c4b29b70f41cfa414b&pi=2)

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. [Open Access Article](http://www.aslo.org/lomethods/free/2009/0235.pdf)

**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. [Open Access Article](http://www.aslo.org/lo/toc/vol_53/issue_5/1945.pdf)

*In Review*

Adams, D.K., M.A. Sewell, R.C. Angerer, and L.M. Angerer. Rapid adaptation to food availability by a dopamine-mediated morphogenetic response.

**Grants & Fellowships:**

2005 Ocean Venture Fund Award, WHOI, $7970

2005 Ocean Life Institute Grant, WHOI, $5000

2001-2004 National Defense Science and Engineering Graduate Fellowship

2001 National Science Foundation (NSF) Graduate Research Fellowship (declined)

1999-2001 NSF Polar Research Experience for Undergraduates Fellow.

UCSB, Marine Science Institute. Advisors: R. Ross & L. Quetin

2000 Barry M. Goldwater Fellowship

2000 UCSB Foundation Award for Undergraduate Research, $3000

2000 NSF Research Experience for Undergraduates Summer Student Fellow.

University of Hawaii, Manoa, Dept of Oceanography. Advisor: C.R. Smith

1999 Minority Summer Student Fellow. WHOI, Dept of Biology. Advisor: R. Olson

**Honors & Awards:**

2009 Fellows Award for Research Excellence, NIH

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

**Teaching Experience:**

2011 Guest Lecturer. BIOL 510, Biological Sciences Seminar. California State

University, Los Angeles.

2010 Guest Lecturer. Undergraduate Oceanography and Topics in

Developmental Biology. American University.

2009 Professorial Lecturer. (full course) Undergraduate Oceanography course for majors and non-majors, BIO240. American University.

2003 Teaching Assistant. Graduate Biological Oceanography.

WHOI, Dept of Biology.

2000 Student Teacher. Community Teaching Fellowship in Math and Sciences.

Santa Barbara High School & Middle School, 10th and 7th grade Biology.

Courses in teaching pedagogy and 40 hours of in-class teaching.

**Mentoring:**

1 undergraduate, senior research project, primary mentor.

5 undergraduates in the ASLO Minority Program, 2010 Ocean Sciences Meeting.

3 summer undergraduates, informal mentor.

**Leadership & Service Activities:**

2011 Selection Committee Member. NIDCR summer internship program.

2011 Poster Judge. Developmental Biology of the Sea Urchin Meeting XX.

2011 Poster Judge. Society for Integrative and Comparative Biology Meeting.

2008-2011 Member, Annual Fellow’s Retreat Planning Committee, NIH

2008-2011 Poster Judge. NIH Graduate Student Research Symposium.

2010 Invited participant. Centers for Ocean Sciences Education Excellence

(COSEE) Community Meeting. Washington, DC.

2010 Chief Judge, Developmental Biology Section. FARE 2011 Awards.

2009 Poster Judge. Advancing the Science of Limnology and Oceanography Meeting. Nice, France

2008 Co-Chair, Water Column-Seafloor 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 Board Member, Undergraduate Representative, Shoreline Preservation Fund (now the Coastal Fund), Associated Student Body, UCSB

Manuscript Reviewer: Limnology and Oceanography, Marine Ecology Progress Series

Proposal Reviewer: NSF Ocean Sciences and Polar Programs

**Professional Memberships:**

Society for Integrative and Comparative Biology, member since 2010

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

**Research at Sea:** 9 cruises for 218 days. 3 Alvin dives.

2006 TCS06NH: *R/V New Horizon*,East Pacific Rise 9 50’ N.

2005 AT11-26: *R/V Atlantis*, East Pacific Rise 9 50’ N.

2004 AT11-20: *R/V Atlantis*, East Pacific Rise 9 50’ N

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

**Select Outreach & Community Service:**

2010, 2009 Volunteer. National Ocean Science Bowl, Chesapeake Bay Bowl.

2009 Science Judge. National Ocean Science Bowl Finals.

2006 Volunteer Science Teacher & Course Participant.

Mullen-Hall School, K-5, Falmouth, MA

WHOI, Communicating Ocean Science Course. A COSEE program.

Trained in teaching pedagogy and inquiry-based teaching through (re)designing and teaching six ocean science lessons to 4th graders.

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.

2004 Interview by April Holladay. Wonder*Quest*. 2004, July 2. [webpage](http://www.wonderquest.com/when-i-grow-up.htm)

**Invited Presentations & Seminars:**

**Adams, D.K.**, M.A. Sewell and L.M. Angerer.Environmental regulation of development through dopamine signaling. Invited seminar. University of Maryland, Baltimore, MD. May 2011.

**Adams, D.K.**, M.A. Sewell and L.M. Angerer. Environmental modulation of arm development: mechanisms and consequences. Developmental Biology of the Sea Urchin Meeting XX. April 2011.

**Adams, D.K.** Buffering environmental challenges - larval triumphs in the face of deep-sea volcanic eruptions and pelagic famine. Invited seminar. University of Southern California, CA. February 2011.

**Adams, D.K.** Catastrophic eruptions and rebirth at hydrothermal vents - the role for tiny larvae. Center for Interdisciplinary Quantitative Analysis (CINQA); California State University, Los Angeles. February 2011.

**Adams, D.K.**, M.A. Sewell and L.M. Angerer. Rapid larval adaptation to food via dopamine and development. Invited seminar. Scripps Institute of Oceanography, CA. January 2011.

**Adams, D.K.**, M.A. Sewell and L.M. Angerer. Dopamine signaling mediates adaptive phenotypic plasticity in response to food availability. Ocean Sciences Meeting. Portland, OR. February 2010.

**Adams, D.K.** and L.M. Angerer. Dopamine mediates ectodermal-mesenchymal signaling underlying a developmental response to food availability. Plenary Talk. 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** (selected)**:**

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. Ocean Sciences. February 2010.

**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.**, 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. February 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.

**Media Coverage:**

Bai, N. Massive ocean eddies stir up life around deep-sea vents. 23 May 2011. Scientific American [webpage](http://www.scientificamerican.com/article.cfm?id=massive-ocean-eddies-stir)

Top-to-bottom action. Editor’s summary. Science. v332 (6029):512. [pdf](http://www.sciencemag.org/content/332/6029/twis.full.pdf)

Steir, C. Eddy superhighways churn up the deep sea. 29 Apr 2011. NewScientist [blog](http://www.newscientist.com/blogs/shortsharpscience/2011/04/eddy-superhighways-churn-up-t.html)

Perkins, S. Deep waters may not run still. 28 Apr 2011. Science Now, AAAS. [webpage](http://news.sciencemag.org/sciencenow/2011/04/deep-waters-may-not-run-still.html?ref=hp)   
  
Peeples, L. Surprise: Wind above affects seafloor a mile below. 28 Apr 2011. OurAmazingPlanet, Live Science. [webpage](http://www.ouramazingplanet.com/deep-ocean-eddies-hydrothermal-vents-1453/)  
  
Cross, T. Deep-sea vents: Ocean-floor migration. [Online](http://www.economist.com/node/18618033), 28 Apr 2011. In print, 30 Apr 2011. The Economist. Syndicated by the Consortium for Ocean Leadership.

Powell, D. Currents reach deep for seafloor larvae. 28 Apr 2011. Science News Online. [webpage](http://www.sciencenews.org/view/generic/id/73689/title/Currents_reach_deep_for_seafloor_larvae)   
  
Scudellari, M. Deep sea taxis. 28 Apr 2011. The Scientist. [webpage](http://www.the-scientist.com/news/display/58158/)

Swirling eddies seen spreading life. 28 Apr 2011. UPI. [webpage](http://www.upi.com/Science_News/2011/04/28/Swirling-ocean-eddies-seen-spreading-life/UPI-92631304032236/)    
  
Greenberg, Joel. Eddies found to be deep, powerful modes of ocean transport. 28 Apr 2011. [WHOI News Release](http://www.whoi.edu/page.do?pid=7545&tid=282&cid=98609&ct=); [NSF News Release](http://www.nsf.gov/news/news_summ.jsp?cntn_id=119435); syndicated by ScienceDaily, PhysOrg.com, e! Science News and others.

Milius, Susan. 15 Jan 2011. Young’uns adrift on the sea. Science News. v179 (2):18. Cover [Feature](http://www.sciencenews.org/view/feature/id/68176/title/Younguns_adrift_on_the_sea).

Herath, Anuradha. 02 Aug 2010. Life after a catastrophe. Astrobiology. [webpage](http://www.astrobio.net/exclusive/3573/life-after-catastrophe)

Nature News Feature. Qiu, Jane. 19 May 2010. Oceanography: Death and rebirth in the deep. Nature **465**:284-286. [doi:10.1038/465284a](http://www.nature.com/news/2010/100519/full/465284a.html)

NSF Press Release 10-058. Long-Distance Larvae Speed to New Undersea Vent Homes. 12 Apr 2010. [webpage](http://www.nsf.gov/news/news_summ.jsp?cntn_id=116759&org=NSF&from=news); syndicated by PHYSORG.com, ScienceDaily, etc.

Perkins, Sid. Hydrothermal vents sometimes colonized from afar. Science News Online. 2010, Feb 26. [webpage](http://www.sciencenews.org/view/generic/id/56720/title/Hydrothermal_vents_sometimes_colonized_from_afar); syndicated by US News & World Report.

Villano, Matt. The mysterious movements of deep-sea larvae: How do the tiny progeny of seafloor animals disperse through the ocean? Oceanus Magazine. Woods Hole Oceanographic Institution. 2009, Dec 31. [webpage](http://www.whoi.edu/oceanus/viewArticle.do?id=65406&sectionid=1000)

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