**Benjamin M. Grupe**

Scripps Institution of Oceanography

University of California, San Diego

9500 Gilman Drive, mail code 0208

La Jolla, CA 92093-0208

bgrupe@ucsd.edu

(541) 290-1327

## EDUCATION

**University of California San Diego, Scripps Institution of Oceanography**, La Jolla, CA.

Fourth-year student. (Advisor: Dr. Lisa Levin)

Dissertation: Heterogeneity, successional dynamics, and trophic structure of deep-sea chemosynthetic ecosystems in the East Pacific.

**University of Oregon**, Eugene, OR. 2006.

M.S., Biology, Oregon Institute of Marine Biology. (Advisor: Dr. Alan Shanks)

Thesis: Purple sea urchins (*Strongylocentrotus purpuratus*) in and out of pits: the effects of microhabitat on population structure, morphology, growth, and mortality.

**Gettysburg College**, Gettysburg, PA. 2003.

B.A., Environmental Studies and Biology, *Magna Cum Laude*. (Advisors: Drs. John Commito and Peter Fong)

Thesis: Correlations between the foundation species *Mytilus edulis* and infauna and epifauna across spatial scales in a soft-bottom system in Maine.

## PROFESSIONAL EXPERIENCE

*Biomonitoring Coordinator.* SOUTH SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE, Charleston, OR. January 2007 – November 2007.

*Graduate Research Assistant.* SOUTH SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE, Charleston, OR. August 2003 – June 2004.

*Laboratory Manager/Assistant.* GETTYSBURG COLLEGE ENVIRONMENTAL STUDIES DEPARTMENT, Gettysburg, PA. August 2002 – May 2003.

*Research Technician.* GENOME SEQUENCING CENTER, MATERIALS CORE AND LIBRARY CORE LABORATORIES, WASHINGTON UNIVERSITY, St. Louis, MO. December 2000 – January 2003 (seasonal).

## TEACHING EXPERIENCE

**Scripps Institution of Oceanography**, La Jolla, CA. Winter 2013.

Teaching Assistant: *Biological Oceanography* (Mike Landry)

**Scripps Institution of Oceanography**, La Jolla, CA. Fall 2011.

Teaching Assistant: *Paleobiology* (Richard Norris)

**Oregon Institute of Marine Biology**, Charleston, OR. Fall 2006.

Teaching Assistant: *Biological Oceanography* (Alan Shanks).

**Oregon Institute of Marine Biology**, Charleston, OR. Summer 2006.

Teaching Assistant: *Marine Ecology* (Ronnie Estelle).

**Oregon Institute of Marine Biology**, Charleston, OR. August 2004 – June 2006.

Graduate Teaching Fellow, Hillcrest Elementary School. National Science Foundation GK-12 Grant. (Alan Shanks and Jan Hodder, primary investigators)

MENTORED STUDENTS

## Milinda Thompson, Summer 2011 Svenja Angenhadt, Winter 2012

## Blanka Lederer, Summer 2012

## PEER-REVIEWED MANUSCRIPTS

Levin, L.A., V.J. Orphan, G.W. Rouse, A.E. Rathburn, W. Ussler III, G.S. Cook, S.K. Goffredi, E.M. Perez, A. Waren, **B.M. Grupe**, G. Chadwick, B. Strickrott. 2012. Proceedings of the Royal Society B, published online March 7, 2012. doi=10.1098/rspb.2012.0205.

Commito, J.A., S. Como, **B.M. Grupe**, and W.E. Dow. 2008. Species diversity in the soft-bottom intertidal zone: Biogenic structure, sediment, and macrofauna across mussel bed spatial scales. Journal of Experimental Marine Biology and Ecology 366: 70-81.

Commito, J.A., W.E. Dow, and **B.M. Grupe**. 2006. Hierarchical spatial structure in soft-bottom mussel beds. Journal of Experimental Marine Biology and Ecology 330: 27-37.

## MANUSCRIPTS IN PREP

**Grupe, B.M.**, L.A. Levin, G. Mendoza, et al. Colonization of macrofauna on hard substrates at Mound 12 methane seep (Costa Rica). *In prep.*

Davidson, T.M. and **B.M. Grupe**. The tidepool is not flat: community structure varies among tidepool microhabitats associated with bioeroding sea urchins on a temperate rocky headland. *In prep* Marine Ecology Progress Series.

**Grupe, B.M.** and Shanks, A.L. Trait-mediated indirect interactions between marine organisms benefit terrestrial predators. *In prep* Ecology.

**Grupe, B.M.**  Morphological and population structure differences of intertidal sea urchins living in different microhabitats. *In prep* Journal of Experimental Marine Biology and Ecology.

**Grupe, B.M.** Differential growth rates in purple sea urchins (*Strongylocentrotus purpuratus*) living inside and outside of pits. *In prep* Marine Ecology Progress Series.

**Grupe, B.M.** Intertidal sea urchins and their sedentary lifestyle. *In prep.*

Commito, J.A., S. Como, R.V. Platt, **B.M. Grupe**, and W.E. Dow. Influence of mussel beds on hierarchical spatial structure of commercial bivalves and polychaetes in Maine. *In prep*.

## CONFERENCE PRESENTATIONS

*\* presenting author only when listed first*

**Grupe, B.M.**, L.A. Levin, G. Mendoza, A.R. Thurber. 2012. Hard substrate colonization experiments provide insight into macrofaunal community patterns at East Pacific methane seeps. *Deep-Sea Biology Symposium*. Wellington, New Zealand.

**Grupe, B.M.**, L.A. Levin, V.J. Orphan, G.W. Rouse, A.R. Thurber. 2012. Colonization, diversity, and trophic patterns of macrofauna on hard substrates reflect environmental heterogeneity in Pacific deep-sea methane seep communities. *Ecological Society of America*. Portland, OR.

**Grupe, B.M.**, L.A. Levin, V.J. Orphan, G.W. Rouse, J.P. Gonzalez, J.J. Marlow, G. Mendoza, J.A. Steele, A.R. Thurber. 2012. Macrofaunal colonization and trophic dynamics at two East Pacific methane seeps: Hydrate Ridge, Oregon and Mound 12, Costa Rica. *Ocean Sciences*. Salt Lake City, UT.

**Grupe, B.M.**, L.A. Levin, B. Jellison, A.R. Thurber. 2010. Community structure and trophic patterns on rocks, wood, and biotic substrates at a deep-sea methane seep off Costa Rica. *Western Society of Naturalists.* San Diego, CA.

**Grupe, B.M.**, et al. 2010. Community compostion and trophic patterns on rocks, wood, and biotic substrates at Costa Rican methane seeps. *Deep Sea Biology Symposium*. Reyjkavic, Iceland.

Levin, L.A., V. Orphan, G. Rouse, A. Rathburn, **B.M. Grupe**, G. Mendoza, A. Thurber, A. Hutzler, B. Jellison, A. Waren. The Carbonate Nation: Ecosystem engineering by carbonate-precipitating microbes at Costa Rica methane seeps. *Deep-Sea Biology Symposium.* Reyjkavic, Iceland.

Levin, L.A., G. Cook, S. Goffredi, **B.M. Grupe**, V. Orphan, A. Rathburn, G. Rouse, A. Waren. 2010. Hydrothermal seeps: the best of both worlds. *Deep-Sea Biology Symposium*. Reyjkavic, Iceland.

**Grupe, B.M.**, et al. 2009. Sea level rise in a Southern California salt marsh: predicting consequences and identifying solutions using a multi-disciplinary framework. *Western Society of Naturalists*. Monterey, CA.

**Grupe, B.M.**, et al. 2009. Sea level rise in a Southern California salt marsh: consequences and potential solutions. *Coastal and Estuarine Research Federation.* Portland, OR.

Rumrill, S.S. and **B.M. Grupe**. 2009. Tidal creek delivery and surf-zone dynamics of fecal colliform bacteria within Sunset Bay, Oregon. *Coastal and Estuarine Research Federation.* Portland, OR.

Commito, J.A., A.E. Commito, R.V. Platt, **B.M. Grupe**, W.E. Dow, N.J. Gownaris, K.A. Reeves, A.M. Vissichelli. 2009. Positive recruitment feedback and self-organization in soft-bottom mussel beds. *Benthic Ecology Meetings.* Corpus Christi, TX.

**Grupe, B.M.** and S.S. Rumrill. 2008. Dynamics of fecal colliform bacteria within the freshwater-marine interface at Sunset Bay State Park, Oregon. *Pacific Estuarine Research Society Meeting.* Newport, OR.

Ebert, T.A. and **B.M. Grupe**. 2008. Sudden loss of sea urchins at Sunset Bay, Oregon, following documented presence for 40 years. *Ecological Society of America Annual Meeting*. Milwaukee, WI.

Bennett, K.C., **B.M. Grupe**, A.M. Laferriere, M. Schuiteman, J. Trainer, T. Smart, S. Archerd, K. Ashcraft, E. Atkins, J. Button, K. Davidson, A. Edd, A. Erb, L. Jung, M. Lojkovic, S. Smith, M.L. Stebbins, P. Thornton, & A. Trainer. 2008. Taking inquiry into the field: curriculum development for elementary marine science. Examples from the GK12 “Learning About Where We Live” project. *ASLO Ocean Sciences Meeting*. Orlando, FL.

**Grupe, B.M.** and S.S. Rumrill. 2007. The nature of fecal coliform bacteria at a popular Oregon beach. *Western Society of Naturalists Annual Meeting*. Ventura, CA.

**Grupe, B.M.** 2007. The sedentary lifestyle of intertidal purple sea urchins (*Strongylocentrotus purpuratus*) as revealed by photo-monitoring. *Western Society of Naturalists Annual Meeting*. Ventura, CA.

**Grupe, B.M.** and S.S. Rumrill. 2007. Investigation of frequent fecal coliform contamination events in Sunset Bay State Park, Coos County, Oregon. *NERRA-NERRS Annual Meeting*. Shepherdstown, WV.

**Grupe, B.M**. 2006. A tale of two microhabitats: differential growth rates in the purple sea urchin *Strongylocentrotus purpuratus*. *Western Society of Naturalists Annual Meeting*. Redmond, WA.

**Grupe, B.M**. 2006. Predator-mediated flight response in sea urchins results in terrestrial predation by oystercatchers and raccoons. *Western Society of Naturalists Annual Meeting*. Redmond, WA.

**Grupe, B.M.** 2006. Microhabitat-specific differences in reproductive output from the purple sea urchin *Strongylocentrotus purpuratus*. *Larval Biology Symposium*, Coos Bay, OR.

Commito, J.A., A.E. Commito, R.V. Platt, **B.M. Grupe**, and W.E. Dow. 2006. Species relationships across spatial scales in spatially complex soft-bottom mussel beds, an intertidal resource contested by draggers and diggers. *European Marine Biology Symposium*, Cork, Ireland.

Commito, J.A., R.V. Platt, **B.M. Grupe**, and W.E. Dow. 2006. Mulitlevel modeling of nested benthic samples: species relationships in mussel beds, a contested resource in Maine. *Benthic Ecology Meetings*. Québec City, Canada.

**Grupe, B.M**. 2005. The influence of pit-dwelling on the biology and ecology of the purple sea urchin *Strongylocentrotus purpuratus*. *Western Society of Naturalists Annual Meeting*. Monterey Bay, CA.

Commito, J.A., W.E. Dow, and **B.M. Grupe**. 2005. “What’s a nice bivalve like you doing in a place like this?” Hierarchical spatial structure in soft-bottom mussel beds. *Benthic Ecology Meetings Special Session*, Virginia Institute of Marine Sciences, Williamsport, VA.

**Grupe, B.M**. and J.A. Commito. 2003. Foundation species effects across spatial scales on infauna and epifauna in an exploited soft-bottom system: preliminary results from mussel beds in Maine, USA. *Benthic Ecology Meetings*. Groton, CT.

## INVITED SEMINARS

**Grupe, B.M.** 2012. Science and exploration in the deep sea. *Rancho Santa Fe Middle School*. San Diego, CA.

**Grupe, B.M.** 2011. Review of research cruise at Hydrate Ridge Oregon. *Cuyamaca Community College Oceanography class*. San Diego, CA.

**Grupe, B.M.** 2008. Opportunistic oystercatchers at the all-you-can-eat sea urchin buffet. *Yaquina Birders Club*, Newport, OR.

**Grupe, B.M.** 2007.Microbial water testing and fecal coliforms in Sunset Bay. *Marine Conservation Issues* (Jan Hodder), Oregon Institute of Marine Biology, Charleston, OR.

**Grupe, B.M.** 2007. Opportunistic oystercatchers at the all-you-can-eat sea urchin buffet. *21st Annual Oregon Shorebirds Festival*, Charleston, OR.

**Grupe, B.M.** 2007. Foraging for sea urchins: how sea stars help oystercatchers to an easy meal. *Coos Bay Audubon Society Meeting*, Coos Bay, OR.

**Grupe, B.M.** and S.S. Rumrill. 2007. Measuring and displaying vertical elevation at your field site. *Graduate Student Seminar*, Oregon Institute of Marine Biology, Charleston, OR.

## TECHNICAL REPORTS & NON-PEER REVIEWED LITERATURE

Beach hopper bonanza: Inquiry-based learning while having fun! 2009. Clearing Magazine 2009 Copendium, pg. 20-22. *http://clearingmagazine.wordpress.com/2009/04/03/beach-hopper-bonanza/*

Grupe, B.M. The history and impacts of jetties and harbor improvements in Coos Bay, Oregon. 2008. Coos County Maritime and History Museum.

Grupe, B.M. Investigation of beach bacteria on the southern Oregon coast. 2007. South Slough National Estuarine Research Reserve.

2003 Nutrients Metadata Report for System-Wide Monitoring Program. 2004. South Slough National Estuarine Research Reserve.

## GRANTS & FELLOWSHIPS

Mia Tegner Fellowship for coastal research, 2010, $4000.

National Defense Science and Engineering Graduate Fellowship, 2008–2011.

UC San Diego Regents Fellowship, 2008 (declined).

Dr. Earl H. Myers and Ethel M. Myers Oceanographic and Marine Biology Trust, 2005, $1000.

National Science Foundation Graduate Teaching Fellow in K-12 Education, 2004–2006.

Gettysburg College Provost’s Fund for Senior Research, 2003, $500.

## OCEANOGRAPHIC CRUISE EXPERIENCE (122 days)

R/V Melville with Scripps ROV, San Diego Margin. *Chief Scientist*. December 8-15, 2012.

R/V Melville with Scripps ROV, San Diego Margin. *Co-PI*. June 30 – July 10, 2012.

R/V Melville with Sentry AUV, Chile Triple Junction. *Researcher.* April 20–30, 2012.

R/V Atlantis with Jason submersible, Hydrate Ridge methane seeps. *Researcher.* August 31 – September 8, 2011.

R/V Atlantis with Alvin submersible, Hydrate Ridge methane seeps. *Researcher*. July 31 - August 12, 2010.

R/V Atlantis with Alvin submersible, Juan de Fuca hydrothermal vents. *Researcher*. July 6-26, 2010.

R/V Melville, Chile margin. *Researcher.* February 24-March 17, 2010.

R/V Atlantis with Alvin submersible, Costa Rica margin methane seeps. *Researcher*. January 5-12, 2010.

R/V McArthur II, Oregon coast. *Scientific Team Leader*. April 20–27, 2008.

R/V McArthur II, Oregon coast. *Scientific Team Leader*. May 17–20, 2007.

R/V Seward Johnson II with Johnson Sea Link submersible, Gulf of Mexico. *Research Technician*. July 21-29, 2004.

## PROFESSIONAL MEMBERSHIPS & ACTIVITIES

Western Society of Naturalists, 2004-2012.

Ecological Society of America, 2010-2012.

AAAS, 2009-2012.

American Society of Limnology & Oceanography, 2011-2012.

CLIDEEP (Working group on climate change effects on deep-sea ecosystem functioning), 2012.

Deep Submergence Steering Committee (early career scientist program), December 2011.

## MANUSCRIPT REVIEWER

Marine Ecology

Marine Ecology Progress Series

AWARDS & HONORS

Best Student Paper, Honorable Mention for Ecology and Conservation (Mia Tegner Award), *Western Society of Naturalists Annual Meeting*, 2006.

Phi Beta Kappa, 2003.

Biology Departmental Honors, Gettysburg College, 2003.

Environmental Studies Departmental Honors, Gettysburg College, 2003.

Gettysburg College Senior Award, 2003.

Omicron Delta Kappa, 2003.

SCRIPPS COMMUNITY ACTIVITIES

Mentor for SURF REU student, summer 2011 & 2012.

Biological Oceanography Student Representative, 2009-2012.

Scripps Aquarium Committee, 2010-current.

Student committee for Biological Oceanography faculty evaluations, 2010-2012.

Volunteer speaker for research talks to local school groups and summer camps.

Participating member of:

Grassroots Diversity-in-Action Working Group (GDAWG)

Scripps Community Outreach Program for Education (SCOPE)