

Curriculum Vitae
Matthew E.S. Bracken

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Education:

1997-2003 Ph.D. in Zoology, Oregon State University (Advisors: Jane Lubchenco and Bruce Menge)
1993-1997 B.S. in Biology (Mathematics Minor), University of Puget Sound; Cum Laude, Coolidge
Otis Chapman Honors Scholar, Phi Kappa Phi

Professional Experience:

2007- Assistant Professor, Department of Biology, Northeastern University
2005-2007 Postdoctoral Scholar, Bodega Marine Laboratory, University of California, Davis (Advisor:
Susan Williams)
2004-2005 Postdoctoral Scholar, Section of Evolution and Ecology, University of California, Davis
(Advisor: Jay Stachowicz)
2003-2004 Visiting Postdoctoral Researcher, Edward Percival Field Station, Kaikoura, New Zealand
2003 Postdoctoral Research Associate, Department of Zoology, Oregon State University
2001-2003 Graduate Research Assistant, Partnership for Interdisciplinary Studies of Coastal Oceans,
Oregon State University
1999, 2002 Graduate Fellow, Marine Ecosystem Dynamics Consortium, University of Canterbury,
Christchurch, New Zealand
1998-2001 Graduate Research Fellow, National Science Foundation
1997-1998 Graduate Teaching Assistant, Department of Zoology, Oregon State University

Publications:

Bracken, M.E.S., S.E. Friberg, C.A. Gonzalez-Dorantes, and S.L. Williams. 2008. Functional consequences of realistic biodiversity changes in a marine ecosystem. *Proceedings of the National Academy of Sciences, USA* 105: 924-928.

Bracken, M.E.S., B.E. Bracken, and L. Rogers-Bennett. 2007. Species diversity and foundation species: potential indicators of fisheries yields and marine ecosystem functioning. *California Cooperative Oceanic Fisheries Investigations Reports* 48: 82-91.

Elser, J.J., M.E.S. Bracken, E.E. Cleland, D.S. Gruner, W.S. Harpole, H. Hillebrand, J.T. Ngai, E.W. Seabloom, J.B. Shurin, and J.E. Smith. 2007. Global analysis of nitrogen and phosphorus limitation of primary producers in freshwater, marine, and terrestrial ecosystems. *Ecology Letters* 10: 1135-1142.

Bracken, M.E.S., C.A. Gonzalez-Dorantes, and J.J. Stachowicz. 2007. Whole-community mutualism: associated invertebrates facilitate a dominant habitat-forming seaweed. *Ecology* 88: 2211-2219.

Bracken, M.E.S. 2007. Excretion. Pages 215-217 in M.W. Denny and S.D. Gaines, editors. *Encyclopedia of Tidepools and Rocky Shores*. University of California Press, Berkeley, California, USA.

Hillebrand, H., D.S. Gruner, E.T. Borer, M.E.S. Bracken, E.E. Cleland, J.J. Elser, W.S. Harpole, J.T. Ngai, E.W. Seabloom, J.B. Shurin, and J.E. Smith. 2007. Consumer versus resource control of producer diversity depends on ecosystem type and producer community structure. *Proceedings of the National Academy of Sciences, USA* 104: 10904-10909.

Bracken, M.E.S. and J.J. Stachowicz. 2007. Top-down modification of bottom-up processes: selective grazing reduces macroalgal nitrogen uptake. *Marine Ecology Progress Series* 330: 75-82.

Bracken, M.E.S. and J.J. Stachowicz. 2006. Seaweed diversity enhances nitrogen uptake via complementary use of nitrate and ammonium. *Ecology* 87: 2397-2403.

Bracken, M.E.S. 2004. Invertebrate-mediated nutrient loading increases growth of an intertidal macroalga. *Journal of Phycology* 40: 1032-1041.

- Bracken, M.E.S. and K.J. Nielsen. 2004. Diversity of intertidal macroalgae increases with nitrogen loading by invertebrates. *Ecology* 85: 2828-2836.
- Menge, B.A., J. Lubchenco, M.E.S. Bracken, F. Chan, M.M. Foley, T.L. Freidenburg, S.D. Gaines, G. Hudson, C. Krenz, H. Leslie, D.N.L. Menge, R. Russell, and M.S. Webster. 2003. Coastal oceanography sets the pace of rocky intertidal community dynamics. *Proceedings of the National Academy of Sciences, USA* 100:12229-12234.
- Bracken, M.E. 2003. Linking marine communities and ecosystems: invertebrates mediate nutrient availability in intertidal communities. Ph.D. dissertation, Oregon State University, Corvallis.

In Press:

- Bracken, M.E.S. *in press*. Monocultures versus polycultures. *in* S.E. Jørgensen, editor. Encyclopedia of Ecology. Elsevier, Oxford, UK.
- Olyarnik, S.V., M.E.S. Bracken, J.E. Byrnes, A.R. Hughes, K.M. Hultgren, and J.J. Stachowicz. *in press*. Ecological factors affecting community invasibility. *in* G. Rilov and J. Crooks, editors. Marine Bioinvasions: Ecology, Conservation, and Management Perspectives. Springer, Berlin, Germany.

Submitted and In Preparation:

- Gruner, D.S., J.E. Smith, E.W. Seabloom, S.A. Sandin, J.T. Ngai, H. Hillebrand, W.S. Harpole, J.J. Elser, E.E. Cleland, M.E.S. Bracken, E.T. Borer, and B.M. Bolker. *in review*. A cross-system synthesis of consumer and nutrient resource control on producer biomass. *Ecology Letters*.
- Aquilino, K.M., M.E.S. Bracken, M.N. Faubel, and J.J. Stachowicz. *in review*. Local-scale autochthonous nutrient inputs in an upwelling ecosystem facilitate seaweed growth on wave-exposed rocky shores. *Limnology and Oceanography*.
- Stachowicz, J.J., M. Graham, M.E.S. Bracken, and A.I. Szoboszlai. *in review*. Diversity enhances cover and stability of seaweed assemblages: the importance of environmental heterogeneity and experimental duration. *Ecology*.
- Gamfeldt, L. and M.E.S. Bracken. *in review*. The role of biodiversity for the functioning of rocky reef communities. *in* M. Wahl, editor. Marine Hard Bottom Communities. Springer Verlag, Berlin, Germany.
- Bracken, M.E.S., B.A. Menge, M.M. Foley, C.J.B. Sorte, D.R. Schiel, and J. Lubchenco. *in prep*. Context-dependency of species' roles as mediators of marine ecosystem functions. (for *Limnology and Oceanography*).

Grants, Honors, and Awards:

2006-2009	National Science Foundation: Influences of nonrandom biodiversity change on marine ecosystem functioning (co-PIs S. Williams & M. Bracken)	\$512,219
2001-2002	Markham Endowment Award, Hatfield Marine Science Center	\$7,450
2000	Best Student Paper Award, Western Society of Naturalists	\$100
1999	Hopkins Marine Station Summer Course Scholarship	\$1,825
1998-2001	National Science Foundation Graduate Research Fellowship	\$78,500
1998-2001	Oregon Laurels Scholarship, Oregon State University	\$13,000
1998	Zoology Research Fund, Oregon State University	\$500
1996	Simpson-Kraft Tacoma Summer Science Research Grant	\$2,000
1996	University Enrichment Committee Grant, University of Puget Sound	\$450
1993-1997	National Merit Scholarship, University of Puget Sound	\$4,000
1993-1997	Robert C. Byrd Congressional Scholarship, U.S. Dept. of Education	\$10,000
1993-1996	National Science Scholarship, U.S. Dept. of Education	\$4,500

Invited Presentations, Working Groups, and Symposia:

- 2008 Evening Lecture Series, Marine Science Center, Northeastern University
- 2008 Cramer Seminar Series, Dartmouth College
- 2006 Symposium on *Ecological interactions useful for marine ecosystem-based management*. California Cooperative Oceanic Fisheries Investigations (CalCOFI) Annual Conference

- 2006 Three Seas Colloquium, Marine Science Center, Northeastern University
- 2006 Biology Colloquia, Northeastern University
- 2005-2007 Working Group Member, *Comparing trophic structure across ecosystems*. National Center for Ecological Analysis and Synthesis (NCEAS), Santa Barbara, California
- 2005 Participant, Dissertations Initiative for the Advancement of Limnology and Oceanography (DIALOG VII) Symposium, Dauphin Island Sea Lab, Alabama
- 2005 Weekly Seminar, Moss Landing Marine Laboratories, California State Universities
- 2005 Special Seminar, Bodega Marine Laboratory, University of California, Davis
- 2004 Biology Colloquium, Sonoma State University
- 2004 Symposium on *Linking community and ecosystem approaches in coastal systems*. Western Society of Naturalists Annual Meeting
- 2004 Participant in *Managing for resilience: an integrated approach to coastal marine science and conservation*. Friday Harbor Laboratories, Washington
- 2004 John and Mary Louise Riley Seminar Series, Bodega Marine Laboratory, University of California, Davis
- 2003 Thompson Hall Math and Science Seminar, University of Puget Sound
- 2003 Symposium on *Linking algae, oceanography, and marine ecology*. Phycological Society of America Annual Meeting

Contributed Presentations:

- 2007 Bracken, M.E.S., C.A. Gonzalez-Dorantes, and J.J. Stachowicz. Whole-community mutualism: associated invertebrates facilitate a dominant habitat-forming seaweed. Benthic Ecology Meeting.
- 2005 Bracken, M.E.S. and J.J. Stachowicz. Top-down modification of bottom-up processes: herbivory reduces macroalgal nitrogen uptake. Western Society of Naturalists Annual Meeting.
- 2005 Bracken, M.E.S. and J.J. Stachowicz. Seaweed diversity enhances nitrogen uptake via complementary use of nitrate and ammonium. ESA Annual Meeting.
- 2004 Bracken, M.E.S., B.A. Menge, M.M. Foley, D.R. Schiel, and J. Lubchenco. Species' roles in ecosystem functioning change along productivity gradients. ESA Annual Meeting.
- 2003 Bracken, M., B.A. Menge, M.M. Foley, D.R. Schiel, and J. Lubchenco. Variation in benthic-pelagic coupling along productivity gradients. International Temperate Reef Symposium.
- 2002 Bracken, M.E. Nitrogen loading by invertebrates increases growth of intertidal seaweeds. Western Society of Naturalists Annual Meeting.
- 2002 Bracken, M.E. and K.J. Nielsen. Diversity of intertidal seaweeds increases with nitrogen loading by invertebrates. ESA Annual Meeting.
- 2002 Bracken, M. Local-scale nutrient inputs to intertidal communities. PISCO Public Symposium, Seaside, California.
- 2001 Bracken, M.E., S. Wood, B.A. Menge, M. Foley, and D.R. Schiel. Nutrient inputs into coastal waters: causes and consequences. Centre for Excellence in Aquaculture and Marine Ecology: Marine Science Research for Integrated Coastal Management, Kaikoura, New Zealand.
- 2000 Bracken, M.E. Invertebrate-excreted ammonium as a nitrogen source for intertidal seaweeds. Western Society of Naturalists Annual Meeting.
- 2000 Bracken, M.E., B.A. Menge, and M.M. Foley. Potential influences of nearshore oceanographic conditions on mussel physiological ecology and benthic algal biomass accumulation in New Zealand intertidal communities. Pacific Ecology Conference.
- 1996 Bracken, M.E. Modification of behavior in sea anemones by symbiotic unicellular algae. Regional Conference on Undergraduate Research, Tacoma, Washington.

Teaching Experience:

- 2008 Topics in Integrative Biology, BIO G384, Classics and Neoclassics in Ecology, Northeastern University

- 2007 Invited Lecture, BIO U503/G203 Marine Invertebrate Zoology, Northeastern University:
Top-down modification of bottom-up processes in intertidal communities
- 2007 Invited Laboratory Instructor, BIS 122 Population Biology & Ecology of Marine Organisms,
University of California, Davis: Mussels facilitate intertidal seaweeds
- 2006 Invited Laboratory Instructor, BIS 122 Population Biology & Ecology of Marine Organisms,
University of California, Davis: Associated invertebrates facilitate seaweeds
- 2005 Graduate Student Participatory Seminar, ECL 290 Ecological Stoichiometry, University of
California, Davis
- 2004 Invited Lecture, BI 450 Marine Biology (Special Seminar), Oregon State University: From
elements to ecosystems: interdisciplinary approaches to marine ecology
- 2003 Invited Lecture, BIOL 211 Ecology, University of Puget Sound: Linking communities and
ecosystems
- 2001 Invited Lecture, BI 450 Marine Biology (Marine Botany Section), Oregon State University:
Physical influences on seaweed distribution and abundance
- 2001 Invited Lecture, BI 450 Marine Biology (Marine Physiology Section), Oregon State
University: Nutrients and nitrogen assimilation
- 1999-2000 Teaching Assistant, BI 450 Marine Biology (Marine Botany Section), Oregon State
University
- 1998 Co-instructor, Z 352 Marine Ecology Laboratory, Oregon State University
- 1998 Teaching Assistant, BI 212 Principles of Biology, Oregon State University
- 1997 Teaching Assistant, BI 211 Principles of Biology, Oregon State University
- 1996 Teaching Assistant, BIOL 112 Diversity of Life, University of Puget Sound
- 1995 Teaching Assistant, BIOL 212 Cell Biology, University of Puget Sound
- 1994-1997 Tutor and Writing Advisor, Center for Writing and Learning, University of Puget Sound

Service:

- 2006 Co-organizer, California Cooperative Oceanic Fisheries Investigations (CalCOFI)
Conference Symposium
- 2005-2007 Library Committee member, Cadet Hand Library, Bodega Marine Laboratory
- 2005-2006 Coordinating committee, John and Mary Louise Riley Seminar Series, Bodega Marine
Laboratory
- 2005 Coordinator and judge, student paper competition, Western Society of Naturalists Annual
Meeting
- 2004 Judge, student paper and poster competition, Western Society of Naturalists Annual
Meeting
- 2004 Field trip leader, Western Society of Naturalists Annual Meeting
- 2001 Presentation on careers in marine biology, Montessori School, Mesa, Arizona
- 1999-2000 Field trip leader, Friday Harbor Laboratories, Oregon State University Life Sciences Club
- 1998-2000 Organizer, Biology Graduate Student Symposium, Oregon State University
- 1998-1999 Co-President, Zoology Department graduate students, Oregon State University
- 1998 Presentation on "What is marine ecology?" Petersburg High School, Petersburg, Alaska
- 1997 Presentation on threats to oceans, Crescent Valley High School, Corvallis, Oregon
- 1996-1997 President, Phi Sigma Biology Honor Society, University of Puget Sound

Students Mentored:

- Ambre Chaudoin (UC Davis undergraduate, summer 2005), *Habitat selectivity by invertebrates links seaweed and consumer diversity in intertidal communities.*
- Melinda Faubel (UC Davis undergraduate, summer 2005), *Mutualisms between seaweeds and mussels in intertidal communities.*
- Sara Friberg (New Mexico Institute of Mining and Technology undergraduate, Bodega Marine Lab REU, summer 2006), *Functional consequences of realistic species losses in a marine ecosystem.*

Cirse Gonzalez-Dorantes (Duke University undergraduate, Bodega Marine Lab REU, summer 2005),
Microscopic heterotrophs ameliorate nutrient limitation in the fast-growing seaweed Cladophora columbiana.

Reviewer:

Biological Invasions, Conservation Biology, Ecography, Ecology, Ecology Letters, Frontiers in Ecology and the Environment, Functional Ecology, Journal of Applied Phycology, Journal of Coastal Conservation, Journal of Experimental Marine Biology and Ecology, Journal of Phycology, Marine Ecology Progress Series, Oecologia, Oikos, Rhode Island Sea Grant (Book Chapter), Oregon Sea Grant (Grant Proposal), and the National Science Foundation (Grant Proposals).