

# JOHN F. BRUNO

## *Curriculum Vitae*

Associate Professor  
Department of Biology  
The University of North Carolina at Chapel  
Hill Chapel Hill, NC 27599-3280

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## EDUCATION

**Cornell University, Ithaca, NY:** Postdoctoral Research Associate in Disease Ecology  
Section of Ecology and Evolutionary Biology (2000, Advisor: Dr. C. Drew Harvell)  
**Brown University, Providence, RI:** Ph.D. Department of Ecology and Evolutionary Biology  
(May 2000, Advisors: Dr. Mark Bertness and Dr. Jon Witman)  
Dissertation: Macroecology of New England cobble beach plant communities  
**California State University, Northridge, CA:** M.S. Department of Biology  
(May 1995, Advisor: Dr. Peter Edmunds)  
Thesis: The adaptive value of phenotypic plasticity in the coral *Madracis mirabilis*  
**Northeastern University, Boston, MA:** B.S. Department of Biology (May 1991)  
**East/West Marine Biology Program:** Oregon Institute of Marine Biology; Discovery Bay  
Marine Laboratory, Jamaica; Marine Science Center, Nahant, MA (1989-1990)

## PROFESSIONAL EXPERIENCE

**Distinguished Visiting Scientist,** Global Change Institute, University of Queensland and CSIRO  
Climate Adaptation Flagship, Brisbane Australia (2010)  
**Associate Professor,** The University of North Carolina at Chapel Hill (2007- )  
**Assistant Professor,** The University of North Carolina at Chapel Hill (2001-2007)  
**Instructor,** East-West Marine Biology Program in Jamaica and Moorea (2002-2005)  
**Summer Instructor,** Cornell University/Shoals Marine Laboratory (2000-2002)  
**Research Biologist,** Narragansett Bay National Estuarine Research Reserve (1997-1999)  
**Teaching Assistant,** CSUN (1993-1995), (Brown University (1995-1997)  
**Field Biologist,** The Peregrine Fund, Inc/Wyoming Game and Fish (1992)  
**Natural Resources Intern,** The Conservancy, Naples, FL (1991-1992)

## HONORS

“Tar Heel of the Week” Raleigh News and Observer, July 2010 [Link](#)  
Pew Marine Conservation Fellowship Nominee

Pogue Competitive Research Leave: UNC Vice Chancellors Office (2010)  
Invited Plenary Speaker: Annual Meeting of the Ecological Society of Australia (2008)  
Packard Foundation Fellowship for Science and Engineering UNC-CH nominee (2001)  
Joukowsky Family Foundation Outstanding Dissertation Award (2000)  
Western Society of Naturalists, Best Student Paper Award (1998)  
California State University, Schiffman Award for Excellence in Scientific Research (1995)

## REFEREED PUBLICATIONS

PDFs can be downloaded [here](#)

\*graduate student co-author, †undergraduate student co-author

Żychaluk, K, J.F. Bruno, D. Clancy, T.R. McClanahan and M. Spencer. Modelling regional coral-reef dynamics without mechanistic assumptions. In press at Ecology Letters

Burrows, M.T., D.S. Schoeman, L.B. Buckley, P. Moore, E.S. Poloczanska, K.M. Brander, C. Brown, J.F. Bruno, C.M. Duarte, B.S. Halpern, J. Holding, C.V. Kappel, W. Kiessling, M.I. O'Connor, J.M. Pandolfi, C. Parmesan, F.B. Schwing, W.J. Sydeman and A.J. Richardson. 2011. The pace of shifting climate in marine and terrestrial ecosystems. *Science* 334:652-655

Lowe, P.K.\*, J.F. Bruno, E.R. Selig and M. Spencer. 2011. Empirical models of transitions between coral reef states: effects of regions, marine protected areas, and environmental change scenarios. *PLoS One* 6(11) e26339

Hughes, T.P., D.R. Bellwood, A.H. Baird, J. Brodie, J.F. Bruno, J.M. Pandolfi. 2011. Shifting base-lines, declining coral cover, and the erosion of reef resilience: comment on Sweatman et al. (2011). *Coral Reefs* 30: 653-660

Brander, K., J. Bruno, A. Hobday and D. Schoeman. 2011. The value of attribution. *Nature Climate Change*. 1: 70-71

Long, Z.T., J.F. Bruno and J.E. Duffy. 2011. Food chain length and omnivory determine the stability of a marine subtidal food web. *J. Animal Ecology* 80: 586-594

Bruno J.F., S.P. Ellner, I. Vu, K. Kim, and C.D. Harvell. 2011. Impacts of aspergillosis on sea fan coral demography: modeling a moving target. *Ecological Monographs* 81: 123-139

Kiers, T.E., T.M. Palmer, A R. Ives, J.F. Bruno, and J.L. Bronstein. 2010. Mutualisms in a changing world: an evolutionary perspective. *Ecology Letters* 13: 1459-1474

Dudgeon, S.R., R.B. Aronson, J.F. Bruno and W.F. Precht. 2010. Phase shifts and stable states on coral reefs. *Marine Ecology Progress Series* 413: 201-216

McLeod E., R. Moffitt, A. Timmermann, R. Salm, L. Menviel, M.J. Palmer, E.R. Selig, K.S. Casey and J.F. Bruno 2010. Warming seas in the coral triangle: coral reef vulnerability and

management implications. *Coastal Management* 38: 518-539

Moran, E. R. †, P.L. Reynolds\*, L.M. Ladwig, M.I. O'Connor\*, Z.T. Long, and J.F. Bruno. 2010. Predation intensity is negatively related to plant species richness in a benthic marine community. *Marine Ecology Progress Series* 400:277-282

Hoegh-Guldberg, O. and J.F. Bruno. 2010. Impacts of climate change on the world's marine ecosystems. *Science* 328:1523-1528

Butchart, S.H.M., M. Walpole, R. Almond, B. Bombard, J.F. Bruno, et al. 2010. Global biodiversity: indicators of recent declines. *Science* 238:1164-1168

Selig, E.R. \*, K.S. Casey, and J.F. Bruno. 2010. New insights into global patterns of ocean temperature anomalies: implications for coral reef health and management. *Global Ecology and Biogeography* 19:397-411

Schutte, V.G.W. †, E.R. Selig\* and J.F. Bruno. 2010. Regional spatio-temporal trends in Caribbean coral reef benthic communities. *Marine Ecology Progress Series* 402: 115-122

Selig, E.R.\* and J.F. Bruno. 2010. A global analysis of the effects of marine protected areas on coral loss. *PLoS One* 5:e9278

O'Connor, M.I., M.F. Piehler, D. Leech, A. Anton and J.F. Bruno. 2009. Warming and resource availability shift food web structure and metabolism. *PLoS Biology* 7:e1000178

Bruno, J.F., H. Sweatman, W.F. Precht, E.R. Selig\* and V.G.W. Schutte†. 2009. Assessing evidence of phase shifts from coral to macroalgal dominance on coral reefs. *Ecology* 90:1478-1484

O'Connor, M.I. \*, and J.F. Bruno. 2009. Predator richness has no effect in a diverse marine food web. *J. Animal Ecology* 78:732-740

Boyer, K.E., J.S. Kertesz\*, and J.F. Bruno. 2009. Environmental context influences the effects of species richness on productivity but not stability of marine macroalgal communities. *Oikos* 118: 1062-1072

Lee, S.C.\* and J.F. Bruno. 2009. Propagule supply controls grazer community structure and primary production in a benthic marine ecosystem. *Proceedings of the National Academy of Sciences, USA* 106: 7052–7057

Selkoe, K.A., B.H. Halpern, C. Ebert, E. Franklin, E. Selig\*, K. Casey, J. Bruno, and R.J. Toonen. 2009. A map of cumulative impacts to a “pristine” coral reef ecosystem, the Papahānaumokuākea Marine National Monument. *Coral Reefs* 28:635–650

Vu, I†., G. Smelick, S†. Harris†, S.C. Lee\*, E. Weil, R.F. Whitehead and J.F. Bruno. 2009. Macroalgae has no effect on the severity and dynamics of Caribbean yellow band disease. *PLoS One* 4(2): e4514

Bruno, J.F., and B.J. Cardinale. 2008. Cascading effects of predator richness. *Frontiers in Ecology and the Environment* 6:539-546

Bruno, J.F., K.E. Boyer, J.E. Duffy and S.C. Lee\*. 2008. Relative and interactive effects of plant and grazer richness in a benthic marine community. *Ecology* 89:2518-2528

Halpern, B.S., C.V. Kappel, F. Micheli, Selkoe, K.A., C. D'Agrosa, J.F. Bruno, K.S. Casey, C. Ebert, H.E. Fox, R. Fujita, D. Heinemann, H.S. Lenihan, E.M.P. Madin, M. Perry, E.R. Selig\*, M. Spalding, R. Steneck, S. Walbridge, R. Watson. 2008. Response to "Southern ocean not so pristine" and "Diminishing sea ice" *Science* 321:1444-1445 (*Letter to the editor*)

Selkoe, K.A., C.V. Kappel, B.S. Halpern, F. Micheli, C. D'Agrosa, J.F. Bruno, K.S. Casey, C. Ebert, H.E. Fox, R. Fujita, D. Heinemann, H.S. Lenihan, E.M.P. Madin, M. Perry, E.R. Selig\*, M. Spalding, R. Steneck, S. Walbridge, R. Watson. 2008. Response to comment on "A global map of human impact on marine ecosystems" *Science* 321:1446c (*Technical comment*)

Bulleri, F., J.F. Bruno, and L. Benedetti-Cecchi. 2008. Beyond competition: incorporating positive interactions between species to predict ecosystem invasibility. *PLoS Biology* 6: e162

Douglas, J.G.\*, J.E. Duffy and J.F. Bruno. 2008. Herbivore and predator diversity interactively affect ecosystem properties in experimental marine communities. *Ecology Letters* 11: 598-608

Halpern, B.S., S. Walbridge, K.A. Selkoe, C.V. Kappel, F. Micheli, C. D'Agrosa, J.F. Bruno, K.S. Casey, C. Ebert, H.E. Fox, R. Fujita, D. Heinemann, H.S. Lenihan, E.M.P. Madin, M. Perry, E.R. Selig\*, M. Spalding, R. Steneck, R. Watson. 2008. Assessing and mapping the global impact of human activities on marine ecosystems. *Science* 319:948-952

O'Connor. N.E., J.H. Grabowski, L.M. Ladwig, and J.F. Bruno. 2008. Simulated predator extinctions: predator identity affects the survival and settlement of oysters. *Ecology* 89:428-438

O'Connor. N.E. and J.F. Bruno. 2007. Identity of predator functional groups affects the structure and functioning of a model marine food web. *Oikos* 116:2027-2038

Long, Z.T., J.F. Bruno and J.E. Duffy. 2007. Biodiversity mediates functioning through different mechanisms at adjacent trophic levels. *Ecology* 88:2821-2829

Stachowicz, J.J., J.F. Bruno, and J.E. Duffy. 2007. Understanding the effects of marine biodiversity on communities and ecosystems. *Annual Review of Ecology, Evolution, and Systematics* 38:739-766

Sax, D. F., J.J. Stachowicz, J.H. Brown, J.F. Bruno, M.N. Dawson, S.D. Gaines, R.K. Grosberg, A. Hastings, R.D. Holt, M.M. Mayfield, M.I. O'Connor\*, and W.R. Rice. 2007. Ecological and evolutionary insights from species invasions. *Trends in Ecology and Evolution* 22:465-471

Bruno, J.F., and E.R. Selig\*. 2007. Regional decline of coral cover in the Indo-Pacific: timing, extent, and subregional comparisons. *PLoS One* 8:e711

Bruno, J.F., E.R. Selig\*, K.S. Casey, C.A. Page\*, B.L. Willis, C.D. Harvell, H. Sweatman, and A.M. Melendy. 2007. Thermal stress and coral cover as drivers of coral disease outbreaks. *PLoS Biology* 5:e124

Halpern, B.S., B.R. Silliman, J.D. Olden, J.F. Bruno, and M.D. Bertness. 2007. Incorporating positive interactions in aquatic restoration and conservation. *Frontiers in Ecology and the Environment* 5:153-160

O'Connor, M.I.\*, J.F. Bruno, S.D. Gaines, B.S. Halpern, S.E. Lester\*, B.P. Kinlan\*, and J.M. Weiss. 2007. Temperature control of larval dispersal and the implications for marine ecology, evolution and conservation. *Proceedings of the National Academy of Sciences, USA* 104:1266-1271

Bruno, J.F., S.C. Lee\*, J.S. Kertesz†, R.C. Carpenter, Z.T. Long, and J.E. Duffy. 2006. Partitioning the effects of algal species identity and richness on benthic marine primary production. *Oikos* 115:170-178

Idjadi, J.A.\*, S.C. Lee\*, J.F. Bruno, W.F. Precht, L. Allen-Requa\*, and P.J. Edmunds. 2006. Rapid phase-shift reversal on a Jamaican coral reef. *Coral Reefs* 25:209-211

Ward, J.R.\*, K.L. Rypien\*, J.F. Bruno, C.D. Harvell, E. Jordán-Dahlgren, K.M. Mullen, R.E. Rodríguez-Martínez, J. Sánchez, and G. Smith. 2006. Coral diversity and disease in Mexico. *Diseases of Aquatic Organisms* 69:23-31

van de Koppel, J., A.H. Altieri\*, B.R. Silliman, J.F. Bruno, and M.D. Bertness. 2006. Scale-dependent interactions and community structure on cobble beaches. *Ecology Letters* 9:45-50

Bruno, J.F., K.E. Boyer, J.E. Duffy, S.C. Lee\*, and J.S. Kertesz†. 2005. Effects of species identity and richness on primary production in benthic marine communities. *Ecology Letters* 8:1165-1174

Bruno, J.F., and M.I. O'Connor\*. 2005. Cascading effects of predator diversity and omnivory in a marine food web. *Ecology Letters* 8:1048-1056

Precht, W.F., S.L. Miller, R.B. Aronson, J.F. Bruno, and L. Kaufman. 2005. Reassessing U.S. coral reefs. *Science* 308: 1741 (*Letter to the editor*)

LaJeunesse, T.C., S. Lee\*, S. Bush†, and J.F. Bruno. 2004. Persistence of non-Caribbean algal symbionts in Indo-Pacific mushroom corals released to Jamaica 35 years ago. *Coral Reefs* 24:157-159

- Edmunds, P.J., J.F. Bruno, and D.B. Carlton. 2004. Effects of depth and microhabitat on growth and survivorship of juvenile corals in the Florida Keys. *Marine Ecology Progress Series* 278: 115-124
- Fridley, J.D., R.L. Brown\*, and J.F. Bruno. 2004. Null models of exotic invasions and scale-dependent patterns of native and exotic species richness. *Ecology* 85: 3215-3222
- Bush, S. †, W.F. Precht, J.D. Woodley, and J.F. Bruno. 2004. Indo-Pacific mushroom corals found on Jamaican reefs. *Coral Reefs* 23: 234
- Bruno, J.F., C.W. Kennedy†, T.A. Rand, and M.B. Grant†. 2004. Exotic invasion of a marine plant community: A landscape-scale test of some key predictions and paradigms of invasion biology. *Oikos* 107: 531-540
- Bruno, J.F., L. Petes†, C.D. Harvell, and A. Hettinger†. 2003. Nutrient enrichment can increase the severity of two Caribbean coral diseases. *Ecology Letters* 6:1056-1061
- Aronson, R.B., J.F. Bruno, W.F. Precht, P.W. Glynn, C.D. Harvell, L.S. Kaufman, C.S. Rogers, E.A. Shinn, and J.F. Valentine. 2003. Causes of coral reef degradation. *Science* 302: 1502  
*Letter to the editor*)
- Bruno, J.F., J.J. Stachowicz, and M.D. Bertness. 2003. Inclusion of facilitation into ecological theory. *Trends in Ecology and Evolution* 18:119-125 (*reviewed in Shouse, B. 2003. Conflict Over Cooperation. Science* 299: 644-646)
- Witman, J.D., S.J. Genovese, J.F. Bruno, J.W. McLaughlin, and B.I. Pavlin†. 2003. Massive prey recruitment and the control of subtidal communities on regional spatial scales. *Ecological Monographs* 73:441-462
- Bruno, J.F. 2002. Causes of nested species distributions and landscape-scale rarity in cobble beach plant communities. *Ecology* 83:2304-2314
- Bruno, J.F., C.E. Siddon, J.D. Witman, and P.L. Colin. 2001. El Niño-related coral bleaching in Palau, Western Caroline Islands. *Coral Reefs* 20:127-136
- Bruno, J.F. 2000. Facilitation of cobble beach plant communities through habitat modification by *Spartina alterniflora*. *Ecology* 81:1179-1192
- Bruno, J.F., and C.W. Kennedy. 2000. Patch-size dependent habitat modification and facilitation on New England cobble beaches by *Spartina alterniflora*. *Oecologia* 122:98-108
- Kennedy, C.W., and J.F. Bruno. 2000. Restriction of the upper distribution of New England cobble beach plants by wave-related disturbance. *J. Ecology* 88:856-868
- Bertness, M.D., G.H. Leonard, J.M. Levine, and J.F. Bruno. 1999. Climate-driven interactions among rocky intertidal organisms caught between a rock and a hot place. *Oecologia* 120:446-450

Bruno, J.F. 1998. Fragmentation in *Madracis mirabilis* (Duchassaing and Michelotti): How common is size-specific fragment survivorship in corals? *J. Exp. Mar. Biol. Ecol.* 230:169-181

Bruno, J.F., and P.J. Edmunds. 1998. Metabolic consequences of phenotypic plasticity in the coral *Madracis mirabilis* (Duchassaing and Michelotti): the effect of morphology and water flow on aggregate respiration. *J. Exp. Mar. Biol. Ecol.* 229:187-195

Bruno, J.F., and P.J. Edmunds. 1997. Clonal variation for phenotypic plasticity in the coral *Madracis mirabilis*. *Ecology* 78:2177-2190

Bruno, J.F., and J.D. Witman. 1996. Defense mechanisms of scleractinian cup corals against overgrowth by colonial invertebrates. *J. Exp. Mar. Biol. Ecol.* 207:229-241

Edmunds, P.J., and J.F. Bruno. 1996. The importance of sampling scale in ecology: Kilometer-wide variation in coral reef communities. *Marine Ecology Progress Series* 143:165-171

## **MANUSCRIPTS IN REVIEW OR REVISION**

O'Connor, M.I. C.V. Kappel, C.M. Duarte, K. Brander, C.J. Brown, J.F. Bruno, L. Buckley, M.T. Burrows, B.S. Halpern, P. Moore, J. Pandolfi, C. Parmesan, E.S. Poloczanska, M. Sanchez-Camacho, D.S. Schoeman, W.J. Sydeman, A.J. Richardson. Strengthening tests of climate change impacts on ecosystems. In review at PNAS

Bruno J.F., W.F. Precht and R.B. Aronson. Coral reef baselines: how do we know what natural is? In review at Ecology

Reynolds, P.L.\* and J.F. Bruno. Multiple predators nonconsumptively affect prey density and a trophic cascade in a model marine community. In review at Ecological Monographs

Long, Z.T., M.I. O'Connor\* and J.F. Bruno. Effects of predation and intraspecific aggregation on prey diversity at multiple spatial scales. In revision at Marine Biodiversity

Lee, S.C.\* and J.F. Bruno. Effects of propagule supply and resource availability on local species richness in mobile marine grazer communities. In review at Oikos

Selig, E.R.\* and J.F. Bruno. Temperature-driven coral decline: the role of marine protected areas. In revision at Global Change Biology

## **BOOKS CHAPTERS**

\*graduate student co-author, †undergraduate student co-author

Duffy J.E., J.J. Stachowicz and J.F. Bruno. 2012. Multitrophic biodiversity and the responses of

marine ecosystems to global change. In: Paterson et al. (eds.) *Marine biodiversity futures and ecosystem functioning: Frameworks, methodologies and integration*. Oxford University Press, Oxford (in press)

O'Connor, M.I. and J.F. Bruno. 2012. Marine Invertebrates. In: Brown J.H., R. Sibley and A. Kodric-Brown (eds.) *Metabolic Ecology: A Scaling Approach*. Wiley and Sons, London (in press)

Selig, E.R.\*, C.D. Harvell, J.F. Bruno, B.L. Willis, C.A. Page, K.S. Casey and H. Sweatman. 2006. Analyzing the relationship between ocean temperature anomalies and coral disease outbreaks at broad spatial scales. In: J.T. Phinney, O. Hoegh-Guldberg, J. Kleypas, W. Skirving, and A. Strong (eds.) *Coral reefs and climate change: science and management*. American Geophysical Union, Washington, DC, Pages 111-128

Bruno, J.F., J.D. Fridley\*, K. Bromberg† and M.D. Bertness. 2005. Insights into biotic interactions from studies of species invasions. In: Sax, D.F., S.D. Gaines, and J.J. Stachowicz (eds.) *Species Invasions: Insights into Ecology, Evolution and Biogeography*. Sinauer, Sunderland, MA, Pages 13-40

Bruno, J.F. and M.D. Bertness. 2001. Habitat modification and facilitation in benthic marine communities. In: Bertness M.D., M.E. Hay and S.D. Gaines (eds.) *Marine Community Ecology*. Sinauer, Sunderland, MA pages 201-218

## **SELECTED UNREFEREED ARTICLES AND REPORTS** (Out of ~ 500)

Bruno, J.F. 2011. Fact checking the 60 Minutes segment on Gardens of the Queen Huffington Post [link](#)

Bruno, J.F. 2011. Let us eat (other people's) fish. SeaMonser [link](#)

Bruno, J.F. 2011. What a marine massacre looks like. SeaMonster [link](#)

Bruno, J.F. 2010. The impact of climate change on the world's marine ecosystems. Huffington Post [link](#)

Bruno, J.F. 2010. Biodiversity loss continues unabated despite international efforts. Huffington Post [link](#)

Bruno, J.F. 2010. A down under journalistic wipeout in covering risks to the great barrier reef. Yale Forum on Climate Change and the Media [link](#)

Bruno, J.F. and M. Sorensen. 2009. Warming is fact; denial is harmful. News & Observer op-ed [link](#)

Bruno, J.F. 2009. Danger signals from Great Barrier Reef. newsvine.com/msnbc.com [link](#)



Bruno, J.F. 2008. Origins of sea fan aspergillosis. ClimateShifts.org [link](#)

Bruno, J.F. 2008. Coral reefs and climate change. Encyclopedia of Earth/Earth Portal [link](#)

Bruno, J.F. 2007. Professor makes personal appeal for coral. msnbc.com [link](#)

Bruno, J.F. 2007. Indo-Pacific coral reefs are disappearing more rapidly than expected. Scitizen [link](#)

Bruno, J.F. 2007. Rising ocean temperature leads to coral disease outbreaks. Scitizen [link](#)

## **EXTERNAL FUNDING**

### ***National Science Foundation: Division of Biological Oceanography***

Evolutionary and ecological dimensions of predator invasions in marine communities (2012-2015) \$598,641 (pending)

### ***Rufford Foundation***

Effectiveness of new fisheries regulations in Belize on restoring grazer populations and coral reef resilience (2010-2011) \$10,000

### ***National Science Foundation: Division of Integrative Organismal Systems***

Collaborative Research: Assessing the effect of environmental stressors on invertebrate innate immunity using a coral pathosystem (2010-2013) \$683,861 (with L. Mydlarz and E. Weil)

### ***CSIRO Distinguished Visiting Scientist Fellowship***

Forecasting the effects of climate change on coral reefs ecosystems (2010) \$15,000

### ***North Carolina Division of Coastal Management CRFL grant program***

Fisheries habitat impacts of marsh sills (living shorelines) as a stabilization/restoration alternative to bulkheads (2010-2011) \$212,547 (with C. Peterson & R. Gittman)

### ***The World Bank: Environment Program***

Mapping the vulnerability of coastal marine ecosystems to anthropogenic climate change (2009, w Ben Halpern) \$80,000

### ***National Science Foundation: Biological Oceanography Panel***

Lionfish invasion of the Mesoamerican reef: community invasibility and the evolutionary response of prey avoidance behavior to a novel predator (7/09-6/10) \$133,052

### ***National Geographic Society***

The efficacy of marine reserves on the Mesoamerican Reef in conserving reef-building corals (8/08-8/09) \$13,378

### ***National Science Foundation: Biological Oceanography Panel***

Cascading effects of predator diversity in a marine food web (8/1/06-7/31/09) \$349,927

***NOAA Coral Reef Conservation Program***

Improving the effectiveness of coral MPAs through the analysis and synthesis of global coral thermal stress and decline (6/06-6/08) \$60,000 (with K. Casey-NOAA)

***North Carolina Sea Grant***

Linking biodiversity to the survival of native oyster beds and their associated faunal assemblages (6/05-12/05) \$4,645

***National Science Foundation: Biological Oceanography Panel***

Biodiversity and ecosystem functioning in plant-grazer systems: Experimental tests in a marine benthic community (8/03-7/06) \$470,000 (with J.E. Duffy-VIMS)

***National Science Foundation: Ecology of Infectious Disease Panel***

Origins and spread of the *Aspergillus*-Gorgonian coral epizootic: Role of climate and environmental facilitators (9/03-8/06) \$1,728,000 (with C.D. Harvell, S. Ellner, G. Smith, and G. Vasta)

***PADI Foundation***

Environmental control and demographic effects of coral disease epidemics (6/02-6/03) \$2,400

***National Science Foundation: Population Biology Panel***

Metapopulation dynamics of the New England cobble beach plant community (9/01-8/04) \$138,000

***NOAA, Sanctuaries and Reserves Division, Fellowship Award***

The ecology of New England cobble beach plant communities: An investigation of the factors dictating community distribution (1998-2000) \$50,000

***National Science Foundation Dissertation Improvement Award***

Mechanisms of community facilitation and metapopulation dynamics of New England cobble beach plants (1998-2000) \$4,500

## **CURRENT AND PAST LAB MEMBERS**

***Postdoctoral research associates (4 total):*** Kathryn Boyer (2003-2004, now an Associate Professor at San Francisco State University), Nessa O'Connor (2005, now an Assistant Professor at University College Dublin, Ireland), Zachary Long (2005-2007, now an Assistant Professor at UNCW), Karl Castillo (2008- )

***Graduate students (10 total):*** Elizabeth R. Selig (2003-2008, now a research scientist at Conservation International), Sarah C. Lee (2002-2008, now a post doc at Hopkins Marine Station, Stanford University), Mary O'Connor (now an Assistant Professor at the University of British Columbia, Vancouver), Pamela Reynolds (now a post doc at the Virginia Institute of Marine Sciences), Andrea Anton (4<sup>th</sup> year Ph.D. student), Lindsey Carr (3<sup>rd</sup> year Ph.D. student),

Courtney Cox (3<sup>rd</sup> year Ph.D. student), Rachel Gittman (3<sup>rd</sup> year Ph.D. student), Abel Valdivia (3<sup>rd</sup> year Ph.D. student), Clare Fieseler (1<sup>st</sup> year Ph.D student)

## **PROFESSIONAL SERVICE TO THE DISCIPLINE**

*Editor for* Ecology, Ecological Monographs and Encyclopedia of Earth (since 2005)

*Editor for* PLoS One (2009-2010)

*Creator and editor of* [SeaMonster](#) (a blog about ocean science, sports and discovery)

*Reviewer for* NSF, NOAA, Ecology Letters, Ecology, Canadian Journal of Botany, Marine Ecology Progress Series, Journal of Experimental Marine Biology and Ecology, Oikos, Oecologia, Trends in Ecology and Evolution, Diversity and Distributions, Marine Biology, Coral Reefs, PNAS, Science, and Nature

*Member of the Three Seas Marine Biology Program's Advisory Board* (2003-2007)

*Director and Lead Instructor of Cornell University's Tropical Marine Science Program, Akumal, Mexico* (2000-2002)

*National Science Foundation Panel:* In May 2005 I served on a review panel for the Biological Oceanography Panel and have been invited to serve on several other NSF, NOAA, and EPA panels.

*Participants in the National workshop on "Approaches for Researching the Roles of Marine and Coastal Biodiversity in Maintaining Ecosystem Services"* sponsored by the U.S. National Committee of the Census of Marine Life (CoML) and the Consortium for Oceanographic Research and Education (CORE) (Washington, DC, September 2006).

*Participant in NCEAS working group on "Insights from exotic species"* (2004-2007)

*Leader of NCEAS working group on "Community Saturation"* (September 2007)

*Participant in NCEAS working group on "Marine Climate Change Impacts"* (2009-2011)

*Coordinator and speaker*, special session at the 2011 National Council for Science and the Environment "Our Changing Oceans" meeting titled "*Impacts of Climate Change on Ocean Ecosystems in the 21<sup>st</sup> century*"

## **PROFESSIONAL SERVICE TO THE UNIVERSITY**

*College of Arts and Sciences*

- Member Polanyi seminar committee
- Founding member Carolina Climate Change Scientists (<http://cccs.web.unc.edu/>)

- Member Office of undergraduate Research SURF grant selection committee

• ***Department of Marine Sciences/Institute of Marine Sciences***

- Member of the Graduate Admissions Committee (2001-2010)
- Member IMS/MASC diving control board (2003- )
- Member biological oceanography search committee (2005-06, 2010)
- Organized several visits to MASC/UNC by the Cousteau family (2005)
- Participated in several MASC and IMS Board of Visitors meetings

***Curriculum in Ecology***

- Faculty Appointments Committee (2003- )
- Chair of Graduate Studies Committee (2002-05)
- Member Graduate Program Review Committee

***Department of Biology***

- Assisted in organizing the 2006 Biology graduate student recruitment weekend and hosted an EEOB applicant party at my home
- Assisted in writing recent strategic planning documents
- Member Conservation Biology search committee (2003)

***Center for Galapagos Studies***

- Galapagos Science Center Board (2009-2011)

***Institute for the Environment***

- Plenary speaker at the 2010 Board of Visitors meeting
- Regular speaker/participant in the IE Climate Change Summer Institute and Teachers Climate Change Workshops

## **SELECTED CONFERENCE AND SEMINAR ABSTRACT TITLES**

*\*invited symposia talk*

**Bruno, J.F.** Impacts of climate change on ocean ecosystems. Invited outreach scientist by Polar Bears International for a week-long media project in Churchill, Manitoba, Canada, November 2011

**Bruno, J.F.** Changes in Caribbean reef communities: patterns, causes and mitigation. Plenary speaker for the Student Research Colloquium, College of Charleston, September 2011, Charleston SC

**\*Bruno, J.F.** Impacts of climate change on ocean ecosystems in the 21<sup>st</sup> century. National Council for Science and the Environment Annual Meeting, January 2011, Washington DC

**Bruno, J.F.** Impacts of climate change on ocean ecosystems. RTI International, October 2010, Durham, NC

**Bruno, J.F.** The future of coral reefs. CSIRO Climate Change Flagship, May 2010, Brisbane Australia

**Bruno, J.F.** Florida's coral reefs: threats, decline, management, and signs of hope. Newell Seminar Speaker, FSU and FSU Coastal and Marine Laboratory, February 2009, Tallahassee, FL and St. Teresa, FL

**Bruno, J.F.** Climate change and coral reef resilience: are we expecting too much from marine reserves? Annual graduate student seminar speaker FIU, February 2009, Miami FL

**Bruno, J.F.** Linking global change and coral epizootics. Sigma Xi, December 2008, Durham, NC

\***Bruno, J.F.** Effects of fishing and macroalgae on coral disease dynamics. International Coral Reef Symposium, July 2008, Fort Lauderdale, Florida

\***Bruno, J.F.** Climate change and coral reef resilience: are we expecting too much from marine reserves? Invited Plenary Speaker: Annual Meeting of the Ecological Society of Australia, 2008, Sydney Australia

**Bruno, J.F.** Environmental drivers of coral epizootics and global patterns of coral reef decline. Invited seminar speaker UCLA, November 2007, Los Angeles CA

\***Bruno, J.F.** Global coral decline: regional baselines, timing, and variation. 2nd Annual Coral Reef Conservation and Management Conference, November 2006, Miami, FL

\***Bruno, J.F.** and S.C. Lee. The role of species saturation and propagule limitation in structuring benthic marine communities. Annual Meeting of the Ecological Society of America, August 2006, Memphis, TN

Long, Z.T., **J.F. Bruno**, and J.E. Duffy. Biodiversity mediates productivity through different mechanisms at adjacent trophic levels. Annual Meeting of the Ecological Society of America, August 2006, Memphis, TN

\***Bruno, J.F.** What are the cascading effects of predator diversity in marine food webs? International Temperate Reef Symposium, June 2006, Santa Barbara, CA

O'Connor, N.E., J.H. Grabowski and **J.F. Bruno**. Species loss and ecosystem functioning: Effects of simulated predator extinctions on an ecosystem engineer. International Temperate Reef Symposium, June 2006, Santa Barbara, CA

Casey, K.S., E.R. Selig, and **J.F. Bruno**. Use of satellite-based pathfinder sea surface temperatures for understanding coral disease dynamics. ASLO, July 2006, Victoria, British Columbia, Canada

\*Fridley, J, **J.F. Bruno** and B. Brown. Scale-dependent invasion patterns and null models of community assembly. Annual Meeting of the Ecological Society of America, August 2005, Montreal, Canada

\***Bruno, J.F.** Biodiversity in marine ecosystems. Duke University Marine Laboratory, April 2005, Beaufort, NC

\***Bruno, J.F.**, J.E. Duffy and Z. Long. Decomposing the net effects of plant diversity in marine ecosystems: selection versus complementarity. Benthic Ecology Meeting, March 2005, Williamsburg, VA

O'Connor, M.I. and **J.F. Bruno**. Cascading predator diversity effects dominated by the inclusion of omnivores. Benthic Ecology Meeting, March 2005, Williamsburg, VA

\***Bruno, J.F.** Macroecology of the cobble beach plant community. Duke University, March 2005

**Bruno, J.F.**, S.C. Lee, J. Kertesz, R. Carpenter, K. Boyer, J.E. Duffy. Is algal species identity or diversity related to primary production in benthic marine communities? Annual Meeting of the Ecological Society of America, August 2004, Portland, OR

**Bruno, J.F.**, S.C. Lee, J. Kertesz, R. Carpenter, K. Boyer, J.E. Duffy. Biodiversity and ecosystem functioning in benthic marine communities. Benthic Ecology Meeting, March 2004, Mobile AL

\***Bruno, J.F.**, K. Boyer, S.C. Lee, J.E. Duffy. Biodiversity and ecosystem functioning in multi-trophic systems: experimental tests in a benthic marine community. Annual meeting of the American Society of Limnology and Oceanography, February 2004, Honolulu, HI

\***Bruno, J.F.** Macroecology of the cobble beach plant community. Appalachian State University, November 2003, Boone, NC

**Bruno, J.F.** Nutrient enrichment can increase the severity of Caribbean coral diseases. Annual meeting of the Ecological Society of America, August 2003, Savannah, GA

Boyer, K. **J.F. Bruno**, J.E. Duffy. Biodiversity and ecosystem functioning in plant-grazer systems: experimental tests in a marine benthic community. Annual Meeting of the Ecological Society of America, August 2003, Savannah, GA

**Bruno, J.F.** Nutrient enrichment can increase the severity of two coral diseases. Annual Benthic Ecology Meeting, March 2003, Mystic, CT

S. Talmage, **J.F. Bruno**. A test of two remediation techniques for yellow band disease in the Caribbean reef building coral *Montastrea spp.* Annual Benthic Ecology Meeting, March 2003, Mystic, CT