

**Paul Andrew Xavier Bologna, Ph.D.**

Department of Biology and Molecular Biology  
Montclair State University, Montclair, NJ 07043

**Biological Sketch**

Dr. Bologna has been conducting research in New Jersey since 1998. He is currently an Associate Professor of Biology and Molecular Biology at Montclair State University and is the Director of the Aquatic and Coastal Sciences Program. Dr. Bologna's research experience includes work in freshwater and marine ecosystems assessing community diversity and productivity. His areas of expertise include ecology, population biology and genetics of bay scallops; pervasiveness of invasive plants in wetlands and disturbed systems; and ecology, population biology, faunal associations and habitat restoration of submerged aquatic vegetation (SAV). His research and restoration efforts regarding SAV were recognized by the New Jersey Department of Environmental Protection when he was awarded the 2002 Healthy Ecosystems Award. Dr. Bologna has received funding for his research from various sources including the United States Environmental Protection Agency, New Jersey Sea Grant, Barnegat Bay Estuary Program, and the New Jersey Department of Environmental Protection and has published 20 peer-reviewed articles in the last 10 years. Dr. Bologna regularly reviews funding proposals and manuscripts from national and international venues. He is also the President-Elect of the New Jersey Academy of Sciences and a member of the Barnegat Bay Science Technical Advisory Committee.

# Paul A. X. Bologna

## Curriculum Vitae

### Work Address

Montclair State University  
Department of Biology and Molecular Biology  
Montclair, NJ 07043  
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(973) 655-4112 office (973) 655-7047 fax

### Academic Positions

Associate Professor, Montclair State University, 2007 – Present  
Director, Aquatic and Coastal Sciences Program, 2005 – Present  
Doctoral Faculty, Montclair State University, 2004 – Present  
Passaic River Institute Faculty, Montclair State University, 2004 - Present  
Assistant Professor, Montclair State University, 2003 – 2007  
Assistant Professor and Marine Biology Program Director, Fairleigh Dickinson University, 2000-2003  
Adjunct Professor, Rutgers University, 1999  
Adjunct Professor, Maine Maritime Academy, 1997

### Education

**Ph. D. Marine Science 1998**, University of South Alabama.  
Dissertation: The effects of seagrass habitat architecture on associated fauna.  
Major Professor, Kenneth L. Heck, Ph.D.  
**M. S. Oceanography 1992**, University of Maine.  
Thesis: Kelp beds as habitat for the American lobster, *Homarus americanus*.  
Major Professor, Robert S. Steneck, Ph.D.  
**B. S. Zoology 1988**, Michigan State University.

### Administrative Experience

As Director of the Aquatic and Coastal Sciences Program, my duties include curriculum development, program assessment, oversight and integration among contributing departments for a combined and accelerated Bachelors and Masters program of study (5 year combined BS/MS). In my capacity as director, I regularly engage in strategic planning and setting long-term goals for the various programs within the College of Science and Mathematics, as well as the New Jersey Marine Science Consortium, the New Jersey Academy of Sciences, and the Barnegat Bay Estuary Program. I have extensive budget development and management experience through numerous externally funded grants. I have also developed curriculum and funding for educational field-based programs in marine science. I regularly assess faculty and professional staff, work collaboratively on interview and hiring committees, and supervise technical staff and students.

### Current Research

**Assessing Invasive Plant Species in Floodplain Wetlands of the Upper Passaic River and Initiating a Geospatial Database of Invasive Plants in New Jersey. EPA. \$46,668. Co-PI with Danlin Yu, Department of Earth and Environmental Studies; Kirk Barrett, Passaic River Institute, Montclair State University.**

Invasive plant species are a major and growing threat to native biodiversity and ecosystem functions, including water quality protection, in wetlands throughout the United States, including New York and New Jersey. Despite the importance of this threat, basic data is lacking that would enable assessment of the current extent and rate of expansion of particular invasives. The goal of this project

is to start to remedy this problematic lack of data. We propose to assess the presence and relative abundance of invasive plant species in three large wetlands along the floodplain of the Passaic River, and repeat this assessment annually or biennially.

**Assessing the population genetic structure of eelgrass (*Zostera marina* L.): implications for management and restoration of a coastal habitat. New Jersey SeaGrant. \$77,662. Co-PI with James Campanella, Montclair State University.**

*Zostera marina* is one of the most widely distributed seagrasses in the world. It serves as essential fish habitat for many commercially and recreationally important species and provides stability to coastal systems through reductions in water velocity, increased wave attenuation, and stabilization of sediments. However, due to coastal eutrophication, *Z. marina* has undergone significant declines in spatial coverage throughout much of its range. Along the mid-Atlantic Coast, *Z. marina* declines have been linked to disease and changes in water quality and the problems facing many coastal managers relate to minimizing losses and increasing coverage through restoration efforts. In New Jersey, the wasting disease outbreak in the 1930's is thought to be responsible for the elimination of *Z. marina* in the southern part of the state. Since limited natural transport of seeds can occur across these distances, active restoration may lead to significant increases in spatial coverage if successfully reestablished in these regions. Essentially, once small populations are established, they can expand vegetatively and through seed dispersal. This project will provide a critical assessment of the genetic structure of *Z. marina* populations in New Jersey and provide guidance for future restoration efforts.

**Assessing Harmful Algal Blooms on Submerged Aquatic Vegetation in Barnegat Bay. Barnegat Bay Estuary Program. \$26,268.**

Submerged Aquatic Vegetation is a critical habitat in Barnegat Bay and is one of the primary environmental indicators identified by the Barnegat Bay Estuary Program. This research meets several important objectives by continuing to monitor the health, biomass, and community structure of eelgrass and widgeon grass beds in Barnegat Bay and assessing an important data gap regarding harmful macro-algal and phytoplankton blooms. Specifically, data collected from this project includes monitoring three long-term eelgrass beds and one long-term widgeon grass bed for plant demographics (e.g., shoot density, biomass), health (presence of wasting disease), and benthic community structure (secondary indicator). Additionally, this research will use manipulative field experiments to assess the impacts of macroalgal loading on eelgrass beds and conduct brown-tide monitoring within Barnegat Bay.

## **Past Funded Research Projects**

**Genetic Stock Assessment of New Jersey Bay Scallops using Microsatellite Primers. New Jersey SeaGrant, 2005-2006. \$5,000. Co-PI with James Campanella, Montclair State University.**

**Restoration and Spatial Assessment of Submerged Aquatic Vegetation in Barnegat Bay, New Jersey Phase II. New Jersey Department of Environmental Protection (EPA Section 319H), 2003-2005. \$152,731.**

**Community Structure and Detrital Dynamics in *Zostera marina* and *Ruppia maritima* Beds in Barnegat Bay; Implications for Essential Fish Habitat. New Jersey SeaGrant, 2002-2003. \$7,000. Co-PI with L. Wootton, Georgian Court College.**

**Submerged Aquatic Vegetation Restoration as a Technique for Increasing Water Quality and Reducing NPS Pollution. New Jersey Department of Environmental Protection (EPA Section 319H), 2001-2003. \$156,249.**

**Assessment of Eelgrass, *Zostera marina*, Health and Biomass in Relationship to the Occurrence and Intensity of Brown-tide Events in Barnegat Bay, New Jersey. New Jersey SeaGrant, 2001-2002. \$5,000.**

**Eelgrass, *Zostera marina*, Restoration in Little Egg Harbor, New Jersey. Fish America Foundation and National Oceanographic and Atmospheric Administration Restoration Center, 2000-2001. \$9,316.**

**Assessing Bay Scallop (*Argopecten irradians*) Population Structure and Reproduction: Potential for Stock Enhancement in Barnegat Bay, NJ. New Jersey SeaGrant, 2000. \$5,000.**

### **Supplemental Research Activities:**

My current research addresses eelgrass (*Zostera marina*) ecology. Several of my research objectives regard habitat structural complexity and its impacts on associated fauna. Specifically, I am assessing edge effects in *Zostera* communities by determining whether differences in plant structural complexity lead to changes in faunal abundance and secondary production at edges, compared to interior portions of beds. Additionally, I am studying large-scale distribution and biomass patterns of submerged aquatic vegetation in Barnegat Bay, New Jersey, monitoring the health of existing beds, and identifying areas for future restoration. A secondary research program involves assessment of tropical marine communities associated with the United State Virgin Islands.

### **Past Professional Experience**

**Scientific Advising Consultant**, Birdsall Engineering, Inc. 2000-2007.  
Marine science, eelgrass ecology and habitat restoration.

**Post-Doctoral Researcher**, Institute of Marine and Coastal Sciences, Rutgers University, 1998-2000.  
Assessment of eelgrass, *Zostera marina*, ecology and plant-animal interactions.

**Weeks Bay National Estuarine Research Reserve Management Plan Project Coordinator**, South Alabama Regional Planning Commission, 1997.  
Compiling information and drafting the five-year Management Plan for the Weeks Bay National Estuarine Research Reserve.

**Barber Research Fellow**, University of South Alabama, 1996-1997.  
Research assessing the influence of seagrass patch shape and size on faunal communities. Spatial and temporal distributions of molluscs among seagrass habitats.

**Research Fellow**, University of South Alabama, 1995-1996.  
Research on the influence of seagrass habitat architecture on faunal communities and within habitat variability in seagrass biomass.

**Research Fellow**, Marine Environmental Sciences Consortium, 1992-1995.  
Research regarding the trophic and structural aspects of seagrasses in organizing faunal communities. Growth, predation and reproduction of bay scallops.

**Research Assistant**, Departments of Oceanography and Plant Biology and Pathology, University of Maine, 1991-1992.  
Ecology of the American lobster. Statistical assessment on the influences of physical factors on growth and survival of the rock weed, *Ascophyllum nodosum*, associated with thermal pollution.

**Wildlife Biologist, GS-5 and Volunteer**, United States Fish and Wildlife Service, Kodiak National Wildlife Refuge, Kodiak, Alaska 1989.  
Marine mammal and bird surveys. Sampled and documented beaches affected by petroleum from the Exxon Valdez Oil Spill. Identified, inventoried, and prepared for evidence birds and mammals impacted by the spill. Radio-telemetry and natural history of Sitka Black-tailed deer.

## Peer Reviewed Articles

- Campanella, J., **Bologna, P.**, Smith, S., Rosenzweig, E., and Smalley, J. accepted. *Zostera marina* population genetics in Barnegat Bay, New Jersey and implications for grass bed restoration. *Pop. Ecol.*
- Bologna, P.** Papagian, R., Regetz S., and Dale, C. 2008. Assessment of turtle grass (*Thalassia testudinum* ex Banks Konig) community structure in a UNESCO Biosphere Reserve. *J. Exp. Mar. Biol. Ecol.* 365:148-155.
- Kontos, C. and **Bologna, P.** 2008. Recent evidence and historical records of fisher (*Martes pennanti*) in New Jersey. *Bull. NJ Acad. Sci.* in press.
- Kontos, C. and **Bologna, P.** 2008. Assessment of fish and decapod use of mangrove and seagrass habitats in St. John, U.S.V.I. *Bull. NJ Acad. Sci.* 52: 7-11.
- Campanella, J.J., **Bologna, P.**, Kim, L., and Smalley, J. 2007. Molecular genetic evidence suggests Long Island as the geographic origin for the present population of bay scallops in Barnegat Bay, New Jersey. *J. Shellfish Res.* 26: 303–306.
- Bologna, P.**, Gibbons-Ohr, S. and Downes-Gastrich, M. 2007. Recovery of eelgrass (*Zostera marina*) after a major disturbance event in Barnegat Bay, New Jersey, USA. *Bull. N.J. Acad. Sci.* 52:1-7.
- Townsend, T., **Bologna, P.** 2007. Use of *Diadema antillarum* spines by juvenile fish and mysid shrimp. *Gulf Carib. Res.* 19: 55-58
- Bologna, P.** 2007. Top down effects in a seagrass community: evidence of a trophic cascade from a *Zostera marina* community. *Aquatic Ecology.* 41: 221-229.
- Kim, L., Campanella, J. and **Bologna, P.** 2006. Utilization of sea scallop (*Placopecten magellanicus* Gmelin) microsatellite markers for phylogenetic applications in bay scallops (*Argopecten irradians* Lamarck). *Rev. Undergrad. Res. Ag. Life Sciences.* (on-line)
- Bologna, P.** and Sinnema, M. 2006. Assessing the Success of Eelgrass Restoration in New Jersey. In. *Seagrass Restoration: Success, Failure and the Costs of Both* (S. Treat and R. Lewis eds.). pp. 79-90. Lewis Environmental Services, INC. Valrico, FL USA.
- Bologna, P.** 2006. Assessing within habitat variability in plant demography, faunal density, and secondary production in an eelgrass (*Zostera marina*) bed. *J. Exp. Mar. Biol. Ecol.* 329: 122-134.
- Bologna, P.**, Fetzer, M., Moody, E. and McDonnell, S, 2005. Assessing the potential benthic-pelagic coupling in episodic blue mussel (*Mytilus edulis*) settlement events within eelgrass (*Zostera marina*) communities. *J. Exp. Mar. Biol. Ecol.* 316: 117-131.
- Bologna, P.** and Heck, K. 2002. Impact of habitat edges on density and production of seagrass associated fauna. *Estuaries.* 25:1033-1044.
- Bologna, P.** and Haywick, D. 2002. Assessment of seagrass plant demography within and among beds of *Thalassia testudinum*, *Syringodium filiforme*, and *Halodule wrightii* from the northern Gulf of Mexico. *Gulf Mex. Sci.* 20: 135-150.
- Bologna, P.** 2002. Growth of juvenile winter flounder (*Pseudopleuronectes americanus*) among eelgrass (*Zostera marina*) habitats in Little Egg Harbor, New Jersey. *Bull. NJ Acad. Sci.* 47:7-12.
- Bologna, P.**, Wilbur, A. and Able, K. 2001. Reproduction, population structure, and recruitment failure in a bay scallop (*Argopecten irradians*) population from coastal New Jersey, USA. *J. Shellfish Res.* 20: 89-96.
- Bologna, P.** and Heck, K. 2000. Impacts of seagrass habitat architecture on bivalve settlement. *Estuaries.* 23: 449-457.
- Bologna, P.** and Heck, K. 2000. Relationship between pea crab (*Pinnotheres maculatus*) parasitism and gonadal mass of the bay scallop (*Argopecten irradians*). *Gulf Carib. Res.* 12: 39-42.
- Bologna, P.** and Heck, K. 1999. Macrofaunal associations with seagrass epiphytes: relative importance of trophic and structural characteristics. *J. Exp. Mar. Biol. Ecol.* 242: 21-39.
- Bologna, P.** and Heck, K. 1999. Differential predation and growth rates of bay scallops within seagrass habitat. *J. Exp. Mar. Biol. Ecol.* 239: 299-314.
- Bologna, P.** 1998. Growth, production, and reproduction in bay scallops *Argopecten irradians concentricus* (Say) from the northern Gulf of Mexico. *J. Shellfish. Res.* 17: 911-917.
- Bologna, P.** and Steneck, R. 1993. Kelp beds as habitat for American lobster *Homarus americanus*. *Mar. Ecol. Prog. Ser.* 100: 127-134.

## Published Abstracts \*Student Author

- Kontos, C.\*, **Bologna, P.** 2008. Mammalian survey and reappearance of the fisher (*Martes pennanti*) in New Jersey. Bull. NJ Acad. Sci. 53: 19.
- Walsh, M. \*, Fiordalisi, J. \*, Terringo, A. \*, Shanahan, D. \*, Girdley, S. \*, Langer, C. \*, **Bologna, P.** 2008 The effects of time and habitat on the distribution of fish and decapod species in three coastal habitats in St. Johns, U.S.V.I. . Bull. NJ Acad. Sci. 53: 16.
- Brummer-Jecko, J.\*, Astorga, K. \*, Calip, W. \*, Noyes, N. \*, Shabunia, L. \*, Szewczyk, M. \*, **Bologna, P.** .2008 A study of seagrass density, diversity, and consumption in St. John, U.S. Virgin Islands. Bull. NJ Acad. Sci. 53: 11.
- Jankovic, S. \*, Luckhardt, J. \*, Cassidy, K. \*, **Bologna, P.** 2008 Assessing the distribution of sea urchins and the utilization of sea urchins as biogenic habitats for fish and invertebrates. . Bull. NJ Acad. Sci. 53: 15.
- Langner, C. \*, Brummer-Jecko, J. \*, **Bologna, P.** 2008 Assessing plant diversity utilizing underwater digital photography in Great Lameshur Bay, U.S.V.I. . Bull. NJ Acad. Sci. 53: 10.
- Messina, M. \*, Edrolin, A. \*, Morel, R. \*, Nicholas, J. \*, Poposki, M. \*, **Bologna, P.** 2008 Habitat utilization by fish and decapods of exposed and protected mangroves and seagrass beds in St. John, USVI. Bull. NJ Acad. Sci. 53: 10.
- Ortega, S. \*, Tonuzi, Y. \*, Stout, D. \*, Suleski, A. \*, Meleas, G. \*, **Bologna, P.** 2008 *Diadema antillarum* study at St. John's, United States Virgin Islands, , Bull. NJ Acad. Sci. 53: 15.
- Smith, S.\*, Rosenzweig, E.\*, Campanella, J., **Bologna, P.**, Smalley, J. 2007. *Zostera marina* (eelgrass) population genetics in Barnegat Bay, New Jersey and implications for grass bed restoration. Bull. NJ Acad. Sci. 52: 8.
- Kontos, C.\*, Ward, D.\*, **Bologna, P.** 2006. Assessment of Fish & Invertebrate Abundance in Mangrove and Seagrass Habitats in St. John's, U.S. Virgin Islands (USVI). Bull. NJ Acad. Sci. 51: 9
- Papagian, R. \*, Regetz, S.\*, Dale, C.\*, Townsend, T.\*, Ward, D.\*, Kontos, C\*, Rudorfer, E.\*, Gizas M.\*, **Bologna, P.** 2006 A Comparative Study of Seagrass (*Thalassia testudinum*) and Mangrove (*Rhizophora mangle*) Community Structure In St. John, USVI. Bull. NJ Acad. Sci. 51: 9
- Townsend, T\*, Papagian, R.\*, Ward, D.\*, Kontos, C.\*, Dale, C.\*, Regetz, S.\*, **Bologna, P.** 2006 An assessment of the relationship of *Diadema antillarum* and juvenile coral reef fishes. Bull. NJ Acad. Sci. 51: 10
- Campanella, J., Kim, L.\*, **Bologna, P.** 2006 Molecular evidence suggests a long island origin for the present population of bay scallops in Barnegat Bay. Bull. NJ Acad. Sci. 51: 12
- Dale, C\*, Regetz, S. \*, Papagian, R. \*, Ward, D. \*, Townsend, T. \*, **Bologna, P.** 2006 Sediment size structure and organic carbon content of *Rhizophora mangle* and *Thalassia testudinum* beds, in St. John, United States Virgin Islands. Bull. NJ Acad. Sci. 51: 15
- Muro, D.\*, DeAndrade, R.\*, Regetz, S.\*, Papagian, R.\*, Clark, J.\*, **Bologna, P.** 2006 Effects of various macroalgal loading on plant and animal inhabitants of eelgrass *Zostera marina*. Bull. NJ Acad. Sci. 51: 14
- Bologna, P.**, Luckhardt, K\*, Misuik, J. 2005. Recovery of eelgrass (*Zostera marina*) after a major disturbance event in Barnegat Bay, New Jersey, USA. Bull. NJ Acad. Sci. 50: 20 [Luckhardt, Student]
- Rella, C. \* Wootton, L., and **Bologna, P.** 2005. Determination of genetic differences between seagrasses growing in pristine versus eutrophied portions of Barnegat Bay. Bull. NJ Acad. Sci. 50: 20 [Rella, Student]
- Wolek, B., **Bologna, P.**, and Sinnema, M. 2004. Assessment of eelgrass (*Zostera marina*) restoration in Barnegat Bay, New Jersey. Bull. NJ Acad. Sci. 49: 40. [Wolek: Student]
- Gibbons, S. and **Bologna, P.** 2003. Recovery of eelgrass (*Zostera marina*) after a major decline event in Little Egg Harbor, New Jersey. Bull. NJ Acad. Sci. 48: 22. [Gibbons: Student]
- Maio, D. and **Bologna, P.** 2003. The potential effects of boating on widgeon grass (*Ruppia maritima*). Bull. NJ Acad. Sci. 48: 22. [Miao: Student]
- Bologna, P.**, Fetzer, M., McDonnel, S. and Moody, E. 2002. Assessment of blue mussel recruitment and population dynamics in a coastal New Jersey estuary. Bull. NJ Acad. Sci. 47: 13. [Fetzer, McDonnel, and Moody: Students]

## Non-Peer Reviewed Publications

- Bologna, P.** 2006. Assessment of seagrass and mangrove community structure: Comparison among undisturbed, hurricane impacted, and potential anthropogenically impacted systems. National Park Service Project Report. 52p.
- Bologna, P.** and Sinnema, M. 2005. Submerged Aquatic Vegetation Restoration as a Technique for Increasing Water Quality and Reducing NPS Pollution. Project Final Report. New Jersey Department of Environmental Protection. 15p. with 4 supporting Appendices.
- Sinnema, M. and **Bologna, P.** 2005. Year 2 Seagrass Monitoring Report: Submarine Cable Route Bonnet Island. Birdsall Engineering, Inc. Prepared for Conectiv Power Delivery, Pleasantville Operation. 16p with 13 supporting Appendices
- Sinnema, M. and **Bologna, P.** 2004. Pre-, Post-Repair, and Year 1 Seagrass Monitoring Report Submarine Cable Route Bonnet Island. Birdsall Engineering, Inc. Prepared for Conectiv Power Delivery, Pleasantville Operation. 17p. with 16 supporting Appendices.
- Wootton, L. and **Bologna, P.** 2004. Community Structure and Detrital Dynamics in *Zostera marina* and *Ruppia maritima* Beds in Barnegat Bay; Implications for Essential Fish Habitat. Project Final Report. New Jersey Sea Grant. 13p.
- Able, K. W. and **Bologna, P.** 2003. Measures of fish recruitment relationships in the Jacques Cousteau National Estuarine Research Reserve at Mullica River-Great Bay: a Preliminary Analysis. Technical Report #100-21. Institute of Marine and Coastal Sciences, Rutgers University. 37 p.
- Bologna, P.** 2003. Assessment of Eelgrass, *Zostera marina*, Recovery after a Die-Off in Little Egg Harbor, New Jersey. Project Final Report. New Jersey Sea Grant. 6p.
- Bologna, P.**, Lathrop, R., Bowers, P., and Able, K. 2000. Assessment of the health and distribution of Submerged Aquatic Vegetation from Little Egg Harbor, New Jersey. Technical Report 2000-11. Institute of Marine and Coastal Sciences, Rutgers University. 30 p.
- Able, K. W., Bush, R., and **Bologna, P.** 1999. Aspects of the distribution and life history for selected species in Delaware Bay. Appendix G, Exhibit G-3-17. PSE&G Compliance Document.
- Bologna, P.** 1998. Meadowlands Mills Avian Survey Report: Empire Tract, Hackensack Meadowlands, NJ. TAMS INC. Consulting Report. 40p.
- Bologna, P.** 1998. The role of seagrass habitat architecture on associated fauna. Ph.D. Dissertation, University of South Alabama. 225 p.
- Bologna, P.** 1992. Kelp beds as habitat for American lobster *Homarus americanus*. M.S. Thesis, University of Maine. 34 p.

## Publications in Review – Manuscripts in Preparation

- Bologna, P.** and Sinnema, M. in review. Restoration of seagrass habitat in New Jersey, USA. Restor. Ecol.
- Campanella, J., **Bologna, P.**, Smith, S., Rosenzweig, E., and Smalley, J. in review. Population structure of *Zostera marina* on the Western Atlantic Coast suggests low levels of genetic diversity. J. Herid.
- Bologna, P.** and Heck, K. in prep. The effects of seagrass patch shape and size on epifaunal colonization.
- Bologna, P.** and Downes-Gastrich, M. in prep. Impacts of Brown tide on health and biomass of eelgrass (*Zostera marina* L.) in New Jersey.

## Supplemental Education

Faculty Institute for Reforming Science Teaching 2003, 2004, 2005, National Science Foundation Lake Management 2001, Rutgers University Continuing Professional Education Aquaculture Technology 1994, University of Maine

SCUBA Diving 1989, University of Maine. > 300 dives, Nitrox certified 1991, National Oceanographic and Atmospheric Administration / National Undersea Research Center

**Member:**

Estuarine Research Federation  
Atlantic Estuarine Research Society  
National Shellfisheries Association  
New Jersey Academy of Sciences  
New Jersey Marine Educators Association  
Barnegat Bay Estuary Program, Science and Technical Advisory Committee

**Reviewer:**

National Science Foundation  
Marine Ecology Progress Series  
Marine Biology  
Restoration Ecology  
Marine and Freshwater Research  
Landscape Ecology  
Journal of Shellfish Research  
Estuarine and Coastal Shelf Science  
Gulf of Mexico Science  
New Jersey Bulletin of the Academy of Sciences  
Maine SeaGrant Program  
NOAA National Undersea Research Program  
United States Army Corp of Engineers

**Public Service:**

New Jersey Academy of Sciences, President Elect  
Barnegat Bay Estuary Program, Science and Technical Advisory Committee  
Watershed Management Area 4, Technical Advisory Committee

**Honors and Awards:**

Faculty Scholarship Incentive Program, Montclair State University, 2004 - Present  
New Jersey Sea Grant Program Grant 2006 (\$77,662)  
Environmental Protection Agency Grant 2006 (\$46,668)  
Barnegat Bay Estuary Program Grant 2005 (\$26,268)  
Career Development Program Montclair State University, 2004  
Grant Proposal Development Program, Montclair State University, 2004, 2005  
New Jersey Department of Environmental Protection, EPA 319H, 2003 (\$155,000)  
New Jersey Department of Environmental Protection, Environmental Excellent Award 2002, Healthy Ecosystems  
New Jersey SeaGrant Development Grant 2002 (\$7,000)  
FDU Faculty Research Release, Fall 2001 (6 contact hours)  
New Jersey Department of Environmental Protection, EPA 319H, 2001 (\$156,249)  
New Jersey SeaGrant Development Grant 2001 (\$5,000)  
Fish America Foundation/NOAA Restoration Center 2000 (\$9316)  
New Jersey SeaGrant Development Grant 2000 (\$5,000)  
Barnegat Bay Estuary Program 1999 (\$5,000)  
South Alabama Regional Planning Commission Contract 1997 (\$15,000)  
Barber Research Fellowship 1996 (\$6,000)  
Conchologists of America Research Grant 1996 (\$700)

Society of Wetland Scientists Research Grant 1995 (\$500)  
Estuarine Research Federation 1995 Student Travel Award 1995  
Mississippi-Alabama Sea Grant Research Grant 1994/95 (\$6,000)  
Lerner-Gray Fellowship for Marine Science 1994  
Gulf of Maine Foundation Fellowship 1994  
Marine Environmental Sciences Consortium Research Fellowship 1992-1996  
Northeast Algal Symposium Student Paper Award 1992  
University of Maine Graduate Student Research Grant 1990-92

## **Professional Presentations:**

**Invited Lectures and Presentations:** National Science Foundation, National Shellfisheries Association, Cape Cod Cooperative Extension WHOI Sea Grant Program, Estuarine Research Federation Meetings, Hudson River Foundation, Barnegat Bay Estuary Program, Stockton University, University of Pennsylvania, University of Maine, University of South Carolina, Georgian Court College, Essex County College, Maine Maritime Academy, Montclair State University, Fairleigh Dickinson University, Essex County Community College, Jacques Cousteau National Estuary Research Reserve, Waquoit Bay National Estuarine Research Reserve, Cape May Jersey Shell Club.

**Meeting Presentations:** Benthic Ecology Meetings, Estuarine Research Federation Meetings, Submerged Aquatic Habitat Restoration in Estuaries, Northeast Shore and Beach Preservation Association, National Estuarine Research Reserve Meetings, New Jersey Academy of Sciences, Sandy Hook Association for Research and Education, Atlantic Estuarine Research Society Meetings, Flatfish Biology Conference, American Malacological Union Meetings, University of South Alabama Research Forum, Northeast Algal Symposium.

## **Presentation Titles and Dates**

- 2009 Biodiversity in an UNESCO Biosphere Reserve, St. John's, USVI. International Marine Conservation Conference.
- 2009 Loss of mangrove leads to hyper-utilization of seagrasses by juvenile reef fish. 38<sup>th</sup> Annual Benthic Ecology Meetings.
- 2008 Population structure and demise of bay scallops (*Argopecten irradians*) in New Jersey. National Shellfisheries Association Meeting.
- 2008 Assessment of invasive plants along the upper Passaic River. Susan Jankovic, Paul Bologna. 53rd Annual New Jersey Academy of Sciences Meeting.
- 2008 The effects of time and habitat on the distribution of fish and decapod species in three coastal habitats in St. Johns, U.S.V.I. Meghan Walsh, Jaclyn Fiordalisi, Anthony Terringo, Daniel Shanahan, Sharon Girdley, Chris Langer, Paul Bologna. 53rd Annual New Jersey Academy of Sciences Meeting.
- 2008 A study of seagrass density, diversity, and consumption in St. John, U.S. Virgin Islands. Kelly Astorga, Judy Brummer-Jecko, Winsley Calip, Nancy Noyes, Lauren Shabunia, Monica Szewczyk, Paul Bologna. 53rd Annual New Jersey Academy of Sciences Meeting.
- 2008 Assessing the distribution of sea urchins and the utilization of sea urchins as biogenic habitats for fish and invertebrates. Susan Jankovic, Jami Luckhardt, Kathleen Cassidy, Paul Bologna. 53rd Annual New Jersey Academy of Sciences Meeting.
- 2008 Assessing plant diversity utilizing underwater digital photography in Great Lameshur Bay, U.S.V.I. Christopher Langner, Judy Brummer-Jecko, Paul Bologna. 53rd Annual New Jersey Academy of Sciences Meeting.
- 2008 Habitat utilization by fish and decapods of exposed and protected mangroves and seagrass beds in St. John, USVI. Michael Messina, Aiko Edrolin, Rodolfo Morel, Jennifer Nicholas, Marjan Poposki, Paul Bologna. 53rd Annual New Jersey Academy of Sciences Meeting.

- 2008 *Diadema antillarum* study at St. John's, United States Virgin Islands, Sandra Ortega, Yllton Tonuzi, David Stout, AJ Suleski, George Meleas, Paul Bologna, 53rd Annual New Jersey Academy of Sciences Meeting.
- 2008 Eelgrass community structure in New Jersey: does episodic recruitment of blue mussels dictate system structure? Benthic Ecology Meeting.
- 2008 Habitat utilization by fish and decapods of exposed and protected mangroves and seagrass beds in St. John, USVI. Michael Messina, Aiko Edrolin, Rodolfo Morel, Jennifer Nicholas, Marjan Poposki, Paul Bologna. Benthic Ecology Meeting.
- 2008 Assessing the distribution of sea urchins and the utilization of sea urchins as biogenic habitats for fish and invertebrates. Susan Jankovic, Jami Luckhardt, Kathleen Cassidy, Paul Bologna. Benthic Ecology Meeting.
- 2007 Assessment of Eelgrass (*Zostera marina*) Community Structure in New Jersey, 1998-2006. Estuarine Research Federation Meeting.
- 2007 Seagrass Loss, Recovery, and Restoration in New Jersey. Hudson River Foundation
- 2006 Assessment of Fish & Invertebrate Abundance in Mangrove and Seagrass Habitats in St. John's, U.S. Virgin Islands (USVI). Charles Kontos, Daniel Ward, Paul Bologna. 51<sup>st</sup> Annual New Jersey Academy of Sciences Meeting
- 2006 A Comparative Study of Seagrass (*Thalassia testudinum*) and Mangrove (*Rhizophora mangle*) Community Structure in St. John, USVI. Rita Papagian (student), Suzann Regetz, Cathleen Dale, Taryn Townsend, Daniel Ward, Charles Kontos, Erik Rudorfer, Marie Gizas, Paul Bologna. 51<sup>st</sup> Annual New Jersey Academy of Sciences Meeting
- 2006 An assessment of the relationship of *Diadema antillarum* and juvenile coral reef fishes. Taryn Townsend, Rita Papagian, Daniel Ward, Charles Kontos, Cathleen Dale, Suzann Regetz, Paul Bologna. 51<sup>st</sup> Annual New Jersey Academy of Sciences Meeting
- 2006 Molecular evidence suggests a long island origin for the present population of bay scallops in Barnegat Bay. James. J. Campanella, Liliana E.J. Kim, Paul. A.X. Bologna. 51<sup>st</sup> Annual New Jersey Academy of Sciences Meeting
- 2006 Sediment size structure and organic carbon content of *Rhizophora mangle* and *Thalassia testudinum* beds, in St. John, United States Virgin Islands. Cathleen Dale, Suzann Regetz, Rita Papagian, Daniel Ward, Taryn Townsend, Paul Bologna. 51<sup>st</sup> Annual New Jersey Academy of Sciences Meeting
- 2006 Effects of various macroalgal loading on plant and animal inhabitants of eelgrass *Zostera marina*. Dennis Muro, Roberta DeAndrade, Suzann Regetz, Rita Papagian, John Clark. Paul Bologna. 51<sup>st</sup> Annual New Jersey Academy of Sciences Meeting
- 2005 Seagrass Loss, Recovery, and Restoration in New Jersey. Estuarine Research Federation Meetings.
- 2005 Using Active Learning and Assessment for New Program Development. Faculty Institute to Reform Science Teaching, National Science Foundation
- 2005 Recovery of eelgrass (*Zostera marina*) after a major disturbance event in Barnegat Bay, New Jersey, USA. Paul Bologna, Kera Luckhardt, Jeff Misuik, 50<sup>th</sup> Annual New Jersey Academy of Sciences Meeting
- 2005 Recovery of eelgrass (*Zostera marina*) after a major disturbance event in Barnegat Bay, New Jersey, USA. 34<sup>th</sup> Marine Benthic Ecology Meetings
- 2005 Assessment of eelgrass (*Zostera marina*) restoration in Barnegat Bay, New Jersey, P. Bologna, M. Sinnema, 34<sup>th</sup> Marine Benthic Ecology Meetings.
- 2005 Ecology and Restoration of New Jersey Seagrass Habitats. Essex County Community College
- 2004 Ecology and Restoration of New Jersey Seagrass Habitats. Barnegat Bay Estuary Program
- 2004 Assessment of eelgrass (*Zostera marina*) restoration in Barnegat Bay, New Jersey, P. Bologna, M. Sinnema. Atlantic Estuarine Research Society Meetings.
- 2004 Assessment of widgeon grass (*Ruppia maritima*) community structure in Barnegat Bay, New Jersey. J. Misuik, K. Luckhardt, P. Bologna. Atlantic Estuarine Research Society Meetings.
- 2004 Ecological Processes in New Jersey Seagrass Habitats. Department of Biology and Molecular Biology, Montclair State University
- 2004 Assessing the potential Benthic-Pelagic coupling in an episodic blue mussel (*Mytilus edulis*) settlement event in an eelgrass (*Zostera marina*) community. 33<sup>rd</sup> Marine Benthic Ecology Meeting.

- 2004 Assessment of eelgrass (*Zostera marina*) restoration in Barnegat Bay, New Jersey. B. Wolek, P. Bologna, M. Sinnema. 49<sup>th</sup> Annual New Jersey Academy of Sciences Meeting.
- 2003 Progress in terrestrial canopy reflectance modeling and potential applications to the mapping of seagrass off the New Jersey coast. Geographic Information Systems and Remote Sensing Workshop. Sandy Hook Association for Research and Education. M. Chopping and P. Bologna
- 2003 Recovery of eelgrass (*Zostera marina*) after a major decline event in Little Egg Harbor, New Jersey. S. Gibbons and P. Bologna. 48<sup>th</sup> Annual New Jersey Academy of Sciences Meeting.
- 2003 The potential effects of boating on widgeon grass (*Ruppia maritima*). D. Maio, D. and P. Bologna. 48<sup>th</sup> Annual New Jersey Academy of Sciences Meeting.
- 2003 Ecological Processes in New Jersey Seagrass Habitats. East Stroudsburg State University
- 2003 Ecological Processes in New Jersey Seagrass Habitats. Fairleigh Dickinson University
- 2003 Ecological Processes in New Jersey Seagrass Habitats. Montclair State University
- 2003 Assessing the Success of Eelgrass Restoration in New Jersey. P. Bologna and M. Sinnema. Submerged Aquatic Habitat Restoration in Estuaries: Issues, Options, and Priorities Workshop. Mote Marine Laboratory.
- 2002 Assessment of Seagrass Restoration Techniques in Coastal New Jersey. P. Bologna, M. Sinnema, and J. Wuestneck. Atlantic Estuarine Research Society Meetings.
- 2002 Assessing the Relationships Between Seagrasses and Bay Scallops. Cape Cod Cooperative Extension WHOI Sea Grant Program Seagrass Restoration Workshop.
- 2002 Seasonal Assessment of SAV in Barnegat Bay, New Jersey. SAV Workshop, JCNERR.
- 2002 Assessment of blue mussel recruitment and population dynamics in a coastal New Jersey estuary. Bologna, P., Fetzer, M., McDonnell, S, and Moody, E. New Jersey Academy of Sciences Annual Meeting
- 2001 Seagrass Habitat Restoration in New Jersey Estuaries. P. Bologna, M. Sinnema. Revitalizations of Urban Shorelines Conference, 4<sup>th</sup> Annual Conferences of the Northeast Shore and Beach Preservation Association.
- 2001 Assessment of Seagrass Restoration Techniques in Coastal New Jersey. P. Bologna, M. Sinnema, and J. Wuestneck. Estuarine Research Federation Meetings.
- 2001 Assessment and Monitoring of SAV in Barnegat Bay, New Jersey. Barnegat Bay Estuary Program Monitoring Workshop.
- 2001 Reproduction, population structure, and recruitment limitation in a bay scallop (*Argopecten irradians* Lamarck) population from coastal New Jersey, USA. P. Bologna, A. Wilbur, K. Able. Benthic Ecology Meetings.
- 2000 Top-down effects: Evidence of a trophic cascade in a *Zostera marina* habitat. P. Bologna and K. Able. Benthic Ecology Meetings.
- 1999 Assessing edge effects in seagrass communities. P. Bologna, K. Heck, and K. Able. Estuarine Research Federation Meetings.
- 1999 Decline of eelgrass (*Zostera marina*) in Little Egg Harbor, New Jersey on two temporal and spatial scales. P. Bologna, K. Able, and R. Lathrop. Benthic Ecology Meetings.
- 1998 Growth of young-of-the-year *Pseudopleuronectes americanus* within eelgrass, *Zostera marina*: Impact of habitat edge. Bologna, P. and K. Able. Flatfish Biology Conference.
- 1998 Impacts of seagrass habitat architecture on associated faunal communities. Pennsylvania University, Department of Ecology and Evolution, Invited Seminar.
- 1998 Edge Effects in a Seagrass Community. Benthic Ecology Meetings.
- 1998 Grain size analysis in sedimentary geology. Haywick, D., A. Feltman, M. Grace, A. Fisher, and P. Bologna. University of South Alabama Research Forum.
- 1997 The role of seagrass patch shape and size on associated fauna. Benthic Ecology Meetings.
- 1997 Sub-Tropical Seagrass Ecosystems. University of Maine, Department of Plant Sciences, Invited Lecture.
- 1996 Effects of seagrass habitat architecture on bivalve recruitment. American Malacological Union Meetings.
- 1996 Biological and physical factors affecting bivalve recruitment in seagrass habitats. University of South Alabama Research Forum.
- 1996 The relative role of epiphytes as food and structure on seagrass associated fauna. Benthic Ecology Meetings.
- 1995 The relative role of epiphytes on bivalve recruitment. Estuarine Research Federation Meetings.

1995 Scallop growth and production among seagrass species. Benthic Ecology Meetings.  
 1995 Effects of Tropical Storm Alberto on scallop growth and production. University of South Alabama Research Forum.  
 1994 Growth and survivorship of bay scallops. University of South Alabama Research Forum.  
 1994 Scallops and Seagrasses: Life on the Edge. Benthic Ecology Meetings.  
 1992 Kelp beds as habitat for benthic communities. Northeast Algal Symposium.  
 1992 Does kelp bed size influence local lobster density? Benthic Ecology Meetings.  
 1991 Kelp as biogenic habitat for the American lobster, *Homarus americanus*. Benthic Ecology Meetings.

## Courses Taught

### Montclair State University

AQUA 199 Freshman Seminar in Aquatic and Coastal Science, Fall 2006  
 BIOL 100 Biological Sciences, Fall 2003, Fall 2004  
 BIOL 113 Principals of Biology II, Fall 2003, Spring 2005, Spring 2006  
 BIOL 199 Freshman Seminar in Biology, Fall 2005  
 BIMS 220 Marine Biology, Spring 2004, Spring 2007, Spring 2008  
 BIOL 300 Environmental Biology and Controversial Issues, Spring 2004, 2005, Fall 2006, Su 2008  
 AQUA 351 Aquatic Biological Processes, Fall 2008  
 BIOL 418 Independent Undergraduate Research, Spring 2004, Summer 2004, Fall 2004, Spring 2006  
 BIOL 484 Research Community I, Fall 2005, 2007  
 BIOL 485 Research Community II, Spring 2006, 2008  
 BIOL 490 Senior Seminar, Spring 2004, Fall 2005  
 AQUA 551 Advanced Aquatic Biological Processes, Spring 2007  
 BIOL 570 Ecology, Fall 2006, 2008  
 BIOL 573 Shoreline Ecology, Fall 2004  
 BIOL 599 Independent Graduate Research, Summer 2004, Fall 2004, Spring 2005

### Fairleigh Dickinson University

Environmental Biology, Fall 2000, Spring 2001, 2003  
 Hawaiian Seminar, Spring 2001, 2002  
 Ecology, Spring 2001, 2002  
 Marine Biology Fall 2000, 2001, 2002  
 \*Seminar in Professional Development, Fall 2001, 2002  
 \*Higher Marine Vertebrates, Spring 2002  
 \*Temperate Marine Science, Spring 2003  
 \*Tropical Marine Science, Spring 2002, Fall 2003  
 \*Aquatic Botany, Fall 2002  
 \* Denotes New Courses Developed

### Courses at Other Institutions and Programs

Marine Biology, Biology Department, Rutgers University, Camden, 1999  
 Eelgrass Ecology, Marine Activities Resources and Education Program, Institute of Marine and Coastal Sciences, Rutgers University, 1998, 1999, 2000  
 Eelgrass Ecology, National Ocean Partnership Program, Institute of Marine and Coastal Sciences, Rutgers University, 1998  
 Macrophyte Ecology, Department of Oceanography, Maine Maritime Academy, 1997  
 Marine Ecology Laboratory, Dauphin Island Sea Lab, 1993  
 Field Marine Science Laboratory, Dauphin Island Sea Lab, 1992  
 Phycology Laboratory, Department of Plant Biology, University of Maine, 1992  
 Marine Ecology Laboratory, Oceanography Department, University of Maine, 1991  
 Introductory Biology Laboratory, Department of Plant Biology, University of Maine, 1989-90

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