

**Matthew P. Hoch, Ph.D., Chair**  
**Associate Professor of Biology**

Department of Biology  
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EDUCATION

*University of Delaware, College of Marine Science, Lewes, DE*

**Ph.D. in Marine Biology and Biochemistry** [1986-1991]

Dissertation: "Ammonium uptake and stable nitrogen isotope fractionation in Delaware Estuary" (supervisors: D.L. Kirchman (CMS-UDel) & M.L. Fogel (CIW Geophysical Lab))

*University of Colorado, Boulder, CO*

**B.A. in Environmental, Population and Organismal Biology with Distinctions** [1981-1985]

Undergraduate Research: Macroinvertebrate communities of the Niwot Ridge Watershed; supervisors J.H. Bushnell & R.W. Pennack (Univ. Colorado)

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ACADEMIC AWARDS

- 2006 Watershed Stewardship Award, York Ct Conservation District, York, PA. [2005-2006]
- NSF Biotechnology Fellowship in Ocean Sciences. [1995-1996]
- Pre-doctoral Fellowship at the Carnegie Institution of Washington, Geophysical Laboratory. [1995-1996]
- Paul Austin Marine Biochemistry Scholarship, University of Delaware, College of Marine Studies. [1989-1991]
- Tuition Scholarship for Marine Molecular Ecology, Marine Biological Laboratory, Woods Hole, MA. [1988]
- Phi Beta Kappa Honors Society [1985]
- Golden Key Honors Society [1985]

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TEACHING EXPERIENCE

[*Lamar University, Beaumont, TX*] [2008-present]

**Associate Professor of Biology**

"Graduate Seminar" (development and instruction of three subjects:  
*Coastal Ecosystem Impacts; Microbial Communities; Oil Spills*)

"Microbial Discovery" (collaborated in development and instruction)

"Environmental Microbiology" (development and instruction)

"Tropical Forest Ecology" (collaborated in development and instruction)

"Tropical Marine Biology" (collaborated in development and instruction)

"Microbiology" (developed, instructed, and prepared lab materials)

"General Biology I – Lab" (instructed)]

[*The Pennsylvania State University, York, PA*] [2002-2008]

**Assistant Professor of Biology**

"Lake and Stream Ecosystems" (development and instruction)

"Oceanography" (development and instruction)

"Environmental Science" (development and instruction)

"Microbial Diversity" (development and instruction)

"Population and Community Biology" (development and instruction)

"Tropical Biology" (development and instruction)

"Intro. Microbiology (majors)" (developed, instructed, & prepared lab materials)

"Elem. Microbiology (non-majors)" (developed, instructed, & prepared lab materials)]

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[*Vancouver Island University (formerly Malaspina University-College), Nanaimo, BC*] **[1996-2001]**  
**University-College Professor**

"Microbial Ecology" (development and instruction)  
"Tropical Biology in Belize" (collaborated in development and instruction)  
"Tropical Biology Directed Studies" (field research experiences)  
"Aquatic Ecosystem Fundamentals" (development and instruction)  
"Introductory Microbiology" (development and instruction)  
"Introductory Biochemistry" (development and instruction)  
"Non-Vascular Plants" (collaborated in development and instruction; mycology portion)  
"Advanced Microbiology" (development and instruction)  
"Terrestrial Ecosystems" (collaborated in development and instruction; soils portion)  
"Estuarine and Coastal Ecosystems" (collaborated in development and instruction)  
"Genetics" (laboratory instruction)  
"Ecology" (collaborated in instruction)  
"Introductory Botany" (laboratory instruction)]

[*University of Belize, Belmopan, BZ*] **[2001]**  
**Visiting Professor**

"Physical-Chemical Water Quality Assessment" (development and instruction)  
"Microbiological Water Quality Assessment" (development and instruction)

*University of Delaware, Lewes, DE* **[1990]**  
**Teaching Assistant** for Dr. Jon Sharp  
"Introduction to Ocean Science" (recitation and laboratory instruction)

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ACADEMIC ADMINISTRATIVE & RELATED HIGHER EDUCATION EXPERIENCE

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[*Lamar University, Beaumont, TX*] **[2008 – Present]**  
**Chair, Department of Biology**  
**Biology Graduate Program Director**  
Provide administrative support for department, supervise administrative associate and technical staff, schedule and budget responsibility, advise graduating seniors, faculty evaluation; recruit and advise MS graduate students; supervise graduate committee assignments.]

[*The Pennsylvania State University, York, PA*] **[2004 – 2008]**  
**Director, Codorus Creek Efficacy Program**  
Supervised undergraduate and graduate student employees and volunteers, organized partnerships with state agencies and community groups, developed and provided workshops on watershed assessment, developed and instructed middle school teacher-student workshops; provided outreach demonstrations at the local to state level.].

[*Vancouver Island University (formerly Malaspina University-College), Nanaimo, BC*] **[1999 - 2001]**  
**Chair, Department of Biology**  
Provide administrative support for department, supervise technical staff, schedule and budget responsibility, advise graduating seniors, evaluated faculty teaching.]

[*Vancouver Island University (formerly Malaspina University-College), Nanaimo, BC*] **[1997-2001]**  
**Director, Undergraduate Research Program**  
**Director, Tropical Biology Program**  
Coordinated student-advisor assignments, schedule and budget responsibility, orchestrated proposal and thesis presentation events; organized collaborative training programs with foreign institutions, orchestrated and participated in study abroad program, awarded and supervised foreign exchange fellowship program.]

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**Stable Isotope Biogeochemistry, Research Associate**

Liaison with Gulf Ecology Research Lab., U.S. EPA, Gulf Breeze, Florida. Grant writing and research on tracing the sources and fates of nutrients and organic matter in pelagic ecosystems of the Gulf of Mexico and Florida nearshore coastal waters. Supervision and mentoring of EPA Undergraduate Minority Research Fellow and TAMU research assistant.

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Research, Infrastructure, and Educational Outreach Grants:

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Nicoletto, P.F. , J. W. Armacost, M. Haiduk, M. P. Hoch. 2009. The recovery of the coastal ecosystem of Southern Jefferson County, Texas from the storm surge of Hurricane Ike. Coastal Management Program, NOAA. Proposed one year total **\$144,192.00**. Proposal was funded.

Department of Biology Partnership Projects of the Columbia Geospatial Center Grant to the Lamar University, Department of Earth and Space Sciences (PIs Drs. Jim Jordan and Joe Kruger). The \$800,000 grant provided about \$50,000 for two projects in the Department of Biology. About **\$20,000** for increasing geospatial coverage and mapping of post-hurricane Ike coastal ecosystem impacts to **Hoch** (data collected; mapping in progress).

Pennsylvania Department of Environmental Protection – Growing Greener Program - **\$140,000** (May 2007 – June 2009) *Codorus Creek Restoration Efficacy Program - Phase II*

Penn State York – Advisory Board Grant - **\$3,500** (June 2006 – May 2008) *Denaturing Gradient Gel Electrophoresis for Stream Periphyton Community Profiling.*

Penn State University - Infrastructure Grant - **\$220,464** (awarded June 2005; implementation pending; principal author with Drs. Karl Knapp and Bob Farrell as coauthors) *Renovation for Laboratory Preparation and Instruction in Anatomy, Physiology, and Biochemistry Courses at Penn State York.*

Pennsylvania Department of Environmental Protection – Growing Greener Program - **\$60,762** (October 2003 – June 2007) *Codorus Creek Restoration Efficacy Program (CCREP).*

York Foundation – Codorus Watershed Endowment - **\$5,500** (May 2004 - Aug 2004) *CCREP Student Outreach Project.*

York Water Company - **\$6,300** (PA-DEP grant matching funds for *CCREP*).

Penn State York – Advisory Board Grant - **\$1,000** (June 2002 – May 2004) *Biofilm community functions in agriculturally impaired cold-water streams of South-Central Pennsylvania.*

Penn State Commonwealth College – Research Development Grant - **\$ 1,700** (June 2003- May 2004) *Comparison of aquatic iron-oxidizing communities supported by leachate from wood-waste landfills.*

Canadian Foundation for Innovation & Science Council of British Columbia (co-PI with Dr. Erik Krogh and Chris Gill, Malaspina University-College) - **\$800,000** (Sept. 2000 – Aug. 2004): *Infrastructure and Instrumentation for an Applied Environmental Research Laboratory.*

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Canadian International Development Agency, Canadian College Partnership Program - **\$350,000** (Oct. 1997 - Sept. 2001): *Water Quality Assessment in Belize, Central America*.

Malaspina University-College, Bamfield Research Fellowship - **\$5,000** (April 1998 – March 1999): *The ecology of Vibrio parahaemolyticus in oyster growing areas of Georgia Strait, British Columbia*.

U.S. National Science Foundation - **\$90,000** (Nov. 1994 - Dec. 1995): *Molecular Genetics of Ammonium Assimilation in the Obligate Oligotrophic Marine Bacteria*.

U.S. Environmental Protection Agency - **\$100,000** (Sept. 1993 - Sept 1995): Tracing the Rates and Fates of Sewage Effluent Nitrogen from Southeast Florida Ocean Outfalls.

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#### SIGNIFICANT PROFESSIONAL PUBLICATIONS

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- Nicoletto, P.F., M. Haiduk, J. Armacost, and **M.P. Hoch**. 2010. The recovery of the coastal ecosystem of Southern Jefferson County, Texas, from the storm surge of Hurricane Ike. Prepared for TX GLO, CMP-#14. pp. 118.
  - **Hoch, M.P.**, C.Y.S. Siu, S.E. Clark, and K.H. Baker. 2009. Codorus Creek Restoration - A Case Study for the Chesapeake Bay. Proceedings of the World Environmental and Water Resources Congress 2009: Great Rivers, American Society of Civil Engineers. pp 1-7.
  - **Hoch, M.P.**. 2008. Enzymatic assessment of nitrogen and phosphorus bioavailability to stream periphyton communities at different velocity regimes. *J. Freshwater Ecol.* 23(3): 245-264.
  - **Hoch, M. P.**, K. S. Dillon, R. B. Coffin, and L. A. Cifuentes. 2008. Sensitivity of bacterioplankton nitrogen metabolism to eutrophication in sub-tropical coastal waters of Key West, Florida. *Mar. Poll. Bull.* 56(5): 913-926.
  - **Hoch, M.P.** 2007. Pre-restoration assessment of biological communities and water quality in reference and impaired reaches of Codorus Creek watershed. Final Project Report, Growing Greener #SC30462, Pennsylvania Department of Environmental Protection, Harrisburg, Pennsylvania, USA. 77 p.
  - **Hoch, M. P.** and D. A. Bronk. 2007. Bacterioplankton nutrient metabolism in the Eastern Tropical North Pacific. *J Exp. Mar. Biol. Ecol.* 439: 390-404.
  - **Hoch, M. P.**, R. A. Snyder, W. H. Jeffrey, K. S. Dillon, R. B. Coffin. 2006. Expression of glutamine synthetase and glutamate dehydrogenase by marine bacterioplankton: assay optimizations and efficacy for assessing nitrogen to carbon metabolic balance. *Limnol. Oceanogr. Methods* 4: 318-328
  - **Hoch, M. P.**, S. J. Patel, and J. J. Kong. 2006. Diversity of glutamine synthetase isozymes in the Sargasso Sea environmental genome. *John T. and Paige S. Smith Undergrad. Sci. Res. Symp. Proc.* 1:1-21.
  - Eaton, W.D., V. Palacio, E. vanZinderenBakker, and M.P. **Hoch**. 1999. Nutrient and microbial analysis of watersheds above and below the Mollejon Dam, Belize. *Mesoamerican Society for Conservation and Biology, Mesoamericana.* 4(4): 20-24.
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- Jørgensen, O.G.J., N. Kroer, R.B. Coffin, and M.P. **Hoch**. 1999. Relations between bacterial nitrogen metabolism and growth efficiency in an estuarine and an open-ocean ecosystem. *Aquat. Microb. Ecol.* 18:247-261.
  - **Hoch**, M.P., D. M. Goodman, C. Chypluk, M. Kurucz,. 1998. *Suillus caerulescence* (A.H. Smith and Thiers) + *Pseudotuga menziesii* (Mirb.) Franco, CDE19. *In: Concise Descriptions of North American Ectomycorrhizae. Edited by: D.M. Goodman, D.M. Durall, J.A. Trofymow, and S.M. Berch. Mycologue Publications, and Canada-B.C. Forest Resource Development Agreement, Canadian Forest Service, Victoria, B.C., pp CDE19.1-CDE19.4.*
  - Snyder, R.A. and M.P. **Hoch**. 1996. Consequences of protist-stimulated bacterial production for estimating protist growth efficiencies. *Hydrobiologia* 341: 113-123.
  - Jeffrey, W.H., R. Von Haven, M.P. **Hoch** and R.B. Coffin. 1996. Bacterioplankton RNA, DNA, protein content and relationships to rates of thymidine and leucine incorporation. *Aqua. Microbial Ecol.* 10: 87-95.
  - **Hoch**, M.P., R.A. Snyder, L.A. Cifuentes, and R.B. Coffin. 1996. Stable isotope dynamics of nitrogen recycled during interactions among marine bacteria and protists. *Mar. Ecol. Prog. Ser.* 132: 229-239.
  - **Hoch**, M.P., L.A. Cifuentes, and R.B. Coffin. 1995. Assessing geochemical and biological fate for point source loads of sewage-derived nitrogen and organic carbon in coastal waters of Southern Florida - Final Report. U.S. EPA- Region IV, Atlanta. 156 pgs.
  - **Hoch**, M.P. and D.L. Kirchman. 1995. Ammonium uptake by bacteria in the Delaware Estuary and coastal water. *Limnol. Oceanogr.* 40: 886-897.
  - **Hoch**, M.P., M.L. Fogel, and D.L. Kirchman. 1994. Isotope fractionation during ammonium uptake by marine microbial assemblages. *Geomicrobiol. J.* 12: 113-117.
  - **Hoch**, M.P. and D.L. Kirchman. 1993. Seasonal and inter-annual variability in bacterial production and biomass in a temperate estuary. *Mar. Ecol. Prog. Ser.* 98: 283-295.
  - **Hoch**, M.P., M.L. Fogel, and D.L. Kirchman. 1992. Isotope fractionation associated with ammonium uptake by a marine bacterium. *Limnol. and Oceanogr.* 37(7): 1447-1459.
  - **Hoch**, M.P., D.L. Kirchman, and M.L. Fogel. 1989. Nitrogen isotope fractionation in the uptake of ammonium by a marine bacterium. *In: Annual Report of the Director of the Geophysical Laboratory, Carnegie Instn. Washington, 1988-1989. Geophysical Laboratory, Washington, D.C., pp. 117-123, 1989.*
  - Kirchman, D.L., and M.P. **Hoch**. 1988. Bacterial production in the Delaware Bay estuary estimated from thymidine and leucine incorporation rates. *Mar. Ecol. Prog. Ser.* 45: 169-178.
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