

RICHARD ALAN NIESENBAUM, Ph.D.

Biology Department
Muhlenberg College
Allentown, Pennsylvania 18104-5586

484-664-3258 (office)
niesenba@muhlenberg.edu
<https://richardniesenbaum.com/>

EDUCATION

Ph.D., Biology with specialization in Ecology, University of Pennsylvania, Department of Biology, Philadelphia, PA, 1992
M.S., Biological Oceanography and Coastal Ecology, University of Connecticut, Department of Marine Science, Storrs, CT, 1986
B.A., Biology and Environmental Studies, University of Pennsylvania, Philadelphia, PA, 1984, *Cum laude*, Honors in Environmental Studies

ACADEMIC APPOINTMENTS

Sheller Endowed Professor 2016-present
Director of the RJ Fellows Honors Program 2016-present
Professor of Biology and Sustainability Studies, Muhlenberg College, 2006-present
Director of Sustainability Studies, Muhlenberg College, 2007-present
Program Faculty in Sustainability Studies, Environmental Science, Public Health, Latin American & Caribbean Studies
Co-Director of the Office of Campus Sustainability 2011-present
Department Chair, Biology Department, Muhlenberg College, 2004-2010
Associate Professor of Biology and Environmental Studies, Muhlenberg College, 1998-2006
Visiting Scholar, International Programs, The Rodale Institute, 1999-2000
Assistant Professor of Biology and Environmental Studies, Muhlenberg College, 1993-1998
Assistant Professor (Visiting), Swarthmore College, 1992-1993
Lecturer, University of Pennsylvania, 1988-1992

FORTHCOMING BOOKS

Niesenbaum, RA. *Sustainable Solutions: Problem solving for current and future generations*. Oxford University Press. In Production, Scheduled release: January 2018
Niesenbaum, RA. and J Elliott. *In Exchange for Gold: The Legacy and Sustainability of Mining in Las Juntas de Abangares, Costa Rica*, Common Ground Publishing. Under contract and in progress, anticipated publication in 2018.

PEER REVIEWED PROFESSIONAL PUBLICATIONS

Niesenbaum, R.A. 2013. Can latitudinal studies predict potential effects of global climate change on insect herbivore - host plant interactions? *Trends in Entomology* 8:1-8.
Mooney, E.H. and R.A. Niesenbaum. 2012. Population-specific responses to light influence herbivory in the understory shrub *Lindera benzoin*. *Ecology* **93**(12): 2683-2692.
Ingersoll, C.M., R.A. Niesenbaum, C.E. Weigle* and JH. Lehman*. 2010. Total Phenolics and Individual Phenolic Acids Vary with Light Environment in *Lindera Benzoin*. *Botany* **88**(11): 1007-1010.
Mooney, E.H., M.E. Edwards, and R.A. Niesenbaum. 2010. Genetic differentiation between sun and shade habitats in populations of *Lindera benzoin* L. *Population Ecology*, 52:417-425.

- Mooney, E.H., E.J. Tiedeken, N.Z. Muth, and R.A. Niesenbaum. 2009. Differential induced response to generalist and specialist herbivores by *Lindera benzoin* L. (Lauraceae) in sun and shade. *Oikos*, 118:1181-1189.
- Muth, N.Z., E.C. Kluger, J.H. Levy, M.J. Edwards and R.A. Niesenbaum. 2008. Increased per capita herbivory in the shade: necessity, feedback, or luxury consumption? *Ecoscience*, 15:182-188
- Skoczylas, D., R.A. Niesenbaum, and N.Z. Muth. 2007. Top-down control of herbivory by insectivorous avifauna. *Acta Oecologica*, 32:337-342.
- Edwards, M.E., and R.A. Niesenbaum. 2007. Eleven polymorphic microsatellite loci in *Lindera benzoin*, Lauraceae. *Molecular Ecology Notes*, 7:1302-1304.
- Niesenbaum, R.A., J.F. Cahill, and C. Ingersoll. 2006. Light, Wind, and Touch Influence Leaf Chemistry, Growth, and Rates of Herbivory in *Apocynum cannabinum* (Apocynaceae). *International Journal of Plant Sciences* 167:511-521
- Niesenbaum, R.A. and E.C. Kluger. 2006. When Studying the Effects of Light on Herbivory, Should One Consider Temperature? The Case of *Epimecis hortaria* F. (Lepidoptera: Geometridae) Feeding on *Lindera benzoin* L. (Lauraceae). *Environmental Entomology* 35:600 - 606
- Lewis, T.L. and R.A. Niesenbaum. 2005. Extending the Stay: Using Community-Based Research and Service-Learning to Enhance Short-Term Study Abroad. *Journal of Studies in International Education*, 9:251-264.
- Niesenbaum, R.A., M.E. Salazar, and A.M. Diop. 2004. Community Forestry in the Mayan Biosphere Reserve in Guatemala. *The Journal of Sustainable Forestry* 19:11-28
- Niesenbaum, R.A. 2004. Creating an undergraduate culture of science by integrating inquiry, project-based learning and research into the curriculum. In: *Innovations in Undergraduate Research and Honors Education*, National Collegiate Honors Council, State College, PA, pp. 36-41.
- Bharucha, D.X., B. Morling, and R.A. Niesenbaum. 2002. Use and definition of herbal medicines differ by ethnicity. *Annals of Pharmacotherapy* 37:1409-1413
- Niesenbaum, R.A. and T. Lewis. 2003. Ghettoization in Conservation Biology: How Interdisciplinary is our teaching? *Conservation Biology* 17:6-10.
- Niesenbaum, R.A. and B. Gorka. 2001. Community-based international eco-educational programming: Sound ecology and effective education. *Journal of Environmental Education*. 33:12-16.
- Gorka, B. and R.A. Niesenbaum. 2001. Beyond the language requirement: Interdisciplinary short term study abroad programs in Spanish. *Hispania*. 84:100-109.
- Niesenbaum, R.A. 1999. The effects of pollen load size and donor diversity on pollen performance, selective abortion, and progeny vigor in *Mirabilis jalapa*. *American Journal of Botany*. 86:261-268.
- Niesenbaum, R.A., M.D. Patselis, and S.D. Wiener. 1999. Does flower color change in *Aster vimineus* cue pollinators? *American Midland Naturalist*. 141:59-68.
- Niesenbaum, R.A. and S.K. Schueller. 1997. The effects of pollen competitive environment on pollen performance in *Mirabilis jalapa*. *Sexual Plant Reproduction* (Springer-Verlag), 10: 101-106.
- Niesenbaum, R.A. 1996. Linking Herbivory and pollination: Defoliation and selective fruit abortion based on pollen tube numbers in *Lindera benzoin*. *Ecology*, 77:2324-2331 .
- Niesenbaum, R.A. and B.B. Casper. 1994. Pollen tube numbers and selective fruit maturation in *Lindera benzoin*. *The American Naturalist*, 144:184-191.
- Niesenbaum, R.A. 1994. Spatial and temporal variation in pollen tube numbers in *Lindera benzoin* (Lauraceae). *Canadian Journal of Botany*, 72:268-271
- Casper, B.B. and R.A. Niesenbaum. 1993. Pollen versus resource limitation of seed production: A reconsideration. *Current Science*, 65:210-214

- Niesenbaum, R.A. 1993. Light or pollen: Seasonal limitations on fruit set in *Lindera benzoin*. *Journal of Ecology*, 81:315-323
- Niesenbaum, R.A. 1992. Sex ratio, components of reproduction, and pollen deposition in *Lindera benzoin*. (Lauraceae). *American Journal of Botany*, 79:495-500.
- Niesenbaum, R.A. 1992. The effects of light environment on herbivory and growth in the dioecious shrub *Lindera benzoin* (Lauraceae). *American Midland Naturalist*, 128:270-275.
- Petratis, P.S., R.E. Latham, and R.A. Niesenbaum. 1989. The maintenance of species diversity by disturbance. *Quarterly Review of Biology*, 64:393-418.
- Niesenbaum, R.A. 1988. The ecology of sporulation by the macroalga *Ulva lactuca* L. (Chlorophyceae). *Aquatic Botany*, 32:155-166.

EXTERNAL FUNDING

- Principal Investigator – **The National Science Foundation**, Cross-Disciplinary Research at Undergraduate Institutions (NSF-CRUI), Linking ecology, leaf chemistry, and genetics to assess abiotic and biotic determinants of herbivory. One of 4 awards nationally. \$1,050,000. 2005-2009.
- Principal Investigator – **The National Science Foundation**, Research Experiences for Teachers - Supplement to NSF-CRUI. \$10,000, 2005-2006.
- Principal Investigator - **FIPSE** - Discovery and Exploration in the Physical and Life Sciences - A grant to support students at risk. \$99,410, 2004-2006.
- Co-Principal Investigator - **Merck/AAAS** – Undergraduate Research Experiences at the Interface of Biology and Chemistry. \$75,000, 2003-2005
- Principal Investigator - **The National Science Foundation**, Division of Environmental Biology, RUE Supplement, How Experimenter Visitation and Measurement Affect Herbivory and Plant Growth, 2003, \$6,000
- Principal Investigator - **The National Science Foundation**, Division of Environmental Biology, Research Award, How Experimenter Visitation and Measurement Affect Herbivory and Plant Growth, 2002-2004, \$75,000
- Principal Investigator - **The National Science Foundation**, Division of Environmental Biology, RUE Supplement, How Experimenter Visitation and Measurement Affect Herbivory and Plant Growth, 2002, \$6,000
- Co-Principal Investigator – **Merck/AAAS** – Undergraduate research experiences integrating Biology and Chemistry, \$60,000.
- Principal Investigator – **The Kellogg Foundation & Keystone 21**. Linking biological, economic and social indicators to evaluate international conservation programs \$7200.
- Co-Principal Investigator – **The National Science Foundation** (NSF-ILI). Establishment of a Biology Computer Lab for a project based curriculum, \$31,765
- Principal Investigator - Conservation Assessment Program Grant - **Institute of Museum and Library Services**. Assessment of the Graver Arboretum, \$5700
- Principal Investigator - Technical Assistance Grant - **Institute of Museum and Library Services**. A curatorial study at the Graver Arboretum, \$3180
- Co-Principal Investigator - Institutional Incentive Grant - **PA Summer Academy Expansion Project**. Improving teaching effectiveness at Muhlenberg through the establishment of the Faculty Center for Teaching, \$13,000
- Armine Elssaeser III Fellowship - **The Sea Education Association** - Human Ecology of Fjords, 1990, \$5000.

PUBLISHED BOOK REVIEWS

- Niesenbaum RA (2009) Foundations of environmental sustainability: the coevolution of science and policy. Rockwood, Larry L., Ronald E. Stewart, and Thomas Dietz, editors. *Ecology* 90:573-574

- Niesenbaum, R. A. 2005. Sustainability on Campus: Stories for Strategy and Change by Barlett, Peggy F., Chase, Geoffrey W. (Editors). *Journal of Society and Natural Resources*, 18:775-777.
- Niesenbaum, R. A. 2004. Bringing the Food Economy Home: Local Alternatives to Agribusiness by Helena Norberg-Hodge, Todd Merrifield and Steven Gorelick. *Journal of Society and Natural Resources* 17(4): 319-321
- Niesenbaum, R.A. 2001. The Rose's Kiss: A Natural History of Flowers. *Plant Science Bulletin* 48:32-33.
- Niesenbaum, R.A. 2000. Towards a Sustainable Future: Environmental Activism in Russia and the United States. *Human Ecology Review*. 7:81-82
- Niesenbaum, R.A. 1999. Plant Life Histories: Ecology, Phylogeny, and Evolution. *Quarterly Review of Biology* 74:83.
- Niesenbaum, R.A. 1995. Plant Conservation Biology. *Plant Science Bulletin*, 43:25-26.
- Niesenbaum, R.A. 1993. Ecology and evolution of plant reproduction: New approaches. *Plant Science Bulletin*, 39:25-26

OTHER PROFESSIONAL PUBLICATIONS (Selected)

- Lewis, T.L. and R.A. Niesenbaum. 2005. The benefits of Short-Term Study Abroad. *The Chronicle of Higher Education*, June 3, 2005, B20 (Invited article/Cover story).
- Niesenbaum, R.A. 2004. Hydrogen fuel initiative flawed from the start. *The Morning Call* (Letter), May 2, 2004
- Niesenbaum, R.A. and T. Lewis. 2003. Reviewing Conservation Biology Textbooks: A response to Primack. *Conservation Biology* 17:1.
- The Benefits to Students and Professors of Research by Undergraduates. *The Chronicle of Higher Education* (Letter), December 2000.

INVITED PRESENTATIONS

- Niesenbaum, R.A. 2015. *Fish and Gold: Two Case Studies in Sustainability*. East Stroudsburg University, Department of Biology
- Niesenbaum, R.A. and T.L. Lewis. 2005. Curriculum Integration and Study Abroad: Case Studies in Science, Peace and Conflict Studies and Engineering. PaCIE Conference, Philadelphia
- Niesenbaum, R.A. 2002. How do we integrate botany into a hierarchical biology curriculum? Forum on Botanical Education and Outreach. Botany2002. Madison, Wisconsin
- Niesenbaum, R.A. 2001. Creating an undergraduate culture of science through project-based learning. Invited Symposium: Innovations in Undergraduate Research and Honors Education. State College, PA, April, 2001.
- Niesenbaum, R.A. 2002. Trees, politics and people: Towards sustainable resource use in Northern Guatemala. Invited Seminar – Biology Department, Kutztown University October 2000.
- Niesenbaum, R.A. 2000. Using technology to broaden the scientific experience through project based learning. Invited Symposium: Using educational technology to foster learning centered pedagogies. Botany 2000, Portland, OR.
- Niesenbaum, R.A. 1999. Selective abortion in plants. Invited Seminar – Biology Department, Georgetown University, March 1999
- Niesenbaum, R.A. 1997. Selective abortion in plants. Invited Seminar - Pymatuning Research Laboratory, University of Pittsburgh, July 1997
- Niesenbaum, R.A. 1995. When plants pound their chests. Invited Seminar - Biology Department, University of Pennsylvania, March 1995
- Niesenbaum, R.A. 1993. Why botanists burn plants: fire as a tool in conservation biology. Symposium on the Environment, Muhlenberg College, October 1993.

Casper, B.B. and R.A. Niesenbaum. 1993. Pollen versus resource limitation of seed production: A reconsideration. International symposium on Pollination in the Tropics, Bangalore, India.

SELECTED PROFESSIONAL SERVICE

Manuscript Review

Review 6-10 manuscripts per year for the following journals: *International Journal of Plant Science*, *American Journal of Botany*, *Plant Biology*, *Ecology*, *Journal of Ecology*, *Oecologia*, *Evolution*, *Canadian Journal of Botany*, *Acta Oecologia (Paris)*, *Journal of PA Academy of Science*, *Bulletin of the Torrey Botanical Society*, *Biotropica*, *New Zealand Journal of Crop and Horticultural Science*.

Text Review

Solicited/Acknowledged review of the following texts:

Hillis, Sadava, Heller and Price, *Principles of Life*, Sinauer

Van Dyke, *Conservation Biology*, McGraw Hill

Raven, Johnson, Losos, and Singer. *Biology*, 7th edition. McGraw Hill

Nabors. *Introduction to Botany*. Benjamin Cummings

Withgott and Brennan. *Environment: The Science Behind the Stories*, 2e. Addison Wesley

Concept review for Economic Botany Text, Cambridge University Press.

Proposal Review

Solicited review of individual research proposals for the National Science Foundation, 1-3 per year, from the following programs:

NSF-Division of Environmental Biology (DEB)

NSF-Research Undergraduate Experiences (RUE)

NSF-Course, Curriculum, and Laboratory Improvement (CCLI)

National Science Foundation Panels

Invited to work on 3-day panels in Washington DC, to review proposals for the following programs:

NSF Graduate Research Fellowship (GRF): 2003, 2004, 2008-2013, Panel Chair: 2009, 2010

NSF-Course, Curriculum, and Laboratory Improvement (CCLI): 1999, 2000

Fulbright Panel for Central America and the Caribbean

IIE, New York City, December 2012, 2013, 2014

EPA STARS – Graduate Research Fellowship Panel Review

March 2013 – Biofuels and Forestry

Other Service Related to Professional Expertise

American Association for Sustainability In Higher Education Advisory Board 2017-2020

Allentown, PA, Planning Commission, 2015-present

Allentown, PA, Water Advisory Committee, 2013-present

Allentown, PA, Environmental Advisory Council (EAC), 2013-present

Salisbury PA, Environmental Advisory Council (EAC), 2009-2012

Lehigh Valley Planning Commission - Appointed to serve on this bi-county planning commission by

County Executive 2004-2008. Committee membership: Transportation Committee

Women's Recycling Cooperative, Coopeproca, Las Juntas Costa Rica, Advisor

Rodale Institute – Advisory Board

Long Range Planning Committee – The United Friends School, Quakertown, PA
The Nature Conservancy - Volunteer Burn-Restoration Crew
Education Committee – The Ecological Society of America
Fair Trade Coffee “Ambassador” representing *Global Exchange* and Cecocafen (Nicaragua)

SELECTED MUHLENBERG COLLEGE SERVICE

MILA Assessment Workshop Leader (2015-2016)
Mellon Grant International Faculty Seminar (Costa Rica) Leader (2015-2016)
Director of RJ Fellows Honors Program (2016-present)
Director of Sustainability Studies (2009-present)
Co-director of the Office of Campus Sustainability (2010-present)
President’s Committee on Sustainability – Co-Chair (2003-present)
Appeals Committee – (2011-present)
Campus Tree Committee (1997-present)
College Committee on Fitness and Athletics (2010-2013, Chair)
Building Executive Committee (2004-2007)
Science Building Architect Selection Committee (2004)
Chair of Biology Department (2004-2010)
Presidential Search Committee – Selected by the Faculty (2002-2003)
Faculty Evaluation Committee (1999-2003)
Representative to the Board of Trustees (2001-2003)
Nominating Committee (1994-1997)
Lectures and Forums Committee (1994-1997)
Faculty Center for Teaching Advisory Board (1995-2000, Founding member)
Biology Department Searches 1993, 1994, 1995(chair), 1996, 1997, 2000, 2001, 2002(chair)
Arboretum Advisory Committee (1993-present, chair)
GIS Coordinator; Greenhouse and College Herbarium Manager (Continuing)
Humanities Faculty Seminar Planning Committee (1999-2000, 2000-2001)
Center for Ethics and Leadership Planning Committee (2001-2003)