

Matthew R. Opdyke, PhD

Point Park University, Dept. of Natural
Sciences, Engineering and Technology,
201 Wood St., Pittsburgh, PA 15222
412-209-9308
mopdyke@pointpark.edu

Teaching Experience

2007-Present

Professor of Environmental Studies / Point Park University, Pittsburgh, PA

- Director of Masters of Science in Environmental Studies Program
- Teach introductory courses (Environmental Science, General Biology, General Chemistry), upper-level courses (Biological Evolution, Ecology, Environmental Applications), and graduate courses (Environmental Science, Environmental Technology, Research Dissemination)
- Serve on Academic Committees in technology and career services
- Mentor student research and serve as an academic advisor to graduate and undergraduate students

2007

**Adjunct Professor of General Chemistry / Lansing Community College,
Lansing, MI**

2005

Adjunct Professor of General Chemistry / Parkland College, Champaign, IL

2004-2005

**Visiting Assistant Professor of Aquatic Ecosystem Conservation / University of
Illinois, Urbana-Champaign, IL**

2001

**Adjunct Professor of Environmental Science / Georgia Military Community
College, Martinez, GA**

Work Experience

2006-2007

Postdoctoral Research Associate / Michigan State University, East Lansing, MI

- Supervised research in stable isotope biogeochemistry investigating microbial processes in the nitrogen cycle that contribute to greenhouse gas emissions from different agroecosystems

2000-2002

**Environmental Scientist / Savannah River Ecology Laboratory, Savannah River
Site, Aiken, SC**

- Managed a U.S. Department of Energy project investigating the distribution of metals in a constructed wetland to assess the effectiveness of the wetland at treating coal ash waste

- Designed and managed a forest-impact project to study the impact of forestry practices on terrestrial nitrogen processes
- Collaborated with the U.S. Department of Defense to study the impact of military activities on terrestrial nitrogen processes at Fort Benning, GA
- Chemistry laboratory coordinator responsible for training, supervising, and maintaining quality assurance on analytical instruments (mass spectrometer, auto-analyzer, ion chromatograph)

1999

Nature Center Naturalist / Fallwood Nature Center, Martinsville, IN

- Developed educational material and led natural science classes for K-12 students

1998

Stream Biologist / Pasture Systems and Watershed Research Laboratory, U.S. Department of Agriculture, State College, PA

- Surveyed the physical and biological properties of streams throughout Pennsylvania to assess the biological integrity of streams in agricultural regions

1997

Wildlife Biologist / White Mountain National Forest, U.S. Forest Service, Conway, NH

- Assisted in the development of the White Mountain National Forest management plan by surveying aquatic organisms, birds, and small mammals

Education

May 2005

PhD in Biogeochemistry / University of Illinois, Urbana-Champaign, IL

- Research Assistantship awarded to study the relationship between fluvial geomorphology and nitrogen processes in streams impacted by agriculture
- Teaching Assistantships awarded to teach Aquatic Ecosystem Conservation and Soil Science Laboratory

May 2000

Master of Science in Environmental Science / Indiana University, School of Public and Environmental Affairs, Bloomington, IN

- Research Thesis on the application of aquatic macroinvertebrates as indicators of water pollution
- Teaching Assistantships awarded to teach General Biology Laboratory and Finite Mathematics

May 1998

Bachelor of Science in Environmental Biology / Mansfield University, Mansfield, PA

May 1995

[Associate of Arts in Environmental Biology](#) / Keystone College, La Plume, PA

Research and Community Service

2017-Present

[Citizen Science: Project Bee Watch](#) / Southwestern Pennsylvania

- Designed and supervise the first citizen science project in southwestern Pennsylvania to recruit citizen scientists to assess the status of pollinators in the region
- Partners include Allegheny County Department of Parks, Allegheny Land Trust, Pittsburgh Parks Conservancy, and Point Park University
- Co-hosted a Pollinator Festival in 2018 to educate the community on the importance of pollinators
- Manage student research studying the efficacy of bee hotels

2008-Present

[Monitoring Succession in a Restored Floodplain Wetland](#) / Allegheny Land Trust, Sewickley, PA

- Supervise faculty-student research monitoring plant succession at a floodplain wetland to evaluate the success of restoration efforts by Allegheny Land Trust at Wingfield Pines Conservation Area

2008-Present

[Lichen Diversity and Distribution as Indicators of Air Quality](#) / Western Pennsylvania

- Supervise faculty-student research conducting surveys of lichens throughout western Pennsylvania to investigate the region's air quality

2010-2012

[Watershed Conservation Plan for Fishing Creek Watershed](#) / Columbia County, PA

- Supervised surveys of stream habitat, water chemistry, and aquatic fauna, which were used to develop a Watershed Conservation Plan for Fishing Creek watershed in Columbia County, PA
- Partners included Fishing Creek Sportsman Association, Western Pennsylvania Conservancy, Point Park University, and community members

Grants and Awards

- 2008-Present: [Monitoring Succession in a Restored Floodplain Wetland](#) / Consulting Grant Awarded by Allegheny Land Trust
- 2018: [Increasing the Awareness of Pollinators through Citizen Science](#) / Social Impact Grant Awarded by Point Park University, Department of Community Engagement
- 2017: [Life Discovery-Doing Science Education using Environmental Case Studies](#) / Education Grant Awarded by National Science Foundation
- 2014: [Surveying Lichen Diversity at Pymatuning Ecology Laboratory](#) / G. Murray McKinley Research Grant Awarded by University of Pittsburgh

- 2010: [Watershed Conservation Plan for Fishing Creek Watershed](#) / Watershed Conservation Planning Grant Awarded by Coldwater Heritage Partnership
- 2008: [Lichen Diversity and Distribution as Indicators of Air Quality in Western Pennsylvania](#) / Wild Resource Conservation Grant Awarded by PA Department of Conservation and Natural Resources
- 2002-2005: [Doctoral Research Assistantship](#) / University of Illinois, Urbana-Champaign
- 1999-2000: [Master's Degree Teaching Assistantship](#) / Indiana University, Bloomington

Professional Recognition

- 2017: [Promotion to Full Professor](#) / Point Park University
- 2016: [Leonard Finkelhor Lecturer for Recognition of Faculty-Student Research](#) / Point Park University
- 2015: ["Newsmaker" for Recognition of Collaborating with Allegheny Land Trust on Wetland Restoration Project](#) / Pittsburgh Tribune-Review
- 2014: ["Newsmaker" for Recognition of Lichen Research on Air Quality](#) / Pittsburgh Tribune-Review
- 2011: [Tenure and Promotion to Associate Professor](#) / Point Park University
- 2011: [Café Scientifique Presenter on Lichen Research](#) / Carnegie Science Museum, Pittsburgh, PA
- 2010: [Lichens as Indicators of Air Quality in Southwestern Pennsylvania](#) / Radio Program, Allegheny Front, PA.
- 2010: ["Newsmaker" for Recognition of Watershed Conservation Research](#) / Pittsburgh Tribune-Review
- 2008: [21st Century Alumni Society Keynote Speaker](#) / Point Park University
- 2005: [Runner-up for Best-Applied Research Presentation](#) / North American Benthological Society

Publications

- 2018: [Mark and Recapture: Estimating Animal Population Size](#) / Ecological Society of America's EcoEd Digital Library. Submitted and Accepted.
- 2018: [Increasing the Awareness of Pollinators through Citizen Science](#) / Opdyke, M.R., Grant Report, Point Park University, Department of Community Engagement.
- 2018: [Wingfield Pines Wetland Plant Monitoring Report](#) / Opdyke, M.R., Grant Report, Allegheny Land Trust, PA.
- 2016: [Checklist of Lichens of Crawford County, Pennsylvania](#) / Opdyke, M.R. and J.R. Daugherty, *Evansia* 33:9-13.
- 2016: [Lichens of Bolivar Heights and Nash Farm at Harper's Ferry National Historic Park](#) / Opdyke, M.R., Harper's Ferry National Historic Park, WV.
- 2012: [Cladistics: A Tool for Teaching about Evolutionary Relationships](#) / Opdyke, M.R., *Green Teacher* 95:31-35.
- 2011: [A Study of Epiphytic Lichen Communities in Urban and Rural Environments in Southwestern Pennsylvania](#) / Opdyke, M.R., B.E. Dolney, L. Frost, and J.D. Roy, *Journal of Pennsylvania Academy of Sciences* 85:151-158.

- 2011: [Improving Process-based Estimates of N₂O Emissions from Soil using Temporally Extensive Chamber Techniques and Stable Isotopes](#) / Smemo, K.A., N.E. Ostrom, M.R. Opdyke, P.H. Ostrom, and G.P. Robertson, *Nutrient Cycling in Agroecosystems* 91:145-155.
- 2011: [Fishing Creek Watershed Coldwater Conservation Plan](#) / Opdyke, M.R. Coldwater Heritage Partnership, Available at <http://www.coldwaterheritage.org>.
- 2010: [Lichen Community Structure Across an Urban to Rural Landscape Gradient](#) / Opdyke, M.R., Pennsylvania Department of Conservation and Natural Resources, Available at <http://dcnr.state.pa.us/conservationscience/wrcp>.
- 2010: [Non-point Source Pollution](#) / Opdyke, M.R., *Green Cities: An A- to Z-Guide*, N. Cohen (ed.), Sage Publications, CA.
- 2009: [Evidence for the Predominance of Denitrification as a Source of N₂O in Temperate Agricultural Soils Based on Isotopologue Measurements](#) / Opdyke, M.R., N.E. Ostrom, and P.H. Ostrom, *Global Biogeochemical Cycles* 23, DOI 10.1029/2009GB003523.
- 2009: [Discovering Lake Management](#) / Opdyke, M.R., *Teaching Green: The High School Years*, T. Grant and G. Littlejohn (eds.), Green Teacher, Ontario.
- 2009: [Discovering Lake Management](#) / Opdyke, M.R., *Green Teacher* 80:33-38.
- 2007: [Response of Sediment Denitrification Rates to Environmental Variables in Streams Heavily Impacted by Agriculture](#) / Opdyke, M.R. and M.B. David, *Journal of Freshwater Ecology* 22:371-382.
- 2006: [Influence of Geomorphological Variability in Channel Characteristics on Sediment Denitrification in Agricultural Streams](#) / Opdyke, M.R., M.B. David, and B.L. Rhoads, *Journal of Environmental Quality* 35:2103-2112.

Presentations

- 2018: [Project Bee Watch: Using Citizen Scientists to Assess Pollinator Status](#) / Opdyke, M.R., Allegheny Land Trust Pollinator Festival, PA.
- 2018: [All About Lichens](#) / Opdyke, M.R., Adult Education Program, Pittsburgh Botanical Garden, PA.
- 2018: [All About Lichens](#) / Opdyke, M.R., Quaker Valley High School Education Program, Fern Hollow Nature Center, PA.
- 2017: [Wetland Plant Succession in a Restored Floodplain](#) / Opdyke, M.R., Northeast Natural History Conference, CT.
- 2017: [Introduction to Pollinators](#) / Opdyke, M.R., Master Naturalist Program, Allegheny Land Trust, PA.
- 2017: [Introduction to Wetland Restoration](#) / Opdyke, M.R., Master Naturalist Program, Allegheny Land Trust, PA.
- 2014-2017: [Introduction to Botany](#) / Opdyke, M.R., Master Gardner Program, Pennsylvania State Extension, PA.
- 2015: [Plant Succession in a Restored Floodplain Wetland](#) / Opdyke, M.R., Ecological Society of America Conference, MD.
- 2013: [Conservation Assessment on Fishing Creek in Columbia and Sullivan Counties](#) / Opdyke, M.R., R.S. Opdyke, C. Harvey, and E. Chapman, Susquehanna River Basin Commission Conference, PA.

- 2013: [Land Trust and University Profits from Partnership: Case Studies Involving Invasive Species and Dendrochronology](#) / Opdyke, M.R., M. Good, and I. Reiland, Association for Environmental Studies and Sciences Conference, PA.
- 2013: [Introduction to Lichens](#) / Opdyke, M.R., Adult Education Program, Audubon Society of Western Pennsylvania, PA.
- 2012: [Distribution and Diversity of Lichen Communities Influenced by Urbanization in Southwestern Pennsylvania](#) / Opdyke, M.R. and B. Dolney, Botanical Society of America, LA.
- 2012: [Coldwater Conservation Plan for Fishing Creek, Columbia County, Pennsylvania](#) / Opdyke, M.R., R.S. Opdyke, Fishing Creek Sportsman Association, and Western Pennsylvania Conservancy, Keystone Coldwater Conference, PA.
- 2012: [Succession in a Restored Floodplain Wetland](#) / Opdyke, M.R., Wingfield Pines Community Conference, Allegheny Land Trust, PA.
- 2011: [GigaPan Technology: A Web-based Platform for Ecological Research and Outreach](#) / Opdyke, M.R., Ecological Society of America Conference, TX.
- 2011: [Introduction to Lichens](#) / Adult Education Program, Botanical Society of Western Pennsylvania, PA.
- 2011: [Introduction to Pollinators](#) / Opdyke, M.R., Master Naturalist Program, Allegheny Land Trust, PA.
- 2011: [Watershed Conservation Plan for Fishing Creek Watershed](#) / Opdyke, M.R., Adult Education Program, Fishing Creek Sportsman Association, PA.
- 2010: [Getting the Most Out of a Wetland: Captivating an Urban Student Audience](#) / Opdyke, M.R., Ecological Society of America Conference, PA.
- 2010: [Lichen Distribution in Southwestern Pennsylvania as an Indicator of Environmental Conditions](#) / Roy, J.D., M.R. Opdyke, and B. Dolney, Pennsylvania Academy of Science Conference, PA.
- 2010: [Watershed Conservation Plan for Fishing Creek Watershed](#) / Opdyke, M.R., Adult Education Program, Trout Unlimited, PA.
- 2009: [Lichen Distribution Across a Landscape Gradient as an Indicator of Air Pollution and Habitat Alteration](#) / Dolney, B.E., M.R. Opdyke, and L. Frost, Ecological Society of America Conference, NM.
- 2009: [Lichen Distribution Across an Urban to Rural Landscape Gradient as an Indicator of Air Pollution and Habitat Alteration](#) / Dolney, B.E., M.R. Opdyke, and L. Frost, Pennsylvania Academy of Science Conference, PA.
- 2009: [Dendrochronology as an Assessment Tool of Tree Growth in Wetland Restoration Projects](#) / Opdyke, M.R. and J.D. Kuikahi, Ecological Society of America Conference, NM.
- 2008: [Nitrous Oxide Production from Bacteria and Fungi in a Semiarid Grassland Soil from Central New Mexico](#) / Opdyke, M.R., P.H. Ostrom, N.E. Ostrom, R.L. Sinsabaugh, and C.L. Crenshaw, Ecological Society of America Conference, WI.
- 2007: [Denitrification is the Primary Source of Soil-derived Nitrous Oxide in a Terrestrial Ecosystem: Evidence from Isotopologues](#) / Opdyke, M., P.H. Ostrom, and N.E. Ostrom, American Geophysical Union Conference, CA.
- 2006: [Application of Nitrous Oxide Isotopomers to Identify Microbial Sources of Soil Fluxes](#) / Opdyke, M., R. Sutka, N. Ostrom, P. Ostrom, and H. Gandhi, LTER All-Scientists Conference, CO.
- 2006: [Development of an Automated Chamber System for Temporally Integrated Estimates of Nitrous Oxide Flux from Soils](#) / Smemo, K.A., G.P. Robertson, N.E. Ostrom, S. Bohm, M. Opdyke, and P.H. Ostrom, LTER All-Scientist Conference, CO.

- 2005: [Linking Denitrification to Channel Geomorphology in Agricultural Streams](#) / Opdyke, M.R., M.B. David, and B.L. Rhoads, North American Benthological Society Conference, LA.
- 2005: [Importance of Stream Denitrification in the Nitrogen Mass Balance of a Midwestern Agricultural Region](#) / David, M.B., T.V. Royer, J.L. Tank, and M.R. Opdyke, North American Benthological Society Conference, LA.
- 2004: [The Effects of Geomorphic Controls on Denitrification Rates in Agricultural Streams of East-central Illinois](#) / Opdyke, M.R., M.B. David, and B.L. Rhoads, North American Benthological Society Conference, Canada.
- 2004: [Managing Nitrogen and Phosphorus in the Midwestern United States](#) / Opdyke, M.R. and B.R. Vermillion, Environmental Horizons Conference, IL.
- 2002: [Elemental Composition in Aquatic Macrophytes from a Constructed Treatment Wetland](#) / Opdyke, M.R., D.P. Coughlin, R.R. Sharitz, and B.S. Collins, Association of Southeastern Biologists Conference, NC.
- 2002: [Nitrogen Composition in Soils among Loblolly Pine Treatments Ranging from a Mixed, Pine/Deciduous Forest to a Recently Thinned, 60-year Old Pine Plantation](#) / Opdyke, M.R., Association of Southeastern Biologists Conference, NC.