

MATTHEW R. OPDYKE

Director of M.S. in Environmental Studies Program and Professor of B.S. in Biological Sciences
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EDUCATION:

University of Illinois, Urbana-Champaign, IL

PhD: **Natural Sciences** Graduated May 2005

- Research Assistantship: Relationship between fluvial geomorphology and nitrogen processes in streams impacted by agriculture
- Teaching Assistantship: Soil Science Laboratory

Indiana University, School of Public and Environmental Affairs, Bloomington, IN

Master of Science: **Environmental Science** Graduated May 2000

- Research Thesis: Application of aquatic macroinvertebrates as indicators of water pollution
- Teaching Assistantships: General Biology Laboratory and Finite Mathematics

Mansfield University, Mansfield, PA

Bachelor of Science: **Environmental Biology** Graduated May 1998

Keystone College, La Plume, PA

Associate of Arts: **Environmental Biology** Graduated May 1995

ACADEMIA WORK EXPERIENCE:

Point Park University, Pittsburgh, PA 2007-Present

Director of M.S. in Environmental Studies Program and Professor of B.S. in Biological Sciences

- Manage, advise graduate students, and recruit students in the Masters of Science in Environmental Studies Program
- Manage, advise students, and recruit students in the Environmental Concentration in the Biological Sciences Program
- Teach introductory courses (Environmental Science, General Chemistry), upper-level courses (Biological Evolution, Ecology, Environmental Applications), and graduate courses (Environmental Science, Environmental Technology, Research Dissemination)
- Serve on Academic Committees: Graduate Programs, Community Engagement, Capital Equipment and Laboratories, Career Services
- Mentor student research in the environmental sciences

Lansing Community College, Lansing, MI 2007

Adjunct Professor of General Chemistry

Parkland College, Champaign, IL 2005

Adjunct Professor of General Chemistry

University of Illinois, Urbana-Champaign, IL 2004-05
Visiting Assistant Professor of Aquatic Ecosystem Conservation

Georgia Military Community College, Martinez, GA 2001
Adjunct Professor of Environmental Science

OUTSIDE ACADEMIA WORK EXPERIENCE:

Michigan State University, East Lansing, MI 2006-07
Postdoctoral Research Associate

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

Savannah River Ecology Laboratory, Savannah River Site, Aiken, SC 2000-02
Environmental Scientist

- Managed a U.S. Department of Energy project investigating the distribution of metals in a constructed wetland to assess its effectiveness at treating coal ash waste
- Collaborated with the U.S. Department of Defense to study the impact of military activities and forestry practices on soil nitrogen processes
- Chemistry laboratory coordinator responsible for training, supervising, and maintaining quality assurance on analytical instruments (mass spectrometer, auto-analyzer, ion chromatograph)

Fallwood Nature Center, Martinsville, IN 1999
Nature Center Naturalist Intern

- Developed and implemented educational classes for K-12 students

Pasture Systems and Watershed Research Laboratory (USDA), State College, PA 1998
Stream Biologist Intern

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

White Mountain National Forest (USFS), Conway, NH 1997
Wildlife Biologist Intern

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

RESEARCH AND COMMUNITY SERVICE:

Point Park University, Pittsburgh, PA 2017-Present
Citizen Science Project Manager: Project Bee Watch

- Designed and supervise the first citizen science project in southwestern Pennsylvania to recruit and train citizen scientists to assess the status of pollinators in the region
- Partnered with Allegheny County Department of Parks, Allegheny County Parks Foundation, Allegheny Land Trust, and Pittsburgh Parks Conservancy
- Co-hosted a Pollinator Festival in 2018 to educate the community on the importance of pollinators
- Supervise faculty-student research

Allegheny Land Trust, Sewickley, PA 2008-Present

Principal Investigator: Ecological Succession of a Restored Floodplain Wetland

- Supervise faculty-student research monitoring wetland plant succession at Wingfield Pines Conservation Area to assess the success of restoration efforts

Pennsylvania Depart. of Conservation and Natural Resources, Harrisburg, PA 2008-Present

Principal Investigator: Lichen Diversity and Distribution as Indicators of Air Quality

- Supervise faculty-student research conducting surveys of lichens throughout western Pennsylvania to investigate their application as bioindicators of air quality

Pennsylvania Coldwater Heritage Partnership, Bellefonte, PA 2010-2012

Principal Investigator: Watershed Conservation Plan for Fishing Creek Watershed in Columbia County, PA

- Conducted watershed surveys of stream habitat, water chemistry, and aquatic fauna
- Managed and trained citizen science volunteers to test water chemistry in streams
- Partnered with Fishing Creek Sportsman Association, Trout Unlimited, and Western Pennsylvania Conservancy
- Developed and published a Watershed Conservation Plan

GRANTS AND AWARDS:

- 2008-Present: **Monitoring Ecological Succession in a Restored Floodplain Wetland /** Consulting Grant Awarded by *Allegheny Land Trust*
- 2018-Present: **Increasing the Awareness of Pollinators through Citizen Science – Project Bee Watch /** 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 *Pennsylvania Department of Conservation and Natural Resources*
- 2002-2005: **Graduate Research Assistantship /** *University of Illinois, Urbana-Champaign, IL*
- 1999-2000: **Graduate Teaching Assistantship /** *Indiana University, Bloomington, IN*

PROFESSIONAL RECOGNITION:

- 2019: **Faculty Award for Excellence in Community Engagement /** *Point Park University, Department of Community Engagement*
- 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 Wetland Restoration Research in Collaboration with Allegheny Land Trust** / *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*
- 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:

- 2019: Mark and Recapture: Estimating Animal Population Size / Opdyke, M.R. and K. Rouse, *Ecological Society of America, LifeDiscoveryEd Digital Library Portal*. Available at: https://ecoed.esa.org/r616/case_study_on_mark_and_recapture.
- 2019: 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://dncr.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:

- 2019: Project Bee Watch: Using Citizen Scientists to Assess Pollinator Status / Opdyke, M.R., North Allegheny Environmental Council Community Meeting, PA.
- 2019: Fishing Creek Watershed Coldwater Conservation Plan / Opdyke, M.R., Benton Community Center Event, PA.
- 2019: Harnessing citizen science to promote community stewardship, pollinator research, and habitat restoration / Opdyke, M.R., K. Rouse, and P. Ambrose, Natural Areas Association Conference, PA.
- 2019: Fostering community partnerships through citizen science / Opdyke, M.R. and K. Rouse, Community Engagement Institute Conference, PA.
- 2019: Project Bee Watch / Opdyke, M.R. and K. Rouse, Latodami Nature Center 50th Anniversary Event, PA.
- 2019: Project Bee Watch: Increasing the awareness of pollinators through citizen science / Opdyke, M.R., K. Rouse, and P. Ambrose, Ecological Society of America conference, KY.
- 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.