

Stephen Charles Nold

Biology Department
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SUMMARY OF QUALIFICATIONS

- *Leadership.* Motivated, engaging leader with a clear focus on improving the science education and the student experience. Through respectful and open communication, employs inclusive decision-making techniques that value personal strengths, build consensus, empower stakeholders, and inspire team success. Encourages faculty to take risks and pursue their passions. Displays good judgement while safeguarding fairness and ethical conduct.
- *Research.* Experienced discipline-based education researcher who provides outstanding opportunities for original, authentic student exploration and discovery. Measures student learning and development in response to classroom-based research experiences.
- *Teaching.* Innovative, award-winning educator who employs classroom approaches based on the current education and cognitive psychology literature. Uses and develops evidence-based best practices including cooperative and problem-based learning, case studies, and open-ended inquiry techniques to create an inclusive learning environment and inspire student learning.
- *Service.* Motivated colleague with a strong record of leadership in science education, K-12 outreach, and successful research collaborations. Significant experience providing professional development opportunities. Broadly shares intellectual contributions.

EDUCATION

Ph.D. in Microbiology, December 1996, Montana State University, Bozeman, MT

Dissertation: "*Molecular Analysis of Hot Spring Microbial Mats to Study Bacterial Diversity and Physiology*," Dr. David Ward, Major Professor

B.S. in Biology and Natural Science (double major), **Chemistry** (Minor), December 1989, University of Wisconsin-Stevens Point, Stevens Point, WI

PROFESSIONAL APPOINTMENTS

Higher Education Administration

University of Wisconsin-Stout, Biology Department, Menomonie, WI

Department Chair (2014-2017). Led faculty through development of a mission statement and strategic plan that embraces new directions for our department. Led curriculum reform efforts that maximized student accountability, transparent assessment, and creative classroom interventions. Facilitated the growth of a primarily online graduate program in Conservation Biology. Provided programming to address collegiality, professionalism, and inclusivity issues. Managed several budgets totaling over \$1.3M annually. Oversaw >20 faculty and academic staff, shepherded new courses, guided department through multiple hires, and facilitated development of an Applied Biochemistry and Molecular Biology major. Guided expansion of our department and led space reallocation efforts.

Tournament Co-Director, National Science Olympiad 2016 (2014-2016). Organized the National Science Olympiad tournament held at UW-Stout. Coordinated supervisors for 52 standards-based events and over 300 volunteers for a competition hosting over 2000 middle and high school competitors and 2000 additional attendees. Wrote and directed opening and closing ceremonies attended by 3400 people and viewed by countless others (see <https://www.soinc.org/2016-national-tournament>).

Interim Department Chair (2013-2014). Prioritized the student experience as we created budgetary solutions to significant cuts that minimized impacts to personnel. Fostered professional development and built community to increase adoption of current best practices in the classroom.

Biotechnology Program Coordinator (2004-2013). Originated and built the biotechnology program into a vibrant, well-funded, and successful major with over 250 current students and alumni.

Faculty Associate, Sponsored Research Office (Summer 2010). Wrote the *Scientific Misconduct Policy* for UW-Stout, worked with university administrators to achieve consensus and obtain approval (adopted March 2011). Presented three faculty development seminars to stimulate research activities on campus and assisted numerous faculty with proposal development and writing.

State Tournament Director, Wisconsin Science Olympiad (2010-2016). Organized an annual science competition for 1200 high school students from across the State of Wisconsin. Coordinated and trained supervisors for 54 standards-based events, worked with campus administrators, faculty, and staff to ensure a quality student experience, and oversaw the activities of over 250 volunteers.

Academic

University of Wisconsin-Stout, Biology Department, Menomonie, WI

Professor (2009-present)

Tenured (2005)

Associate Professor (2003-2008)

Assistant Professor (2000-2003)

Michigan State University, Center for Microbial Ecology, East Lansing, MI

Research Associate (1997-1999). Dr. James Tiedje, post-doctoral mentor.

Netherlands Institute of Ecology, Centre for Limnology, Nieuwersluis, The Netherlands

Research Associate (1996-1997). Dr. Riks Laanbroek, post-doctoral mentor.

AWARDS AND HONORS

- CSTEMM Excellence in Partnering with External Stakeholders Award, UW-Stout (2019)
- Outstanding Graduate Faculty Award, UW-Stout (2017-2018)
- Fellow, Wisconsin Academy of Sciences, Arts & Letters (2016)
- Outstanding Teaching Award, UW-Stout (2011-2012)
- Dahlgren Named Professorship, commending excellence in teaching and research (2010-2012)

- Merle Price Faculty Award for Excellence (2008)
- Nelva G. Runnalls Research Support Recognition Award (with Biology Department) (2008)
- Outstanding Researcher of the Year, UW-Stout (2003)
- Promotion to Associate Professor by exception to time in rank criterion, (2003)
- Wisconsin Governor's Recognition, UW-Stout Top Federal Grant Awardee (2002)
- Nominee, Presidential Early Career Award for Scientists and Engineers (PECASE), the nation's most prestigious award for early science faculty (2001)
- Molecular and Cellular Biology Program Fellowship, Montana State University (1993)
- Presidential Scholarship, Montana State University (1992)
- Science and Engineering Research Semester Fellowship, U.S. Department of Energy (1990)
- Academic and Swimming All-American, National Association of Intercollegiate Athletics Division III (1987)

TEACHING

My single-minded focus is on students, their learning and development. I derive my classroom practice from the educational literature and our understanding of cognitive psychology. I employ active, small group strategies to promote student learning in an inclusive and supportive environment. I inspire students by encouraging them to make and share meaningful discoveries. My teaching also includes efforts to improve the quality of science education. I regularly present faculty development workshops and study the impacts of research experiences on student learning and development. I win awards for my teaching.

TEACHING EXPERIENCE

University of Wisconsin-Stout, Biology Department, Menomonie, WI.

*Science, Society, and Sustainability**

- Integrated research improves science thinking learning gains by non-majors
- Average instructor evaluation: 3.91/4.00 (4 semesters)

*Botany**

- Integrated research prepares first-year botany students for science careers

Research Methods in Environmental Science

- Apprentice-style Environmental Science capstone
- Average instructor evaluation: 3.79/4.00 (2 semesters)

College Molecular Cell Biology I

- Intensive small-group work builds first-year student research skills and knowledge
- average instructor evaluation: 3.64/4.00 (21 semesters)

General Microbiology

- Extensive small-group work builds social and research skills, content mastery
- Average instructor evaluation: 3.88/4.00 (14 semesters)

*Biotechnology Capstone**

- Apprentice students design, execute, and share results from original scientific research
- Research results form the basis of student authorships on publications

Biotechnology

- Students perform original research, generate and share new knowledge
- 95% would recommend this course to another student
- Average instructor evaluation: 3.62/4.00 (8 semesters)

Introductory Biology (a non-majors general education course)

- Engaged colleagues in a curriculum reform effort that resulted in a revised laboratory manual that combines cooperative, active learning with open-ended investigation
- 93% would recommend me to another student
- Average instructor evaluation: 3.51/4.00 (7 semesters)

Science, Society, and the Environment

- Science and environmental literacy for non-science majors
- Average instructor evaluation: 3.71/4.00 (1 semester)

*Applied Science Profession I**

- Students explore science professions while building learning skills and community among science majors, exploring personal growth, developing scholarly habits, and learning about inclusive excellence through exposure and reflection

Biotechnology Issues

- Problem-based learning course where student teams consider the impacts of science and technology on society
- 98% would recommend this course to another student

*Special Topics in Biotechnology**

- Student-led exploration of the primary literature

*Evaluation data not available

Michigan State University, Department of Microbiology, East Lansing, MI. *Instructor* (1998).

Critical Reading in Aquatic Ecology

- Designed and delivered this graduate-level course that stressed experimental design, data gathering and synthesis, critical thinking, and communication skills.

Biogeochemistry

- Shared responsibility for the design and delivery of this summer field course.

TEACHING PUBLICATIONS

1. C.J. Ballen, J.E. Blum, S. Brownell, S. Hebert, J. Hewlett, J.R. Klein, E.A. McDonald, D.L. Monti, **S.C. Nold**, K.E. Slemmons, P.A.G. Soneral, S. Cotner (2017). A call to develop course-based undergraduate research experiences (CUREs) for nonmajor courses. *CBE-Life Sciences Education* **16**:mr2, 1-7.
2. **S.C. Nold**. Fecal Coliforms in Antarctica. 2014. pp. 155-161. In Science Stories You Can Count On: 51 Case Studies With Quantitative Reasoning in Biology. C.F. Herreid, N.A. Schiller, K.F. Herreid, eds. National Science Teachers Association Press, Arlington, VA.
3. **S.C. Nold**. Fecal Coliforms in Antarctica. 2002. Center for Case Studies in Science Teaching. http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case_id=330&id=330.

LEADERSHIP IN SCIENCE EDUCATION REFORM

1. Nakatani Teaching and Learning Center Community of Practice facilitator, Course-based Undergraduate Research Experiences, UW-Stout (2019).

2. Workshop participant, CUREs for non-majors-Defining questions, community, and priorities (Summer 2016).
3. Regional PULSE network coordinator for a team of STEM education reformers from UW-Stout (Spring 2014).
4. Biology Scholars Program Research Residency Course Facilitator, American Society for Microbiology (July 2013, 2014, 2015).
5. New Instructor's Workshop originator and co-director, with Dan Riordan of the UW-Stout Nakatani Teaching and Learning Center (2005-2007).

INVITED TEACHING PRESENTATIONS

1. Using service and research to achieve your teaching goals. New Instructor's Workshop, UW-Stout (August 2017).
2. Integrating research into the undergraduate classroom. UW-Stout Nakatani Teaching and Learning Center video training module (November 2016).
3. Effective approaches to group work. Opening Workshop for New STEM Educators, UW Women & Science Program, Wausau, WI (September 2013).
4. 2012 Outstanding Teacher presentation to UW-Stout's new instructors. New Instructor's Workshop, UW-Stout (August 2012).
5. Engaging undergraduates in the research enterprise. New Instructor's Workshop, UW-Stout (August 2011).
6. Introduction to small group learning in the college science classroom. Opening Workshop for New STEM Educators, UW Women & Science Program, Wisconsin Dells, WI (September 2010).
7. Integrating Research into your Classroom: What Works? Polytechnic Summit, UW-Stout (July 2009).
8. Integrating Research into your Classroom: What Works? Best Practices in Science, Math, and Engineering Teaching Conference, UW-Baraboo-Sauk County (May 2009).
9. Integrating Research into your Classroom: What Works? Integrated Solutions Consortium Symposium, UW-River Falls (January 2008).
10. Integrating Research into your Classroom: What Works? American Society for Microbiology Conference for Undergraduate Educators, Buffalo, NY (May 2007).
11. Writing Case Studies. American Society for Microbiology Conference for Undergraduate Educators, Buffalo, NY (May 2007).
12. Biotech tools in your classroom. Wisconsin Society of Science Teachers Convention, Wausau, WI (March 2006).
13. Student-Centered workshop co-presenter (with Juli Taylor, Julia Champe, and Dan Riordan), UW-Stout (June 2006).
14. Active learning strategies in the science classroom. University of Wisconsin Women in Science Opening Workshop for New Faculty in Math and Science, Oshkosh, WI (October 2005).
15. Engaging undergraduates in scholarly activities. Biology Department, UW-Oshkosh (June 2005).
16. Skill development in the college science classroom. University of Wisconsin Women in Science Curriculum Reform Institute, Wisconsin Dells, WI (June 2004).
17. Cooperative learning for science students. University of Wisconsin Women in Science Curriculum Reform

Institute, UW-Baraboo County (June 2003).

18. Skill building for science students. University of Wisconsin Women in Science Curriculum Reform Institute, UW-Madison (June 2002).
19. Cooperative case-based learning in the biology classroom. University of Wisconsin Women in Science Opening Workshop for New Faculty in Math and Science, UW-Madison (October 2002).
20. Types of learning: problem based, activity learning, and cooperative learning. Lessons Learned Teaching Seminar Series, UW-Stout (October 2002).
21. Hands-on minds-on teaching techniques. College Teaching Seminar, UW-Stout (November 2001).

RESEARCH

Funded through extramural grants, the goal of my scholarship is to understand student learning and development when students experience original, authentic research experiences. Together, we explore the genetic diversity and activity of microbes in nature. As a discipline-based education researcher (DBER), I employ apprenticeship and in-class training approaches, and compare these methods using scholarship of teaching and learning (SOTL) tools to better understand student learning and development.

RESEARCH EXPERIENCE

University of Wisconsin-Stout, Department of Biology, Menomonie, WI

Assistant, Associate, Full Professor (2000-present). Combining stable isotope, analytical chemistry, molecular biology, and metagenomics tools to study the active microbial species in aquatic environments. Training undergraduate research apprentices and classroom students. Studying student learning and development.

Michigan State University, Center for Microbial Ecology, East Lansing, MI

Postdoctoral Research Associate (1998-2000). Investigated key nitrogen cycle bacteria in marine sediments. Cultivated denitrifying bacteria, developed PCR-based tools to quantify gene expression, and studied functional gene diversity. Participated in an oceanographic research cruise on the Pacific Ocean near Baja California.

Netherlands Institute of Ecology, Centre for Limnology, Nieuwersluis, The Netherlands

Postdoctoral Research Associate (1996-1997). Investigated carbon and nitrogen cycling in freshwater sediments. Pioneered analysis of stable carbon isotopes in membrane lipids to study microbial activity, resulting in a publication in *Nature*.

Montana State University, Department of Microbiology, Bozeman, MT

Graduate Research Assistant (1992-1996). Investigated the activity and diversity of bacterial inhabiting microbial communities inhabiting Yellowstone hot springs. Characterized thermophilic bacteria, developed novel cultivation techniques, and studied the fate of photosynthetically fixed carbon.

University of Tennessee, Center for Environmental Biotechnology, Knoxville, TN

Senior Research Assistant (1990-1992). Performed membrane lipid analyses to investigate microbial communities from diverse aquatic and terrestrial habitats.

Fort Lewis College, Department of Biology, Durango, CO

Research Assistant (summers 1990, 1992). Researched ecosystem-scale effects of the 1988 fires on Yellowstone National Park plant communities.

Oak Ridge National Laboratory, Environmental Sciences Division, Oak Ridge, TN

Research Intern (1990). Used membrane lipid analysis to describe attached microbial communities in polluted and unpolluted stream ecosystems.

FEDERAL RESEARCH GRANTS (Principal Investigator)

- \$176,818** National Science Foundation (NSF) Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics, “TUES: Classroom Research to Invigorate Undergraduate STEM Education (CRIUSE)” (6/12-6/15)
- \$284,315** National Oceanographic and Atmospheric Administration (NOAA), Office of Ocean Exploration, “Exploration of Shallow and Deep Water Submerged Sinkhole Ecosystems in Thunder Bay National Marine Sanctuary, Lake Huron: Habitat and Life” **\$17,029** to UW-Stout, (5/08-4/10)
- \$246,565** NSF Microbial Interactions and Processes, “RUI: Collaborative Research: MIP: Lake Huron Sinkholes – Microbial Composition and Processes in Biogeochemical Hot Spots” **\$126,865** to UW-Stout, (9/06-9/08)
- \$5,959** REU Supplement to NSF MIP Grant (6/07-6/08)
- \$532,903** NSF CAREER and RUI Grant, “Capture probing to link methanotrophic species with ecological function in acidic northern wetlands” (1/01-1/06)
- \$12,400** REU Supplement to NSF CAREER Grant (9/02-5/03)

FEDERAL RESEARCH GRANTS (Senior Personnel)

- \$281,994** NSF Research Experiences for Undergraduates: “REU Site: RUI: Creating interdisciplinary research opportunities in phosphorus sustainability (CROPS)” (1/14-1/17). Helped write and administer this grant in collaboration with social scientists, economists, and ecosystem biologists.

CONTRACTS

- \$10,000** Molecular microbiological analysis of Muskegon River periphyton, Grand Valley State University (5/06)

UNIVERSITY OF WISCONSIN SYSTEM GRANT

- \$88,670** UW-Stout Laboratory and Classroom Modernization Grant (2/03)

UW-STOUT COLLABORATIVE GRANTS

- \$1,873** “Viral Diversity in Lake Menomin” UW-Stout Student Research Grant with Lauren Bryans, an undergraduate student (Spring 2012)
- \$10,000** “Phosphorous in the Red Cedar Basin: Establishing an interdisciplinary community of undergraduate scholars” UW-Stout Research Incubator Grant Proposal with Nels Paulson, Chris Ferguson (Social Sciences), and Amanda Little (Biology) (Summer 2012)

- \$10,000** “Phosphorous in the Red Cedar Basin: An interdisciplinary approach to a more sustainable community” UW-Stout Research Incubator Grant Proposal with Nels Paulson (Social Sciences) and Amanda Little (Biology) (Summer 2010)
- \$8,700** “Student-directed distributed lab management solutions” Faculty research initiative grant with Dr. Michael Pickart (Biology) and Dr. Don Cunningham (English) (1/07-12/07)
- \$25,000** “Bringing bioinformatics to UW-Stout through collaboration and industrial outreach” Chancellor’s Curriculum Improvement Grant with Dr. Michael Pickart (Biology), Dr. Marcia Miller-Rodeberg (Chemistry) and Dr. Steven Deckelman (Mathematics) (12/05-12/06)
- \$15,000** “Course development for a nanoscience concentration at UW-Stout” Chancellor’s Curriculum Improvement Grant with Dr. Forrest Schultz (Chemistry), and Dr. Rajiv Asthana (Engineering) (12/05-12/06)
- \$8,083** “What remains of the original diversity in relic prairie ecosystems?” Faculty Research Initiative Grant with Dr. Charles Bomar (Biology) (1/05-8/06)

\$1,550,954	Total External Funded Grants and Contracts
\$1,163,968	Total Internal and External Funded Grants and Contracts (to UW-Stout)
\$1,718,280	Overall Total Internal and External Funded Grants and Contracts

SUBMITTED PROPOSALS (Demonstrating depth of collaborations and current activity).

- \$424,850 UW System Growth Agenda Grant: “Linking Emerging Research with the Polytechnic Mission and the Economy of West-Central Wisconsin” (2/14). In collaboration with university and college administrators.
- \$297,885 NSF Research Experiences for Undergraduates: “REU Site: RUI: Creating interdisciplinary research opportunities in phosphorus sustainability (CROPS)” (9/12). In collaboration with social scientists, economists, and ecosystem biologists. Ranked 11 out of 10 proposals funded. Declined.
- \$1,662,193 NSF Dimensions of Biodiversity: “Dimensions: Collaborative Research: Linking Genetic, Taxonomic, and Functional Diversity in Modern Anoxygenic Cyanobacterial Mats Relevant to the Oxygenation of Ancient Earth”, \$203,981 to UW-Stout (3/12). In collaboration with University of Michigan and Grand Valley State University colleagues. Declined.
- \$1,006,241 NSF Dimensions of Biodiversity: “Dimensions: Collaborative Research: Linking Genetic, Taxonomic, and Functional Diversity in Modern Anoxygenic Cyanobacterial Mats Relevant to the Oxygenation of Ancient Earth”, \$141,410 to UW-Stout (3/11). In collaboration with University of Michigan and Grand Valley State University colleagues. Ranked within the top 8% of 117 total proposals submitted to this program. Declined.
- \$989,058 NSF Dynamics of Coupled Natural and Human Systems: “CNH:RUI: Dynamics of Social Networks, Decision Making, and Phosphorus Pollution: Identifying Healthy Feedbacks Among Natural and Human Systems” (12/10). In collaboration with social scientists, economists, and ecosystem biologists. Declined.
- \$193,401 NSF Transforming Undergraduate Education in STEM “TUES: Classroom Research to Invigorate Undergraduate STEM Education (CRIUSE)” (5/10). In collaboration with diverse faculty from UW-Stout. Declined.
- \$496,616 NOAA Office of Ocean Exploration (Steven Ruberg, P.I.): “Observatory for Submerged Sinkhole Ecosystems in Thunder Bay National Marine Sanctuary, Lake Huron” \$58,010 to UW-Stout, (10/05). In collaboration with NOAA-Great Lakes Environmental Research Laboratory and Grand Valley State

University colleagues. Declined.

- \$96,523 NSF Major Research Instrumentation: “MRI:RUI: Acquisition of Cell Imaging Equipment to Support Microbial Ecology and Cardiac Muscle Physiology Research Efforts” (1/03). In collaboration with Scott Zimmerman, UW-Stout faculty. Declined.
- \$409,949 NSF Major Research Instrumentation: “MRI:RUI: Acquisition of Molecular Biology, Cell Imaging, and Analytical Chemistry Equipment to Establish a Multidisciplinary Center for Undergraduate Research Experiences (CURE)” (1/02). In collaboration with Scott Zimmerman, UW-Stout faculty. Declined.
- \$8171 combined total, declined professional development and internal proposals.

POST-DOCTORAL SCHOLAR SUPERVISED

- Dr. Michele Zwolinski (2002-2004). Now Department Chair at Weber State University, Ogden, Utah.

UNDERGRADUATE RESEARCH APPRENTICESHIPS SUPERVISED

- 48 undergraduates at UW-Stout (complete listing of students and projects at the end of this document)

GRADUATE STUDENTS SUPERVISED

- 3 Master’s theses at UW-Stout (complete listing of students and projects at the end of this document)

INVITED RESEARCH PRESENTATIONS

1. *Underwater sinkholes: a portal to the Proterozoic*. North Central Branch meeting of the American Society for Microbiology, University of Wisconsin-La Crosse, La Crosse, WI (October 2015).
2. *Democratizing discovery: how all students can experience the thrill of original research*. UW-Madison, Madison, WI (June 2015).
3. *Stable isotopes and their use in microbial ecology*. University of Michigan, Ann Arbor, MI (January 2011).
4. *Microbes and mud in Lake Huron sinkholes: hot spots of biogeochemical activity*. Montana State University, Bozeman, MT (November 2008).
5. *Microbes and mud in Lake Huron sinkholes*. University of Minnesota-Duluth, Duluth MN (March 2008).
6. *When does diversity matter? Microbial species and ecosystem function in northern peatlands*. Annis Water Research Institute, Grand Valley State University, Muskegon, MI (December 2005).
7. *When is microbial diversity important?* University of Wisconsin-La Crosse, La Crosse, WI (December 2004).
8. *Bacteria can stop global warming? The improbable link between microbial community ecology and climate change*. Stevens Institute of Technology, Hoboken, NJ (October 2003).
9. *Bacteria that limit global warming: The physics, biology, and chemistry of methane oxidizing bacteria from northern peatlands*. University of Wisconsin-Stevens Point, Stevens Point, WI (March 2003).
10. *Novel enzymes from thermophilic bacteria*. American Museum of Natural History, New York City (April 1998).
11. *Microbial community structure exposed: Associating biodiversity with physiology in aquatic habitats*. University of Aarhus, Aarhus, Denmark (November 1997).
12. *Identifying microbial populations associated with microbial activity in a hot spring microbial mat*

community. University of Groningen, Groningen, The Netherlands (April 1997).

13. *Hot water, photosynthesis, and carbon flow: Evidence for a highly active but slowly growing microbial community.* Max-Planck-Institut für Marine Mikrobiologie, Bremen, Germany (December 1996).

PUBLICATIONS

A. Original Peer-Reviewed Articles (*indicates supervised student author, †indicates data generated by students in classroom laboratories)

Citation Impact Factor [(# citations)/#articles] = **75.4** (11/2019); *Web of Science*® h-index = **17**

1. A.A. Voorhies, B.A. Biddanda, J.D. Cavalcoli, S. Jain, **S.C. Nold** and G.J. Dick. Metagenomic and metatranscriptomic insights into the partitioning of biogeochemical functions in a low-O₂ cyanobacterial mat community. *In press*.
2. **S.C. Nold**, M.J. Bellecourt,* S.C. Kendall, S.A. Ruberg, T.G. Sanders, J.V. Klump and B.A. Biddanda. 2013. Underwater sinkhole sediments sequester Lake Huron's carbon. *Biogeochemistry* 115:235-250.
3. A.A. Voorhees, B.A. Biddanda, S.A. Kendall, J. Sunit, D.N. Marcus, **S.C. Nold**, N. Sheldon and G.J. Dick. 2012. Cyanobacterial life and low O₂: Community genomics and function reveal extremely low diversity and metabolic versatility of a benthic cyanobacterial mat. *Geobiology* 10(3):250-267.
4. B.A. Biddanda, **S.C. Nold**, G. J. Dick, S. T. Kendall, J. H. Vail, S. A. Ruberg and C. M. Green. 2012. Rock, water, microbes: Underwater sinkholes in Lake Huron are habitats for ancient microbial life. *Nature Education Knowledge* 3(3):5.
5. A. Steinman, M.E. Ogdahl, K. Wessel, B.A. Biddanda, S.C. Kendall and **S.C. Nold**. 2011. Periphyton response to simulated nonpoint source pollution: local over regional control. *Aquatic Ecology* 45(4):439-454.
6. T.G. Sanders, B.A. Biddanda, C.A. Stricker and **S.C. Nold**. 2011. Benthic macroinvertebrate and fish communities in Lake Huron are linked to submerged groundwater vents. *Aquatic Biology* 12:1-11.
7. **S.C. Nold**, J.B. Pangborn,* H.A. Zajack,* S.C. Kendall, R. Rediske and B.A. Biddanda. 2010. †Benthic bacterial diversity in submerged sinkhole ecosystems. *Applied and Environmental Microbiology* 76:347-351.
8. **S.C. Nold**, H.A. Zajack* and B.A. Biddanda. 2010. †Archaeal and Eukaryal diversity in a submerged sinkhole ecosystem influenced by sulfur-rich, hypoxic groundwater. *Journal of Great Lakes Research* 36:366-375.
9. B.A. Biddanda, **S.C. Nold**, S.A. Ruberg, S.T. Kendall, T.G. Sanders and J.J. Gray. 2009. Submerged sinkhole ecosystems in the Laurentian Great Lakes: A microbiogeochemical frontier. *Eos, Transactions of the American Geophysical Union* 90:61-62.
10. S.A. Ruberg, S.T. Kendall, B.A. Biddanda, T. Black, W. Lusardi, R. Green, T. Casserley, E. Smith, **S.C. Nold**, T.G. Sanders, G. Lang and S. Constant. 2008. Observations of the Middle Island sinkhole in Lake Huron: a unique hydrologic and glacial creation of 400 million years. *Marine Technology Society Journal* 42:12-21.
11. X. Liu, S.M. Tiquia, G. Holguin, L. Wu, **S.C. Nold**, A.H. Devol, A.V. Palumbo, J.M. Tiedje and J. Zhou. 2003. Molecular diversity of denitrifying genes in continental margin sediments within the oxygen deficient zone off the Pacific Coast of Mexico. *Applied and Environmental Microbiology* 69:3549-3560.
12. V. Grüntzig,* **S.C. Nold**, J. Zhou and J.M. Tiedje. 2001. *Psuedomonas stutzeri* nitrite reductase gene

abundance in environmental samples measured by real time PCR. Applied and Environmental Microbiology **67**:760-768.

13. **S.C. Nold**, J. Zhou, A.H. Devol and J.M. Tiedje. 2000. Pacific northwest marine sediments contain ammonia-oxidizing bacteria in the β subdivision of the *Proteobacteria*. Applied and Environmental Microbiology **66**:4532-4535.
14. **S.C. Nold**, H.T.S. Boschker, R. Pel and H.J. Laanbroek. 1999. Ammonium addition inhibits ^{13}C -methane incorporation into methanotroph membrane lipids in a freshwater sediment. FEMS Microbial Ecology **29**:81-99.
15. G. Zwart, W.D. Hiorns, B.A. Methe, M.P. van Agterveld, R. Huismans, **S.C. Nold**, J.P. Zehr and H.J. Laanbroek. 1998. Nearly identical 16S rRNA sequences recovered from lakes in North America and Europe indicate the existence of clades of globally distributed freshwater bacteria. Systematic and Applied Microbiology **21**:546-556.
16. D.M. Ward, M.J. Ferris, **S.C. Nold** and M.M. Bateson. 1998. A natural view of microbial biodiversity within hot spring cyanobacterial mat communities. Microbiology and Molecular Biology Reviews **62**:1353-1370.
17. **S.C. Nold** and G. Zwart. 1998. Patterns and governing forces in aquatic microbial communities. Aquatic Ecology **32**:17-35.
18. H.T.S. Boschker, **S.C. Nold**, P. Wellsbury, D. Bos, W. de Graaf, R. Pel, R.J. Parkes and T.E. Cappenberg. 1998. Direct linking of microbial populations to specific biogeochemical processes by ^{13}C labelling of biomarkers. Nature **392**:801-805.
19. M.J. Ferris, **S.C. Nold**, N.-P. Revsbech and D.M. Ward. 1997. Population structure and physiological changes within a hot spring microbial mat community following disturbance. Applied and Environmental Microbiology **63**:1367-1374.
20. D.M. Ward, C.M. Santegoeds, **S.C. Nold**, N.B. Ramsing, M.J. Ferris and M.M. Bateson. 1997. Biodiversity within hot spring microbial mat communities: molecular monitoring of enrichment cultures. Antonie van Leeuwenhoek **71**:143-150.
21. **S.C. Nold** and D.M. Ward. 1996. Photosynthate partitioning and fermentation in hot spring microbial mat communities. Applied and Environmental Microbiology **62**:4598-4607.
22. **S.C. Nold**, E.D. Kocczynski and D.M. Ward. 1996. Cultivation of aerobic chemoorganotrophic proteobacteria and gram-positive bacteria from a hot spring microbial mat. Applied and Environmental Microbiology **62**:3917-3921.
23. C.M. Santegoeds,* **S.C. Nold** and D.M. Ward. 1996. Denaturing gradient gel electrophoresis used to monitor the enrichment culture of aerobic chemoorganotrophic bacteria from a hot spring cyanobacterial mat. Applied and Environmental Microbiology **62**:3922-3928.
24. C.C. Steward, **S.C. Nold**, D.B. Ringelberg, D.C. White and C.R. Lovell. 1996. Microbial biomass and community structures in the burrows of bromophenol producing and non-producing marine worms and surrounding sediments. Marine Ecology Progress Series **133**:149-165.
25. **S.C. Nold**, and D.M. Ward. 1995. Diverse *Thermus* species inhabit a single hot spring microbial mat. Systematic and Applied Microbiology **18**:274-278.
26. G.E. Napolitano, W.R. Hill, J.B. Guckert, A.J. Stewart, **S.C. Nold** and D.C. White. 1994. Changes in periphyton fatty acid composition in chlorine polluted streams. Journal of the North American Benthological Society **13**:237-249.
27. L.W. Lackey, T.J. Phelps, V. Korde, **S.C. Nold**, D.B. Ringelberg, P.R. Bienkowski and D.C. White. 1994.

Feasibility testing for the on-site bioremediation of organic wastes by native microbial consortia. International Biodeterioration and Biodegradation **33**(1):41-59.

28. J.B. Guckert, **S.C. Nold**, H.L. Boston and D.C. White. 1992. Periphyton response in an industrial receiving stream: lipid based physiological stress analysis and pattern recognition of microbial community structure. Canadian Journal of Fisheries and Aquatic Sciences **49**:2579-2587.

B. Chapters in Edited Books

1. M.J. Ferris, **S.C. Nold**, C.M. Santegoeds and D.M. Ward. Examining bacterial population diversity within the Octopus Spring microbial mat community. pp. 51-64. *In* Thermophiles: Biodiversity, Ecology, and Evolution. A.-L. Reysenbach, M. Voytek, and R. Mancinelli, eds. Kluwer academic/Plenum Publishers, New York, 2001.
2. D.M. Ward, M.J. Ferris, **S.C. Nold**, M.M. Bateson, E.D. Kopczynski and A.L. Ruff-Roberts. 1994. Species diversity in hot spring microbial mats as revealed by both molecular and enrichment culture approaches - relationship between biodiversity and community structure. *In* Microbial Mats: Structure, Development and Environmental Significance. L.J. Stal and P. Caumette, eds. Series G: Ecological Sciences, **35**:33-44. NATO/ASI series, Springer-Verlag, Heidelberg.

C. Published Abstracts (Currently 74 for regional, national, and international scientific meetings; 42 with student authors, 35 UW-Stout undergraduates. Complete list at the end of this document.)

D. Manuscripts in Preparation

1. **S.C. Nold** and S.D. McGovern. Authentic research experiences in the college science classroom. (Introduces classroom-based research with a focus on publication of student results.) *Essay* for CBE Life Sciences Education.
2. **S.C. Nold** and S.D. McGovern. Classroom-based research experiences: key elements for success. (Shares research results of a study identifying the essential elements of the student research experiences that are highly impactful.) *Research and Teaching* section of Journal of College Science Teaching.
3. **S.C. Nold** and M.J. Pickart (Concordia University Milwaukee). Scaffolding research experiences throughout a four-year curriculum. (Describes a comprehensive approach for training undergraduate student researchers.) *Essay* for CBE Life Sciences Education.

COLLABORATIONS AND OTHER AFFILIATIONS

Major Collaborators

Gregory Dick, Ph.D., University of Michigan (bioinformatics and metagenomics)
Alan Steiman, Ph.D. Annis Water Resources Institute (stream periphyton activity)
Bopaiah Biddanda, Ph.D. Grand Valley State University (freshwater microbial ecology)
Eric Boschker, Ph.D., Netherlands Institute of Ecology (stable isotope biogeochemistry)
Allan Devol, Ph.D., University of Washington (physical and biological oceanography)
Jizhong Zhou, Ph.D., Oak Ridge National Laboratory (environmental genomics)
Gabriel Zwart, Ph.D., Netherlands Institute of Ecology (microbial distributional ecology)
Michele Zwolinski, Ph.D., Weber State University (scholarship of teaching)

Graduate and Postdoctoral Advisors

James Tiedje, Ph.D., Michigan State University (Postdoctoral Advisor)
Riks Laanbroek, Ph.D., Netherlands Institute of Ecology (Postdoctoral Advisor)

David Ward, Ph.D., Montana State University (Ph.D. Advisor)
David C. White, Ph.D., University of Tennessee (Research Supervisor, deceased)

PROFESSIONAL SERVICE

I serve many organizations, providing intellectual contributions at local, regional, and national levels. My overall goal is to improve the quality of science in my field and the quality of science education.

SERVICE ACTIVITIES

National

Editorial Boards

- Editorial Board, *Journal of Microbiology and Biology Education* (2012-present).
- Editorial board, *Journal of Microbiological Methods* (2002-2006).

K-12 Science Outreach

- Co-director, National Science Olympiad National Tournament (2016).

Grant Proposal Reviews

- Council for International Exchange of Scholars peer reviewer for the Fulbright Specialist Program in Biology Education (2011-2013).
- National Science Foundation Advisory Panel, Course, Curriculum, and Laboratory Improvement Program (July 2008).
- National Science Foundation Advisory Panel, Microbial Interactions and Processes Program (February 2007).
- National Institute of Environmental Health Sciences Advisory Panel, Exploratory and Developmental Research Program (Summer 2003).
- Special Assessment of Broader Impacts in National Science Foundation Proposals, Biogeochemistry Program (Spring 2003, 2004).
- National Science Foundation Advisory Panel, Ecology Program (Spring 2002).
- Ad-hoc reviewer for numerous National Science Foundation proposals.

Academic Peer Review

- Microbiology Department External Program Reviewer, Weber State University (March 2013).
- Abstract Review Committee, American Society for Microbiology Conference for Undergraduate Educators (2012, 2013, 2014 meetings).
- Ad-hoc reviewer for scientific journals including *Environmental Microbiology*, *Applied and Environmental Microbiology*, *Microbial Ecology*, *FEMS Microbial Ecology*, *American Mineralogist*, *Aquatic Ecology*, and *Limnology and Oceanography*, *Soil Biology and Biochemistry*.

Regional

- Wisconsin Science Olympiad Board Member (2004-2018).

- Cell Biology, Biotechnology, and Geocaching Event Coordinator, Wisconsin Science Olympiad (2001-2006).
- Judge, student research presentations, (October 2001), North Central Branch of the American Society for Microbiology 61st Annual Meeting, UW-LaCrosse.

University

- All University Promotion Committee – Full Professor (elected, Fall 2017).
- Faculty Senator (Fall 2017-present)
- General Education Committee representing Analytical Reasoning and Natural Science (January 2016-May 2018).
- School of Science model generation committee (Spring 2015).
- Defining UW-Stout as an Emerging Research Institution Committee (Fall 2013). Compiled committee ideas and wrote the report that was forwarded to the Chancellor.
- Termination of Employment Committee (alternate, 2012; permanent 2013-present).
- Research Misconduct Hearing Committee (2012).
- College Level Promotions Committee (2011).
- Educational Activities Committee (2008-2010).
- Program Assessment Institute (June 2007).
- Polytechnic Definition Committee (November 2006).
- Learning Community steering Committee (2006-2010).
- Interdisciplinary Science Think Tank (Summer 2006).
- Provost Search and Screen Committee (Spring 2006).
- New Science Building Visioning Committee (Summer 2005).
- E-Scholar Assessment Council (2005-2006).
- Nanotechnology Committee (2004-2005).
- Research Advisory Council (2004-2007).
- NSSE Review Committee (2004).
- Faculty Senator (2005-2008).
- Full Member, Graduate Faculty (Initiated 2001).
- Indirect Cost Recommendation Team (2002). Supported an indirect cost allocation plan that increases revenue while rewarding colleges, departments, and PIs who obtain grants.
- College Level promotions Committee (2000).

Department

- Chair, Cell and Molecular Biology Hiring Committee (Fall 2017).
- Chair, Biotechnology Hiring Committee (Fall 2008).

- Chair, Biology Department Hiring Committee (Spring 2007).
- Coordinator, Applied Science Learning Community (2006-2008).
- Biology Department Access to Learning Committee Chair (Spring 2006-present).
- Coordinator, Applied Science E-portfolio Project (2005-2006).

Civic Community

- BSA Troop 103 Assistant Scoutmaster for high adventure programming (2007-2015).
- Coach, Elementary School Science Olympiad, St. Joseph's School (2007-2010).
- St. Joseph's Parish Folk Singing Group (2001-2004).

INVITED SERVICE PRESENTATIONS

- Developing great ideas into a grant proposal: How do I get money to do the things I want to do? Professional Development Week, UW-Stout (January 2013).
- Red Cedar watershed community of learners. Professional Development Week, UW-Stout (January 2010).
- Fall 2004 new instructor learning community facilitator. Professional Development Week, UW-Stout (January 2005).
- Undergraduates in the research laboratory: Hands-on experiences at UW-La Crosse and UW-Stout. Professional Development Week, UW-Stout (January 2002).
- Ethical issues in cloning human lives and tissues. Center for Ethics, UW-Stout (September 2001).
- Who wants to be a millionaire? Successful grant writing. UW-Stout Professional Development Week (January 2001).

PROFESSIONAL SOCIETY MEMBERSHIPS

- Society for the Advancement of Biology Education Research (SABER) since 2012.
- American Society for Microbiology (Division W, Microbiology Education) since 1991.
- International Society for Microbial Ecology since 1998.
- American Society for Limnology and Oceanography 2008.
- International Association for Great Lakes Research 2010.

CONTINUOUS PROFESSIONAL DEVELOPMENT

1. Leadership Academy, UW-Stout (Spring 2016).
2. Biology Scholars Transitions Residency, Sharing SOTL Results in the Peer-Reviewed Literature, American Society for Microbiology, Washington, DC (July 2012-June 2013).
3. Biology Scholars Research Residency, Scholarship of Teaching and Learning, American Society for Microbiology, Washington, DC (August 2010-June 2011).
4. National Summer Institute on Learning Communities, Evergreen College, WA (June 2006).

5. American Society for Microbiology Conference for Undergraduate Educators, "Incorporating Genomics and Bioinformatics into your Courses" Orlando, FL (May 2006).
6. National Center for Case Studies Summer Workshop participant, SUNY-Buffalo (June 2002).
7. Cooperative Learning Institute participant, "Advanced Cooperative Learning" (August 2001).
8. Cooperative Learning Institute participant, "Cooperative Learning Strategies in the College Classroom" (July 1999).

PUBLISHED ABSTRACTS This list does not include the many student research posters presented at the UW-Stout Research Day and the UW-Stout STEM Student Expo because proceedings from these conferences are not published.

1. K. Gilland, E. Makina, and **S.C. Nold**. July 2019. Scientific Literacy and interdisciplinary thinking via embedded research in a non-majors environmental science course. Society for the Advancement of Biology Education Research (SABER) national meeting. Poster Presentation.
2. *N.A. Loeven and **S.C. Nold**. April 2016. River flow impacts cyanobacterial growth on Tainter Lake. National Conference on Undergraduate Research, Asheville, North Carolina. Poster Presentation.
3. **S.C. Nold** and S. McGovern. July 2014. Assessment of scientific thinking skills in research-intensive undergraduate classrooms. Society for the Advancement of Science Education Research (SABER) Annual Meeting, Minneapolis, MN. Poster Presentation.
4. **S.C. Nold**. March 2014. Using the VASI to assess scientific thinking skills in research-intensive and traditional classroom settings. Course-based Undergraduate Research Experiences Network (CURENET) meeting, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY. Poster Presentation.
5. **S.C. Nold**. July 2013. Key Elements of Classroom-Based Research Experiences Vary Between Student Populations. Society for the Advancement of Science Education Research (SABER) Annual Meeting, Minneapolis, MN. Poster Presentation.
6. **S.C. Nold**. January 2013. Classroom-based authentic research promotes student learning and development. Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics (TUES) program PI conference, Washington, DC. Poster Presentation.
7. S.A. Ruberg, B.A. Biddanda, T. Black, M. Baskaran, R. Green, N. Hawley, T. Johengen, V. Klump, **S.C. Nold**, S. T. Kendall, R. Paddock. Feb 2012. Advances in the exploration of shallow and deep water submerged sinkhole ecosystems in the Thunder Bay National Marine Sanctuary. Ocean Sciences Annual Meeting, Salt Lake City, Utah. Oral Presentation.
8. **S.C. Nold**. June 2011. Student learning and development is enhanced by research experiences in the classroom. American Society for Microbiology Conference for Undergraduate Educators, Baltimore, MD. Poster Presentation.
9. J. Lucchessi*. April 2011. Nitrogen fixation genes in a hypereutrophic lake. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Poster presentation.
10. L. Bryans*. April 2011. Diversity of Ribulose Bisphosphate Carboxylase genes in Lake Menomin, Menomonie, WI. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Poster presentation.
11. M. Gillette*. April 2011. Cyanobacteria in the Red Cedar watershed contain an extremely low diversity of

- Microcystin genes. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Poster presentation.
12. K. Zoua*. April 2011. Cyanobacterial *mcyA* and *mcyB* gene diversity in the Red Cedar Watershed. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Poster presentation.
 13. A.A. Voorhies, B.A. Biddanda, S.T. Kendall, **S.C. Nold**, and G.J. Dick. February 2011. Metagenomic analysis of cyanobacterial mats performing metabolically versatile photosynthesis in low-oxygen sinkholes. Ventura, CA. Poster Presentation.
 14. **S.C. Nold**, M.J. Bellecourt, B.A. Biddanda, S.T. Kendall, S.A. Ruberg, T.G. Sanders and J.V. Klump. May 2010. Lacustrine submerged sinkhole sediments are a sink for organic carbon. International Association for Great Lakes Research Annual Conference, Toronto, ON. Oral presentation.
 15. S.T. Kendall, B.A. Biddanda, S.A. Ruberg, **S.C. Nold**, R Green, W. Lusardi, T. Casserly, and S. Newman. May 2010. Production and Respiration of microbial mats in the groundwater layer of submerged sinkholes in Lake Huron. International Association for Great Lakes Research Annual Conference, Toronto, ON. Poster presentation.
 16. A.A. Voorhies, B.A. Biddanda, N. Horne, S.T. Kendall, **S.C. Nold**, S.A. Ruberg, and G. Dick. June 2010. Anoxygenic cyanobacterial mats from Lake Huron's sinkholes: Analogs of proterozoic ecosystems. Goldschmidt Conference 2010: Earth, Energy, and the Environment. Knoxville, TN. Oral Presentation
 17. B.A. Biddanda, S.A. Ruberg, S.T. Kendall, **S.C. Nold**, and N. Hawley. December 2009. Rock, water, critters: Lake Huron's groundwater-fueled submerged sinkhole ecosystems. American Geophysical Union Fall Meeting, San Francisco, CA. Invited oral presentation.
 18. C.R. Bomar and **S.C. Nold**. July 2009. Grasshopper phylogeny: Bringing exploration to science education. 10th International Conference of the Orthopterist's Society, Ankara, Turkey. Poster presentation.
 19. R. Paddock, M. Baskaran, B. Biddanda, **S.C. Nold**, S. Ruberg, and V. Klump. May 2009. Sediment accumulation in the Middle Island Sinkhole, Thunder Bay National Marine Sanctuary, Lake Huron. 52nd annual Conference on Great Lakes Research, International Association for Great Lakes Research, Toledo, OH. Poster Presentation.
 20. **S.C. Nold**, B.A. Biddanda, and S.A. Ruberg. January 2009. Karst sinkholes in Lake Huron are biologically diverse carbon sinks for pelagic production. Abstracts, American Society for Limnology and Oceanography Aquatic Sciences Meeting, Nice, France. Poster presentation.
 21. N. Maier*, B.A. Biddanda, and **S.C. Nold**. June 2008. Lipid profiles from Lake Huron sinkholes correspond to 16S rDNA and DNA-based community profiles, Abstracts, General Meeting of the American Society for Microbiology, Boston, MA. Poster presentation.
 22. M.J. Bellecourt*, B.A. Biddanda, S.A. Ruberg, and **S.C. Nold**. June 2008. $\delta^{13}\text{C}$ of sedimentary carbon in Lake Huron sinkholes suggests planktonic, not benthic production, Abstracts, General Meeting of the American Society for Microbiology, Boston, MA. Poster presentation.
 23. J.B. Pangborn*, H.A. Zajack*, B.A. Biddanda, and **S.C. Nold**. June 2008. Photosynthetic mats and surface sediments in Lake Huron sinkholes contain *cyanobacteria* related to Antarctic clones and sulfate reducing *Proteobacteria* Abstracts, General Meeting of the American Society for Microbiology, Boston, MA. Poster presentation.
 24. H.A. Zajack*, B.A. Biddanda, and **S.C. Nold**. June 2008. Lake Huron sinkholes display high archaeal and eukaryotic diversity, Abstracts, General Meeting of the American Society for Microbiology, Boston, MA. Poster presentation.
 25. J. B. Pangborn*. April 2008. Photosynthetic Mats and Surface Sediments in Lake Huron Sinkholes

- Contain *Cyanobacteria* Related to Antarctic Clones and Sulfate Reducing *Proteobacteria*. UW System Conference on Undergraduate Research and Creative Activity, UW-River Falls. Poster presentation.
26. N. Maier*. April 2008. Characterizing Lake Huron Sinkhole Microbial Communities through PLFA Profiles. UW System Conference on Undergraduate Research and Creative Activity, UW-River Falls. Oral presentation.
 27. M. Bellecourt*. April 2008. Source of Sedimentary Carbon in Lake Huron Sinkholes: Planktonic Production, not Benthic. UW System Conference on Undergraduate Research and Creative Activity, UW-River Falls. Poster presentation.
 28. T. G. Sanders, B.A. Biddanda, S. T. Kendall, E. A. Strickler, N. Ostrom, C. Stricker, and **S.C Nold**. May 2008. An ecological and stable isotope study of food web linkages in submerged vent ecosystems of Lake Huron. 51st annual Conference on Great Lakes Research, International Association for Great Lakes Research, Peterborough, Ontario. Poster Presentation.
 29. Bopaiah A. Biddanda, Scott T. Kendall, T. Garrison Sanders, **S.C. Nold**. May 2008. Submerged Sinkhole Ecosystems of Lake Huron: Insights into System Metabolism. 51st annual Conference on Great Lakes Research, International Association for Great Lakes Research, Peterborough, Ontario. Poster Presentation.
 30. M. Seeger*. April 2007. ARISA applications in freshwater studies. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Oral presentation.
 31. J.B. Pangborn*. April 2007. Lake Huron Sinkhole Ecosystems. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Oral presentation.
 32. J. Berkebile*. April 2007. Membrane lipids of bacteria in the Muskegon River watershed. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Oral presentation.
 33. N. Maier*. April 2007. Effects of anthropogenic eutrophication on the Muskegon River watershed. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Poster presentation.
 34. M. Zemke*. April 2007. Analysis of Muskegon River watershed samples by ARISA profiling. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Poster presentation.
 35. H. Zajack*. April 2007. Microbial community composition in fresh water sinkholes of Lake Huron. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Poster presentation.
 36. M. Bellecourt*. April 2007. Stable carbon isotope analysis of Lake Huron sinkhole habitats. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Poster presentation.
 37. S. Webb* and A. Dillon*. April 2007. Photosynthetic bacteria in Lake Huron sinkhole ecosystems. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Poster presentation.
 38. C. Meier* and T. Joshi*. April 2007. Study of genetic diversity in sediments of Lake Huron sinkholes. UW System Conference on Undergraduate Research and Creative Activity, UW-Stout. Poster presentation.
 39. Biddanda, B.A. and **S.C. Nold**. March 2007. Lake Huron sinkholes-microbial hotspots. Microbial Observatories-Microbial Interactions and Processes Workshop, National Science Foundation, Arlington, VA. Poster presentation.
 40. B.J. Hurtgen*, L.A. Stodola*, C.R. Bomar, and **S.C. Nold**. August 2005. Molecular and morphological analysis of the red-legged grasshopper, *Melanoplus femurrubrum* (De Geer) within relic and restored prairies in Wisconsin, USA. 9th International Conference of the Orthopterist's Society, Canmore, Alberta, Canada. Poster presentation.
 41. **S.C. Nold**. Bacterial abundance and diversity in northern peatlands. September 2004. Science and the Northwoods Conference, Boulder Junction, WI. Oral presentation.

42. **S.C. Nold**, M.D. Zwolinski and J. Keller. 2004. When is microbial diversity important? Abstracts, 10th International Symposium on Microbial Ecology, Cancun, Mexico. Oral presentation.
43. **S.C. Nold**, M.D. Zwolinski, and S.D. Zimmerman. October 2004. Skill development in the science classroom: A website to promote student skills. International Society for the Scholarship of Teaching and Learning Inaugural Conference, Bloomington, Indiana. Oral presentation.
44. **S.C. Nold**. 2004. Focusing on students at a smaller public institution. NSF Career Conference, Washington, D.C. Oral and poster presentations.
45. M.D. Zwolinski and **S.C. Nold**. 2004. Identification of methane oxidizing bacteria populations in acidic peatlands using stable isotope probing and phospholipid analysis. Abstracts, 10th International Symposium on Microbial Ecology, Cancun, Mexico. Oral presentation.
46. M.D. Zwolinski, T.L. Campbell*, B.M. Miller*, M.D. Holtan*, and **S.C. Nold**. 2004. Stable isotope probing reveals type II methanotrophs are abundant and active in peat soil enrichment cultures. Abstracts, General Meeting of the American Society for Microbiology, New Orleans, LA. Poster presentation.
47. M.D. Holtan*, J.B. Kane* and **S.C. Nold**. 2004. ¹³C Incorporation into nucleic acid links bacterial species to carbon source. Abstracts, General Meeting of the American Society for Microbiology, New Orleans, LA. Poster presentation.
48. M.D. Zwolinski and **S.C. Nold**. May 2004. Building small-group social skills in college classrooms. American Society for Microbiology Conference for Undergraduate Educators, New Orleans, LA. Poster presentation.
49. **S.C. Nold** and M.D. Zwolinski. May 2004. Skill stations develop student skills in the science classroom. American Society for Microbiology Conference for Undergraduate Educators, New Orleans, LA. Poster presentation.
50. **S.C. Nold**, L.C. Schultz*, and B.M. Miller*. 2003. Methane oxidizing bacterial species vary with nutrient status in Northern Peatlands. Abstracts, General Meeting of the American Society for Microbiology, Washington, D.C. Poster presentation.
51. J.B. Kane* and **S.C. Nold**. 2003. Measurement of stable carbon isotope incorporation into nucleic acids from diverse bacterial genera. Abstracts, General Meeting of the American Society for Microbiology, Washington, D.C. Poster presentation.
52. L.C. Schultz* and **S.C. Nold**. Comparison of protein profiles from different methane-oxidizing bacterial lineages. UW-Stout Student Research Day. April 2003. Award-winning poster presentation.
53. M. Holtan*, M.D. Zwolinski, and **S.C. Nold**. Gas Chromatography to analyze methanotrophy in enrichment cultures. UW-Stout Student Research Day. April 2003. Oral presentation.
54. J.B. Kane* and **S.C. Nold**. Bacteria are what they eat. UW-Stout Student Research Day. April 2003. Poster presentation.
55. B.M. Miller* and **S.C. Nold**. Community composition of methane-oxidizing bacteria in northern peatlands is determined by nutrient status. UW-Stout Student Research Day. April 2003. Poster presentation.
56. T.L. Campbell*, C.R. Bomar and **S.C. Nold**. Development of molecular tools to study the mobility of grasshopper populations. April 2003. UW-Stout Student Research Day. Poster presentation.
57. J.B. Kane* and **S.C. Nold**. Incorporation of ¹³C into chemoorganotrophic bacterial DNA is consistent among bacterial genera. UW System Symposium for Undergraduate Research and Creative Activity. April 2003. Poster presentation.
58. B.M. Miller* and **S.C. Nold**. Trophic status determines methane-oxidizing bacterial community

composition in northern peatlands. UW System Symposium for Undergraduate Research and Creative Activity. April 2003. Poster presentation.

59. J.B. Kane* and **S.C. Nold**. 2002. Extraction of DNA from aerobic chemoorganotrophic and methane oxidizing bacteria. Abstracts, Annual Meeting of the North Central Branch of the American Society for Microbiology, La Crosse, WI. Poster presentation.
60. Schultz, L.C.* and **S.C. Nold**. 2002. Sequence diversity of methane-oxidizing bacteria in northern peatlands. Abstracts, General Meeting of the American Society for Microbiology, Salt Lake City, UT. Poster presentation.
61. Schultz, L.C.* and **S.C. Nold**. 2002. Sequence diversity of methane oxidizing bacteria in northern peatlands. Abstracts, 16th National Conference on Undergraduate Research, Whitewater, WI. Poster presentation.
62. **S.C. Nold**, T.M. Large*, B. O'Meara*, J. Zhou, A.H. Devol, and J.M. Tiedje. 2001. Community structure of nitrogen cycle bacteria in oxygen deficient marine sediments from the Mexican continental margin. Abstracts, 9th International Symposium on Microbial Ecology, Amsterdam, The Netherlands.
63. Large, T.M.*, **S.C. Nold**, and J.M. Tiedje. 2000. Community structure of nitrogen cycle bacteria in oxygen deficient marine sediments from the Mexican continental margin. Abstracts, Department of Energy Biological Inventory Ocean Margins Project Workshop, Tallahassee, FL. Poster presentation.
64. Grüntzig, V.*, **S.C. Nold** and J.M. Tiedje. 2000. Quantifying functional genes in the environment using real time PCR. Abstracts. Department of Energy BI-OMP Project. Workshop, Tallahassee, FL. Poster presentation.
65. Large, T.M.*, **S.C. Nold** and J.M. Tiedje. 2000. Distribution of nitrogen cycle bacteria in marine sediments. Michigan State University Undergraduate Research and Creative Activity Forum. Poster presentation.
66. Grüntzig, V.*, **S.C. Nold** and J.M. Tiedje. 2000. *Pseudomonas stutzeri* nitrite reductase gene abundance in environmental samples measured by real time PCR. Abstracts, General Meeting of the American Society for Microbiology, Chicago, IL. Poster presentation.
67. **S.C. Nold** and J.M. Tiedje. 1999. β -*Proteobacteria* Dominate marine sediment nitrifying communities. Abstracts, ASM Conference on Microbial Biodiversity, Chicago, IL. Poster presentation.
68. **S.C. Nold**, Pel, R., Boschker, H.T.S. and H.J. Laanbroek. 1998. Ammonium inhibition of methane incorporation into methanotroph-specific membrane lipids. Abstracts, Eighth International Symposium on Microbial Ecology, Halifax, NS. Poster presentation.
69. Zwart, G., Hiorns, W.D., Methe, B.A., van Agterveld, M.P., Huismans, R., **S.C. Nold**, Zehr, J.P., and H.J. Laanbroek. 1998. Cosmopolitan freshwater bacteria. Abstracts, Eighth International Symposium on Microbial Ecology, Halifax, NS. Poster presentation.
70. **S.C. Nold**, and D.M. Ward. 1996. Fate of photosynthetically fixed carbon in hot spring cyanobacterial mat communities. Abstracts, General Meeting of the American Society for Microbiology, New Orleans, LA. Poster presentation.
71. **S.C. Nold**, and D.M. Ward. 1995. Photosynthetically active hot spring cyanobacterial mat populations do not actively incorporate CO₂ into ribosomal RNA. Conference on Biodiversity, Ecology and Evolution of Thermophiles in Yellowstone National Park: Overview and Issues, Old Faithful, Yellowstone National Park. Poster presentation.
72. Ferris, M.J., **S.C. Nold**, Santegoeds, C.M.*, Bateson, M.M., and D.M. Ward. 1995. Biodiversity in the Octopus Spring microbial mat community as measured by extincting-dilution enrichment culture and denaturing gradient gel electrophoresis of PCR-amplified 16S rRNA genes. Conference on Biodiversity, Ecology and Evolution of Thermophiles in Yellowstone National Park: Overview and Issues, Old Faithful,

Yellowstone National Park. Poster presentation.

73. C.M. Santegoeds,* **S.C. Nold**, and D.M. Ward. 1995. Denaturing gradient gel electrophoresis reveals the effect of incubation conditions on the outcome of enrichment culture. Conference on Biodiversity, Ecology and Evolution of Thermophiles in Yellowstone National Park: Overview and Issues, Old Faithful, Yellowstone National Park. Poster presentation.
74. **S.C. Nold** and D.M. Ward. 1995. Photosynthetically active hot spring cyanobacterial mat populations do not actively incorporate CO₂ into ribosomal RNA. Abstracts, General Meeting of the American Society for Microbiology, Washington, D.C. Poster presentation.
75. **S.C. Nold** and D.M. Ward. 1994. Cultivation and characterization of aerobic chemoorganotrophic bacteria from a hot spring microbial mat. Abstracts, General Meeting of the American Society for Microbiology, Las Vegas, NV. Poster presentation.
76. Ward, D.M., Bateson, M.M., Ferris, M.J., and **S.C. Nold**. 1994. Small subunit ribosomal RNA analysis of the species composition of hot spring microbial mat communities. NASA Fifth Symposium on Chemical Evolution and the Origin and Evolution of Life, Palo Alto, CA.
77. Napolitano, G.E., Hill, W.R., Stewart, A.J., Guckert, J.B., **S.C. Nold**, and D.C. White. 1993. Changes in periphyton community structure, lipid and fatty acid composition in chlorine-impacted streams. 3rd International Conference, Aquatic Ecosystem Health and the Ecological Significance of Bioassay Techniques. Poster presentation.
78. Steward, C.C., **S.C. Nold**, White, D.C., and C.R. Lovell. 1993. Microbial biomass and community structure in the burrows of three marine worms by phospholipid fatty acid analysis. Abstracts, General Meeting of the American Society for Microbiology, Atlanta, GA. Poster presentation.
79. **S.C. Nold**, Lackey, L., Ringelberg, D., and D.C. White. 1992. Changes in community structure and physiological status of a bacterial consortium during degradation of trichloroethylene (TCE). Abstracts, General Meeting of the American Society for Microbiology, New Orleans, LA. Poster presentation.

*Supervised Student Author

UW-STOUT GRADUATE STUDENTS SUPERVISED:

1. **Rana Delshadi**, Food Science Graduate Student. January 2017-December 2018. *Fermentation of whey permeate to produce ethanol*. Master's Thesis.
2. **Frank Dogbatsey**, Food Science Graduate Student. September 2009-August 2011. *Survival of Listeria monocytogenes in fermented sausage products*. Master's Thesis.
3. **Sofyan Maghaydah**, Food Science Graduate Student. September 2001-January 2003. *Utilization of fish processing by-products for nutritional formulation of fish feed*. Master's Thesis. Graduated with a Ph.D. from Purdue University, now an assistant professor at Jordan University.

UW-STOUT UNDERGRADUATE RESEARCH STUDENTS SUPERVISED:

1. *†‡**Michael Bellecourt**, Applied Science. September 2006-December 2009. $\delta^{13}\text{C}$ analysis to describe carbon flux through Lake Huron Sinkhole ecosystems. Graduated December 2009. Attending graduate school in genetics at UW-Madison.
2. *†**Jeffrey Berkebile**, Applied Science. September 2006-June 2007. *PLFA analysis to characterize Lake Huron Sinkhole microbial communities*. Graduated May 2008.
3. **Henry Brady**, Applied Science. September 2012-December 2012. *Bioinformatics analysis of 16S rRNA genes in Lake Menomin*. Graduates May 2014.

4. **Lauren Bryans**, Applied Science. May 2010-present. *Bioinformatics analysis of Rubisco genes from the Red Cedar Watershed*. Graduated date May 2013. Will attend anesthetist assistant school.
5. *†**Tracy Campbell**, Applied Science. September 2002-December 2005. *Functional gene diversity in northern peatland methanotrophs*. Graduated December 2005. Graduated with an M.S. in Oceanography at the University of Hawaii, now works as a research technician at Monterey Bay Marine Aquarium Research Institute.
6. ***Eric Cox**, Applied Math and Computer Science. August 2001-June 2002. *Statistical analysis of molecular data from nitrogen cycle genes in marine sediments*. Graduated May 2004.
7. †**Kayla Chiasson**, Applied Science. January 2012-June 2012. *Sequence analysis of bee gut bacterial communities*. Graduates December 2013.
8. ***Kristine Christopherson**, Applied Science. September 2006-January 2006. *Cloning of bacterial 16S rRNA sequences to characterize Lake Huron Sinkhole microbial communities*. Graduated May 2009, now a high school science educator.
9. **Taylor DePauw**, Applied Science. September 2013-December 2013. *Extraction of viral DNA from Lake Menomin*. Graduates May 2015.
10. †**Ashley Dillon**, Applied Science. January 2007-May 2007. *16S rRNA sequencing to describe the photosynthetic bacteria in Lake Huron sinkhole ecosystems*. Graduated May 2010.
11. ***Danielle Ellefson**, Dietetics. January 2001-February 2002. *Development of DNA extraction and amplification procedures from humic-rich aquatic sediments*. Graduated May 2003.
12. **Brooke Erikkla**, January 2000-August 2000. *Molecular sequence analysis of nitrogen cycle genes in marine sediments*.
13. **Alex Fairchild**, Menomonie Senior High School. Summer 2001: *Characterization of peatland bacterial and plant communities*. Graduated from Lawrence University in Milwaukee.
14. †**Michael Gillette**, Applied Science. August 2010-present. *Diversity of cyanobacterial genes in the Red Cedar watershed*. Graduates May 2014.
15. **Anne Guthrie**, Applied Science. January 2012-June 2012. *Science reporting and outreach*. Graduated December 2012 and will become a high school science teacher and track coach.
16. †**Lance Gregorich**, Applied Science. January 2008-May 2008. *Analysis of microcystin genes in the Red Cedar Watershed*. Graduated May 2010.
17. *†‡**Mark Holtan**, Applied Science. September 2002-May 2005. *Atmospheric methane oxidation by northern peatland methanotrophs*. Graduated May 2005 and is now working for the USDA in Oxford, Mississippi.
18. \$**Brady Hurtgen**, Applied Science. January 2004-December 2005. *Grasshopper species diversity in restored and native prairies*. Graduated December 2005 and is now a post-doc in immunology at UT-Austin.
19. †**Tapesh Joshi**, Applied Science. January 2007-June 2007. *16S rRNA sequencing to describe the genetic diversity of bacteria inhabiting Lake Huron sinkhole sediments*.
20. ***Amy Koeppe**, Food Systems and Technology. June 2001-June 2002. *Detection of methanotrophic bacteria by DNA-DNA hybridization*. Graduated May 2003.
21. *†‡**Jess Kane**, General Business Administration. January 2001-May 2003. *Incorporation of ¹³C into methanotroph nucleic acids*. Graduated May 2003, now working in the software security industry.

22. †**Dan Kretschmar**, Applied Science. January 2008-May 2008. *Analysis of microcystin genes in the Red Cedar Watershed*. Graduated May 2010, now a graduate student at the University of Minnesota.
23. **Paul Krause**, Applied Science. Sept 2014-December 2014. Bacteriophage culture using *Microcystis aeruginosa* as a host.
24. **Brandon Laufenberg**, Honors Thesis. Spring 2018. *Microbial analysis of beer and cheese production*. Graduated May 2018.
25. **Molly Loughrin**, Applied Science capstone project. September 2017-May 2018. *Wild yeast strains ferment galactose in whey permeate: turning waste into a valuable product*. Graduated May 2018.
26. †**Julie Lucchesi**, Applied Science. August 2010-present. *Diversity of cyanobacterial nifH genes in the Red Cedar watershed*. Graduates May 2013.
27. **Timothy Lurvey**, Applied Science. January 2006-June 2006. *Lipid analysis to understand stream microbial community composition and structure*. Graduated May 2008.
28. *†‡**Nathan Maier**, Applied Science. September 2006-December 2008. *PLFA analysis to characterize Lake Huron Sinkhole and stream microbial communities*. Graduated December 2008, now a chiropractor.
29. **William Maringa**, Applied Science. September 2012-December 2012. Bioinformatics analysis of 16S rRNA genes in Lake Menomin. Graduates May 2013.
30. **Nathan Mayfield**, Applied Science. June 2008-january 2008. *Sequence analysis of mcyA, B, and D genes to understand cyanobacterial diversity in the Red Cedar Watershed*.
31. †**Caleb Meier**, Applied Science. January 2007-June 2007. *16S rRNA sequencing to describe the genetic diversity of bacteria inhabiting Lake Huron sinkhole sediments*. Graduated May 2008.
32. **Rebecca Mijal**, Applied Science. September 2005-May 2006. *Analysis of ¹³C incorporation into PLFA to characterize bacterial activity in northern peatland ecosystems*. Graduated May 2007.
33. *†**Brooke Miller**, Applied Science. January 2001-December 2005. *Molecular analysis of methanotrophic species in Wisconsin acidic peatlands*. Graduated December 2005 and is now a forensic specialist in Cambridge, MA.
34. †**Jessica Nottke**, Applied Science. January 2008-May 2008. *ARISA analysis of bacterial communities in the Red Cedar Watershed*. Graduated May 2010.
35. **Jamie Olson**, Applied Science. January 2012-May 2012. *Sequence analysis of bacterial communities in honey bee guts*. Graduates May 2013.
36. ‡**Brendan O'Meara**, January 2000-August 2000. *Molecular sequence analysis of nitrogen cycle genes in marine sediments*.
37. *†‡**Joseph Brick Pangborn**, Applied Science. January 2007-May 2008. *Sequence analysis of bacterial communities in Lake Huron sinkholes*. Graduates May 2013.
38. †**Baley Schubert**, Applied Science. January 2012-May 2012. *Sequence analysis of bacterial communities in honey bee guts*. Graduates May 2013.
39. *†‡**Laura Schultz**, General Business Administration. January 2001-May 2003. *Diversity of methanotrophic communities in northern peatlands*. Graduated May 2004, was a graduate student at UW-La Crosse, now working in the dairy industry.
40. *†**Mandi Seeger**, Applied Science. September 2006-June 2007. *ARISA analysis to characterize Lake Huron Sinkhole microbial communities*. Graduated December 2008.
41. \$**Levi Stodola**, Applied Science. January 2004-June 2004. *Grasshopper species diversity in restored and*

native prairies. Graduated May 2007 and is now a medical resident at UW-Madison.

42. †**Danielle Thuemling**, Applied Science. January 2012-December 2012. *Bacterial diversity in Varroa mite guts*. Graduated December 2012, plans to enter physician's assistant school.
43. **David Vang**, Applied Science. January 2013-May 2013. *Enumeration of viral particles in Lake Menomin by flow cytometry*. Graduates May 2013.
44. **Anna Winfield**, Applied Science. September 2012-December 2012. *Bioinformatics analysis of 16S rRNA genes in Lake Menomin*. Graduates May 2014.
45. †**Shane Webb**, Applied Science. January 2007-June 2007. *16S rRNA sequencing to describe the photosynthetic bacteria in Lake Huron sinkhole ecosystems, and Creation of an educational web site to disseminate NSF-MO/MIP research findings*. Graduated May 2010.
46. **Tianhou Xu**, Applied Science. September 2013-May 2014. *Viral diversity in Lake Menomin*. Graduates May 2014.
47. **Amy York**, Applied Science. January 2012-December 2012. *Viral abundance in Lake Menomin*. Graduated December 2012, working in the science industry.
48. *†‡**Heidi Zajack**, Applied Science. September 2006-May 2009. *ARISA analysis to characterize Lake Huron Sinkhole microbial communities*. Graduated May 2009.
49. *†**Megan Zemke**, Applied Science. January 2006-June 2007. *ARISA to understand stream microbial community composition and structure*. Graduated May 2009.
50. †**Kang Zoua**, Applied Science. August 2010-March 2011. *Diversity of cyanobacterial microcystin genes mcyA and mcyB in the Red Cedar watershed*. Graduated May 2012.

OTHER RESEARCH STUDENTS SUPERVISED:

1. †‡**Teresa M. Large**, Microbiology Major, Michigan State University. January 1999- December 1999. *Molecular analysis of nitrogen cycle organisms in marine sediment microbial communities*. Graduated from MSU in 2004, now a post-doctoral researcher working with *E. coli* pathogenesis.
2. **Veronica Grüntzig**, Microbiology Graduate student, Michigan State University. Spring 1999. *Pseudomonas stutzeri nitrite reductase gene abundance in environmental samples measured by real time PCR*. Graduated January 2003, now working in Germany.
3. **Vanessa M. Muñiz**, NSF Research Experience for Undergraduates student at Michigan State University. Summer 1998. *Development of DNA extraction protocols to lyse marine sediment microorganisms*. Working for in cancer therapeutics at the National Institutes of Health.
4. **Cecilia M. Santegoeds**, Visiting M.S. student from The Netherlands, Montana State University. 1994-1995. *DGGE to characterize thermophiles from Yellowstone hot springs*. Now a research scientist in The Netherlands.

*Supported by federal grant dollars

†Presented at Local or Regional Meeting

‡Presented at National Meeting

\$Presented at International Meeting