

Barry H. Rosen, Ph.D.

Florida Gulf Coast University (FGCU)
The Water School
Department of Ecology and Environmental Studies
Fort Myers, FL

EDUCATION:

Ph.D., Bowling Green State University, Bowling Green, Ohio. 9/78-9/82. Biology.
M.A., St. Cloud State University, St. Cloud, Minnesota. 2/76-8/78. Biology.
B.S., University of Connecticut, Storrs, Connecticut. 9/72-1/76. Botany.

Current Position:

World-Class Scholar and Full Professor, FGCU (8/2019 to present)

-Creating a state-wide and national program to understand freshwater Harmful Algal Blooms, their impacts and potential solutions for mitigation

Past Positions:

Biologist, US Geological Survey, (2006-present, as Emeritus)

I maintained a funded research program in algae, with emphasis on harmful algal blooms, including genetic, taxonomic and physiological ecological approaches. Support was from the US Army Corps of Engineers, South Florida Water Management District, Florida Department of Environmental Protection, and USGS Environmental Health programs. I also was part of the State of Florida effort to resurrect the Harmful Algal Bloom Task Force, led by Florida Fish and Wildlife Commission. I was a Courtesy Senior Research Associate, Department of Biology, University of Central Florida and supported students in my laboratory. I also provided advice to Federal, State and local governments related to harmful algal blooms. I also served as the USGS representative the South Florida Ecosystem Restoration Task Force's Science Coordination Group and the USGS representative on the Restoration Coordination and Verification Leadership Group, the science arm of the Comprehensive Everglades Restoration Plan. I also served as the USGS Southeast Regional Tribal Liaison, covering 10 nationally recognized tribes and support tribes nationwide on issues associated with harmful algal blooms.

Assistant Field Supervisor-Everglades Restoration, US Fish and Wildlife Service (2002-2006)

I supervised the effort of over 50 biologists involved in the ecosystem restoration programs in south Florida, with emphasis on the Comprehensive Everglades Restoration Plan. I negotiated with agencies and organizations concerning the FWS position and worked to resolve conflicts among interested parties. I was responsible for arranging and growing the Fish and Wildlife's role with the COE, including the annual allocation of funds for coordination activities.

Water Quality Specialist, US Department of Agriculture, Natural Resources Conservation Service, Watershed Science Institute (1999-2002)

I served as a national expert in water quality, with emphasis on harmful algal blooms in drinking water sources as well as watershed assessment. I was on an interdisciplinary team that developed training on watershed health indicators that was used throughout the nation.

Program Manager & Senior Supervising Environmental Scientist, South Florida Water

Management District (1994-1999)

I provided leadership for the Lake Okeechobee Program with emphasis on harmful algal blooms and was responsible for Planning, Research and Monitoring, Regulation, Exotic Species Control, Budget and Administration and compliance with NEPA on multi-agency projects.

Senior Project Manager & Research Scientist, ManTech Environmental Technology, Inc., Corvallis EPA Laboratory, (1991-1994)

I wrote programmatic strategies for the US EPA-Environmental Monitoring and Assessment Program (EMAP)-Wetlands program, including the 1-year budget narrative, 5-year research strategy, and the overall EMAP-Wetlands research. I managed the research activities of the Prairie Wetlands Pilot Study.

Environmental Science and Engineering Fellow, American Association Advancement of Science-EPA Office of Wetlands, Oceans, & Watersheds, Washington, DC (06/1990-08/1990)

I worked on the Clean Water Act (CWA), section 301(h- municipalities with POTWs that discharged into marine waters). I served as liaison between the EPA and other federal and state agencies on technical and policy aspects of the current regulations and potential alterations with the re-authorization of the CWA. Authored: *Toxic Phytoplankton Blooms Enhanced by Human Activity: The Effects of Publicly Owned Treatment Works*.

Assistant Professor, University of Tampa (1987-1991)

I taught courses on general biology, marine botany, terrestrial plants, and environmental science. I conducted research on Tampa Bay and demonstrated that nitrogen was the limiting nutrient to the periphyton community. In the Hillsborough River, I conducted research on taste and odor production in algae, in support of drinking water facilities in the area. My research centered on the annual bloom of *Anabaena circinalis*, a taste and odor producing cyanobacteria in the water supplies. I was the Coordinator of Undergraduate Research and the Tri-Beta Advisor for the Biology Department.

Investigator – Naturalist-Ecologist Training Program, University of Michigan Biological Station (05/1987-08/1987)

I advised students on research projects for and conducted independent research. I examined the symbiotic associations in various aquatic environments with cyanobacteria capable of converting inert atmospheric nitrogen into usable forms. I quantified the nitrogen fixation rate using gas chromatograph and determined the amount of nitrogen contributed to the aquatic ecosystem. Specific projects focused on attached and planktonic cyanobacteria.

Postdoctoral Research Associate, Biological Sciences, University of Nebraska, Lincoln (1986/7)

I was with the Aquatic Species Program, which was part of the Biofuels Program, Department of Energy, administered through the Solar Energy Research Institute. I was part of a team of scientists working on lipid production from living organisms, which serve as biofuels. The goal of the program was to produce biofuels from microalgae grown in saline waters of the desert southwest.

Postdoctoral Research Associate, Tel Aviv University/Weizmann Institute (1985/86)

European Molecular Biology Organization (EMBO). EMBO sponsored my research in Israel, working with internationally acclaimed experts in symbiosis and lectins at the University of Tel Aviv and the Weizmann Institute in Rehovot. The main focus of my research was on understanding how symbiotic relationships between plants and cyanobacteria are initiated and maintained

Postdoctoral Research Associate & Assistant Professor, Biology Dept., Virginia Commonwealth University, (1984/85)

My research was supported by Bio-Technical Resources, Inc., a biotechnology company developing hybridization technology that allowed different strains of organisms to be fused to form a new strain.

Electron Microscopist, The Ohio State University, (1982/83)

Manager of the transmission electron microscope facility in the Department of Botany at Ohio State University, supported by a grant from the National Science Foundation.

JOB-RELATED HONORS, AWARDS, ETC.:

Honors and Awards:

- a) Certificate of Recognition: Exceptional Teaching Assistant from the Graduate College, Bowling Green State University.
- b) Alpha Chi Faculty Alumni Scholarship, 1989. Early Career Award: Outstanding Research at the University of Tampa.
- c) American Association Advancement of Science-EPA Environmental Science and Engineering Fellow, Office of Research and Development, U.S. EPA, Washington, D.C. Summer 1990.
- d) ManTech Environmental-Performance Incentive Program Award-Development of Indicator Concept, EMAP, US EPA 1992.
- e) ManTech Environmental-Performance Incentive Program Award "EMAP-Wetlands: Technical Strategy, Approach, and Project Descriptions for FY93." June 1993.
- f) South Florida Water Management District-Employee of the Month (Team), (Dec. 1998) for work on the Florida Water Atlas.
- g) *Aquatic Resource Management Award*-Florida Lake Management Society- (given to a professional government employee who has worked to restore, protect and/or advance our understanding of Florida's aquatic resources), 1999.
- h) *The 2000 Joan Hodges Queneau Palladium Medal*-American Association of Engineering Societies & National Audubon Society-
- i) USDA, NRCS-*Spot Award*-contribution to Water Quality Model Review, 2001.
- j) USDA, NRCS-*Spot Award*-contribution to Watershed Science Institute Contributions, 2002.
- k) US FWS – *Star Award*-2002, 2004, 2006
- l) US FWS – Quality Step Increase-2004.
- m) USGS – Individual Cash Award 2010, 2012, 2014, 2015, 2016, 2017, 2018

COMMITTEE SERVICE:

- *National Research Council* – Committee on Independent Scientific Review of Everglades Restoration Progress (DOI-representative, 2005-2006)
- *South Florida Ecosystem Restoration Task Force*-Combined Structural and Operations Plan Advisory Team (USFWS representative, 2003-2005)

- *South Florida Ecosystem Restoration Task Force- Science Coordination Group* (USFWS representative, 2003-2006)
- *South Florida Ecosystem Restoration Task Force- Working Group*, (USGS representative, 2006-present)
- *USGS Tribal Liaison* (Southeast Regional representative, 2007-present)
- *USGS Principal to the Steering Committee of the Peninsular Florida Landscape Conservation Cooperative*
- *South Florida Comprehensive Restoration Plan-Restoration Verification and Evaluation Leadership Group* (USFWS representative, 2003/4; USGS representative 2010-present)
- *National Fish, Wildlife and Plants Climate Adaptation Strategy* (2010/11)
- *Vice-Chair*, South Florida Ecosystem Restoration Working Group (2012-2016)
- *USGS Representative*, South Florida Ecosystem Restoration Science Coordination Group (2018-present)
- *Federal Representative-Florida Harmful Algal Bloom Task Force* (2018-2019)

PUBLICATIONS:

Book Contributions

- 1) SEM photographs *in: Introductory Phycology*, F.R. Trainor. 1978. Wiley & Sons.
- 2) SEM photographs *in: General Microbiology*, R.F. Boyd. 1984. Times Mirror/Mosby.
- 3) Rosen, B.H. 1990. *Microalgae Identification for Aquaculture. Identification Manual* for Microalgae used in Aquaculture, published by Florida Aqua Farms, Dade City, Fl. 48pp.
- 4) Rosen, B.H. 1993. Periphyton *in: Stream Indicator Design Workshop*. Hughes, R.M. (ed). EPA/600/R-93/138.
- 5) Rosen, B.H. 1995. Use of Periphyton in the Development of Biocriteria. Pages 209-215 *in* Davis, W.S., and Simon, T.P. (editors). *Biological assessment and criteria: Tools for water resource planning and decision making*. Lewis Publishers, Boca Raton, Florida.
- 6) Rosen, B.H., Gray, S. and Flaig E. 1995. Implementation of Lake Okeechobee Watershed Management Strategies to Control Phosphorus Load. *in: Wetlands and Watershed Management: Science Applications and Public Policy*. Kusler, J.A., Willard, D.E. and Hull, H.C. Jr. (eds).
- 7) Rosen, B.H. 1997. Lake Okeechobee Surface Water Improvement and Management Plan. South Florida Water Management District. 205 pp. (available upon request)
- 8) Multiple authors. 1997. Periphyton-based Restoration Success Criteria. *in: Ecologic and Precursor Success Criteria for South Florida Ecosystem Restoration*. A Science sub-group report to the Working Group of the South Florida Ecosystem Restoration Task Force.
- 9) South Florida Water Management District. 1998 *in: Water Resources Atlas of Florida*. Fernald and Purdum, E.D. (eds.). Inst. of Sci. and Public Affairs, Florida State University. ISBN 0-9606708-2-3.
- 10) Steinman, A.D., Havens, K.E., Aumen, N.G., James, R.T., Jin, K-R., Zhang, J. and Rosen. B.H. 1999. Phosphorus in Lake Okeechobee: Sources, sinks and strategies. *in: Phosphorus Biogeochemistry in Subtropical Ecosystems*. Reddy, K.R., O'Connor, G.A., and Schelski, C.L. (eds.). Lewis Pub.
- 11) Rosen, B.H. 2001. Waterborne Pathogens in Agricultural Watersheds. Natural Resource, Agriculture, and Engineering Service. 65 pp. ISBN 0-935817-68-9.
- 12) Rosen, B. H., Shambaugh, M., Watzin, G., Boyer, Smith, F., Ferber, Eliopoulos, L. C., and Stangel, P. 2001. *Evaluation of Potential Blue-green Algal Toxins in Lake Champlain (2000)*; UVM School of Natural Resources.
- 13) Network Diagramming and Practice Effects Assistance *in: USDA, NRCS Farm and Ranch Lands Protection Program, Final Environmental Assessment*, May 2003.
- 14) Boyer, G.L., Watzin, M.C., Shambaugh, A.D., Satchwell, M.F., Rosen, B.H., and Mihuc, T. 2004. The Occurrence of Cyanobacteria Toxins in Lake Champlain *in: Lake Champlain: Partnerships and Research*

in the new Millennium, Kluwer Academic/Plenum Press. pp. 241-258, Manley, T.O., Manley, P.L. and Mihuc, T.B., (eds)

- 15) Figure 2 in: International Joint Commission Twelfth Biennial Report on Great Lakes Water Quality, Sep. 2004, ISBN 1-89428045-8
- 16) Rosen, B.H. 2005. Potential Health Issues Associated with Blue-Green Algae Blooms in Impoundments, Ponds, and Lakes. Water Encyclopedia: Surface and Agricultural Water. Lehr, J. H. and Keeley, J., (eds).
- 17) Rosen, B.H. 2005. Waterborne Bacteria. Water Encyclopedia: Water Quality and Resource Development. Lehr, J. H., and Keeley, J. (eds).
- 18) Lavoie, D.L., Rosen, B.H., Sumner, D.M., Haag, K.H., Tihansky, A.B., Boynton, Betsy, and Koenig, R.R., (eds.). 2008. USGS Gulf Coast Science Conference and Florida Integrated Science Center Meeting: Proceedings with Abstracts, Oct 20-23, 2008, Orlando, Florida: U.S. Geological Survey Open-File Report 2008-1329, 157 p.
- 19) Berger, P., Brooks J., Evens. T., Gobler, C., Graham, J., James Hyde, J., Karner, D., O'Shea, K., Paul, V. Paerl, H., Piehler, M. Rosen, B., Santelmann, M., Tester, P., and Westrick, J. 2008. Cyanobacterial Harmful Algal Blooms: Chapter 9: Causes, Prevention, and Mitigation US EPA Agency Papers.
- 20) Sarma, T.A. 2012. *Handbook of Cyanobacteria*. CRS Press, Taylor & Francis Science Publishers, Chapter 10: Figure 5c and 5d-Lyngbya sp. stained with Sytox green under epifluorescence microscope, p. 497.
- 21) Rosen, B.H., and St. Amand, Ann, *Field and laboratory guide to freshwater cyanobacteria harmful algal blooms for Native American and Alaska Native Communities*: U.S. Geological Survey Open-File Report 2015-1164, 44 p., <http://dx.doi.org/10.3133/ofr20151164>.
- 22) Rosen, B.H., and Mareš, Jan, *Catalog of microscopic organisms of the Everglades, Part 1—The cyanobacteria*: U.S. Geological Survey Open-File Report 2016-1114, 108 p., <http://dx.doi.org/10.3133/ofr20161114>.
- 23) Rosen, B.H., Davis, T.W., Gobler, C.J., Kramer, B.J., and Loftin, K.A., 2017, *Cyanobacteria of the 2016 Lake Okeechobee Waterway harmful algal bloom*: U.S. Geological Survey Open-File Report 2017-1054, 34 p., <https://doi.org/10.3133/ofr20171054>
- 24) Rosen, B.H., Loftin, K.A., Graham, J.L., Stahlhut, K.N., Riley, J.M., Johnston, B.D., and Senegal, S., 2018, *Understanding the effect of salinity tolerance on cyanobacteria associated with a harmful algal bloom in Lake Okeechobee, Florida*: U.S. Geological Survey Scientific Investigations Report 2018-5092, 32 p., <https://doi.org/10.3133/sir20185092>
- 25) Rosen, B.H., Stahlhut, K.N., and Hall, J.D. 2019. Catalog of Microscopic Organisms of the Everglades Part 2—The Desmids of the Arthur R. Marshall Loxahatchee National Wildlife Refuge: U.S. Geological Survey Scientific Investigations Report 2019-5074, 277 p., <https://doi.org/10.3133/sir20195074>
- 26) Rosen, B.H. 2020. *Freshwater Cyanobacterial Blooms: A Review*. Encyclopedia of Water, Wiley (in press).

Peer-Reviewed Publications

1. Rosen, B.H. and Knutson, K. M. 1977. A unialgal bioassay of the Northern States Power Company's Sherburne County generating plant waste water effluent. Environmental Monitoring and Ecological Studies. Annual Report. Becker, Minnesota. Part 3. pp. 3.1., 49-126.
2. Lowe, R.L., Rosen, B.H. and Kingston, J.C. 1982. A comparison of epiphyte on *Bangia atropurpurea* (Rhodophyta) and *Cladophora glomerata* (Chlorophyta) from North Lake Michigan. Journal of Great Lakes Research-Ecology of Filamentous Algae. 8:164-168.
3. Pratt, J.D. and Rosen, B.H. 1983. Associations of species of *Vorticella* (Peritrichida) and Planktonic Algae. Trans. Amer. Micro. Soc. 102:48-54.
4. Rosen, B.H. and Lowe, R.L. 1984. Physiological and ultrastructural responses of *Cyclotella meneghiniana* (Bacillariophyta) to light intensity and nutrient limitation. J. Phycol. 20:173-183.

5. Kociolek, J.P. and Rosen, B.H. 1984. Observations on North American *Gomphoneis* (Bacillariophyceae). I. Valve ultrastructure of *Gomphoneis mammilla* with comment on the taxonomic status of the genus. J. Phycol. 20:361-368.
6. Belanger, S.E., Lowe, R.L. and Rosen, B.H. 1985. The effects of current and cell size on epiphytism of *Synedra parasitica* var. *parasitica* on *Surirella robusta* var. *splendida*. Transactions of the American Microscopical Society. 104:378-386.
7. Rosen, B.H., Berliner, M.D. and Petro, M.J. 1985. Protoplasts induction in *Chlorella pyrenoidosa*. Plant Science 41:23-30. Elsevier Scientific Publishers Ireland Ltd.
8. Rosen, B.H., Berliner, M.D. and Petro, M.J. 1986. Analysis of starch content in *Chlorella pyrenoidosa* (Chlorophyta) using morphologic and quantitative techniques. American Journal of Botany 73:1372-1375.
9. Rosen, B.H., Fisher, R.W. Johnson, R. and Gates, J. 1987. Ultrastructural localization of cell surface immunospecificity in *Anabaena-Azolla* using indirect fluorescent antibody staining. American Journal of Botany 74:1060-1064.
10. Berliner, M.D., Fisher-Neely, D., Rosen, B.H., and Fisher, R.W. 1987. Spheroplast induction in *Anabaena variabilis* Kutz. and *A. azollae* Stras. Protoplasma 139:36-41.
11. Coleman, L.W., Rosen, B.H. and Schwartzbach, S.D. 1987. Environmental control of lipid accumulation in *Nannochloropsis salina*, *Nannochloropsis Q*, and *Euglena*. in: Aquatic Species Program Review: Annual Report. pp. 190-206.
12. Coleman, L.W., Rosen, B.H. and Schwartzbach, S.D. 1988. Environmental Control of Carbohydrate and Lipid Synthesis in *Euglena*. Oxford Journals, Plant and Cell Physiology 29:423-432.
13. Coleman, L.W., Rosen, B.H. and Schwartzbach, S.D. 1988. Preferential Loss of Chloroplast Proteins in Nitrogen Deficient *Euglena*. Plant and Cell Physiology 29:1007-1014.
14. Zimmerman, W.J., Rosen, B.H., and Lumpkin, T.A. 1989. Enzymatic, lectin and morphological characterization and classification of presumptive cyanobionts from *Azolla* Lam. New Phytologist 113:497-503.
15. Rosen, B.H. 1990. Toxic Phytoplankton Blooms Enhanced by Human Activity: The effects of publicly owned treatment works. American Association for the Advancement of Science. 51 pp.
16. Clendennen, A. and Rosen, B.H. 1991. The Effects of Nitrogen and Phosphorus on Periphyton in a Marine Environment: Hillsborough Bay, Tampa, Florida. Proceedings, Tampa Bay Scientific Information Symposium 2. 1991 Feb. 27-Mar 1, Tampa, Fla. pp. 513-516.
17. Rosen, B.H., MacLeod, B.W., and Simpson, M.R. 1992. Accumulation and Release of *geosmin* during the growth phases of *Anabaena circinalis*. Water Science Technol. Vol. 25: Pp. 185-190.
18. Zimmerman, W.J. and Rosen, B.H. 1992. Cyanobiont diversity within and among cycads of one field site. Canadian Journal of Microbiology 38:1324-1328.
19. Rosen, B.H., Squires, L., and Novitzki, R.P. 1993. Environmental Monitoring and Assessment Program: Technical Strategy, Approach, and Project Descriptions for FY93. 47 pp. (EPA internal document-Jan 1993). Available upon request.
20. Rosen, B.H., Squires, L. and R.P. Novitzki. 1993. Environmental Monitoring and Assessment Program-Wetlands: Technical Strategy and Approach- FY93-FY97. 72 pp. (EPA internal document-Apr 1993). Available upon request.
21. Rosen, B.H., Adamus, P.R. Squires, L., and Novitzki, R.P. 1993. Environmental Monitoring and Assessment Program-Wetlands: Palustrine Emergent Conceptual Model. 58 pp. (EPA internal document-Jul 1993). Available upon request.
22. Novitzki, R.P., Rosen, B.H., McAllister, L., Ernst, Huntley, T. B. and Dwire. K. 1993. Environmental Monitoring and Assessment Program-Wetlands: Research Strategy for the Assessment of Wetland Condition. 149p. (EPA internal document-Dec 1993). Available upon request.
23. Zimmerman, W.J., Soliman, C.M., and Rosen, B.H. 1995. Growth and 2-methylisoborneol production by the cyanobacterium *Phormidium* sp. LM689. Water Sci. Technology. Vol. 31, No. 11. pp 181-186.

24. Rosen, B.H., Adamus, P.R., and Lal, H. 1995. A conceptual model for the assessment of depressional wetlands on a regional scale. *Wetlands Ecology and Management* 3:195-208.
25. Havens, K. E. and Rosen, B.H. 1996. Plan for quantifying Long-Term Ecological Trends in Lake Okeechobee. 34 p. (SFWMD internal document-Mar 1996). Available upon request.
26. Gu, B., Havens, K.E. Schelske, C.L. and Rosen, B.H. 1997. Uptake of Dissolved Nitrogen by Phytoplankton in a Eutrophic Subtropical Lake. *J. Plankton Research* 19, No. 6 pp 759-770.
27. Havens, K.E. and Rosen, B.H. 1997. Long-term Ecological Research Program for Lake Okeechobee. Proceedings of 2nd East Asia-Pacific Regional Conference on Long-term Ecological Research in the East Asia-Pacific Region: Biodiversity & Conservation of Terrestrial and Freshwater Ecosystems, Tsukuba, Japan. Published in 1998 by Center for Global Environmental Research, National Institute of Environmental Studies.
28. Havens, K.E. and Rosen, B.H. 1997. Lake Okeechobee Conceptual Model and Hydrologic Performance Measures. (SFWMD)
http://books.google.com/books/about/Lake_Okeechobee_Conceptual_Model_and_Hyd.html?id=F2_atgAACAAJ
29. Harvey, R., Havens, K.E., Rosen, B.H. 1999. Lake Okeechobee Action Plan developed by the Lake Okeechobee Issue Team for the South Florida Ecosystem Restoration Working Group.
30. Multiple Operational Planning Core Team Members. 1999. Final Report, Implementation Strategies towards the Most Efficient Water Management: The Lake Okeechobee WSE Operational Guidelines.
31. Steinman, A.D. and Rosen, B.H. 2000. Lotic-lentic linkages associated with Lake Okeechobee, FL. *J. North Amer. Benthological Society* 19:733-741.
32. Rosen, B.H. 2000. *Waterborne Pathogens in Agricultural Watersheds*. USDA-NRCS-Watershed Science Institute Technical Note. 65 pp.
33. Cassell, E.A., Meals, D.W. Aschmann, S.G. Anderson, D.P. Rosen, B.H. 2000. Dynamic simulation modeling of phosphorus budgets for agricultural watershed dominated by swine farming: The Little Cobb River watershed, MN case study. Final Report (NRCS, available upon request).
34. Rosen, B.H. 2001. Evaluation of Potential Blue-green Algal Toxins in Lake Champlain. (Final report generated for CDC/LCBP).
35. Cassell, E.A., Meals, D.W., Aschmann, S.G. Anderson, D.P., Rosen, B.H., Kort, R.L., and Dorio, J.M. 2001. Use of Simulation Mass Balance Modeling to Estimate Phosphorus and Bacterial Export from Large Watersheds. Proceedings of the 5th International Conference of Diffuse/Nonpoint pollution and Watershed Management. Milwaukee, Wisconsin, Jun 10-15.
36. Rosen, B. H. 2007. Network Diagramming and Practice Effects Assistance to NRCS, Farm and Ranch Lands Protection Program, Final Environmental Assessment, May 2003.
37. Rosen, B.H. and Mortellaro, S. 2007. *Microspora* (Chlorophyta) as a potential indicator of wetland hydrology. *Florida Academy of Science* Vol. 70, No. 3:209-218.
38. Rosen, B.H., Loftin, K.A., Smith, C.E., Lane, R.F., and Keydel, S.P. 2010. Microphotographs of cyanobacteria documenting the effects of various cell-lysis techniques: U.S. Geological Survey Open-File Report, 2010–1289, 203 p. <http://pubs.usgs.gov/of/2010/1289/>
39. Bradley, W.G., Borenstein, A.R., Nelson, L.M., Codd, G.A., Rosen, B.H., Stommel, E.W., and Cox, P.A. 2013. Review Article: Is exposure to cyanobacteria an environmental risk factor for amyotrophic lateral sclerosis and other neurodegenerative diseases? *Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration*. v. 15:5-6, 325-333. <http://informahealthcare.com/doi/abs/10.3109/21678421.2012.750364>
40. Rosen, B.H. and St. Amand, A. 2015. Field and laboratory guide to freshwater cyanobacteria harmful algal blooms for Native American and Alaska Native Communities: U.S. Geological Survey Open-File Report 2015–1164, 44 p., <http://dx.doi.org/10.3133/ofr20151164>
41. Bentall, G.B., Rosen, B.H., Kunz, J.M., Miller, M.A., Saunders, G.W., and LaRoche, N.L. 2016. Characterization of the putatively introduced red alga *Acrochaetium secundatum* (Acrochaetiales,

- Rhodophyta) growing epizoically on the pelage of southern sea otters (*Enhydra lutris nereis*). Marine Mammal Science. v. 32:2, 753-764.
42. Kramer, B.J., Davis, T.W., Meyer, K.A., Rosen, B.H., Goleski, J., Oh, G., and Gobler, C.J. 2018. Nitrogen limitation, toxin synthesis potential, and toxicity of cyanobacterial populations in Lake Okeechobee and the St. Lucie River Estuary, Florida, during the 2016 State of Emergency event. PLoS ONE 13(5): e0196278. <https://doi.org/10.1371/journal.pone.0196278>
 43. Paine, E.C., Slonecker, E.T., Simon, N.S., Rosen, B.H., Resmini, R.G., and Allen, D.W. 2018. Optical characterization of two cyanobacteria genera, *Aphanizomenon* and *Microcystis*, with hyperspectral microscopy. J. of Appl. Remote Sens. 12(3), 036013
https://caps.luminad.com:8443/stockage/stock/SPIE/LDL-SPIE-JARS-170730/JARS-170730_online.pdf
 44. King, L.R., Rosen, B.H., Graham, J.L., Dubrovsky, N.M., Foster, G.M., Loftin, K.A., and Stelzer, E.A., 2020, Phytoplankton data for samples collected at eleven large river sites throughout the United States, June through September 2017: U.S. Geological Survey data release, <https://doi.org/10.5066/P9EYP85Z>.
 45. Graham, J.L., Dubrovsky, N.M., Foster, G.M., King, L.R., Loftin, K.A., Rosen, B.H. and Stelzer E.A. (2020) Cyanotoxin occurrence in large rivers of the United States, **Inland Waters**:
<https://doi.org/10.1080/20442041.2019.1700749>

Professional Presentations and Abstracts

1. Rosen, B.H. 1977. "A Continuous-flow Unialgal Bioassay for Attached Diatoms" (B. Rosen and K. Knutson), Minnesota Academy of Science 45th Annual Spring Meeting, St. Cloud State University, Apr 29-May 1.
2. Rosen, B.H. 1978. Chlorophyll "a" fluorescence as a measure of cell growth in a unialgal bioassay. Journal of Phycology, Supl. Vol 14, p 20s.
3. Rosen, B.H. 1978. Chlorophyll "a" fluorescence as a measure of cell growth in a batch culture with *Nitzschia palea* (Kutz.) W. Smith and some other observations on this diatom", Fourth International Diatom Symposium, Sep 28-Oct 1.
4. Rosen, B.H., J.C. Kingston and R.L. Lowe. 1981. Observations of differential epiphytism on *Cladophora glomerata* and *Bangia atropurpurea* from Grand Traverse Bay, Lake Michigan. Micron 12, pp 219-220.
5. Rosen, B.H. and R.L. Lowe. 1981. Observations on the keel-bearing epipellic diatoms of Lake Katherine, Michigan. Journal of Phycology, Vol 17 pp 26s, presented at Phycological Society of America at Indiana University, Bloomington, Aug 16-20.
6. Rosen, B.H. 1981. Light and Electron Microscope Observations on some Fragilariaceae from Lake Katherine, MI, VIth Diatom Symposium, Sep 9-12
7. Rosen, B.H. and R.L. Lowe. 1981. Valve ultrastructure of some confusing Fragilariaceae. Micron Vol 12, pp 293-294.
8. Rosen, B.H. 1981. A comparison of Epiphytes on *Bangia* & *Cladophora* from North Lake Michigan, (B.H. Rosen, J.C. Kingston, R. L. Lowe), International Association of Great Lakes Research, Oct 16-18.
9. Rosen, B.H. and R.L. Lowe. 1982. Consideration of the taxonomic position of Diatom *Entomoneis ornata* (J.W. Bail.) Reim., Eighth Annual Symposium of the Electron Microscopy Society of NW Ohio, Oct 9, pp 3-4
10. Rosen, B.H. and R.L. Lowe. 1982. Consideration of the taxonomic position of Diatom *Entomoneis ornata* (J.W. Bail.) Reim. Micron Vol 13, No. 1, pp 57-58.
11. Lauth, J. and B.H. Rosen. 1982. Observations on lateral antennae apertures of soft-bodied and loricate pelagic rotifers. Micron Vol 13 No. 1 pp 55-56, presented at the Eighth Annual Symposium of the Electron Microscopy Society of NW Ohio, Oct 9, pp 2-3
12. Rosen, B.H. 1982. Observations of three species of *Entomoneis*, VII International Symposium on Living and Fossil Diatoms, Aug 22-27.
13. Rosen, B.H. and Lowe, R.L. 1983. Correlative physiology and ultrastructure in *Cyclotella meneghiniana* (Bacillariophyta), VIIth Northern Symposium on Diatom Systematics and Ecology, Sep 28-Oct 1.

14. Rosen, B.H. and R.L. Lowe. 1983. Correlative physiology and ultrastructure in *Cyclotella meneghiniana*. Journal of Phycology, Vol 19, 49. Annual Meeting of Phycological Society of America at Univ of South Dakota, Grand Forks, Aug 7-11.
15. Rosen, B.H. 1983. Correlative Physiology and Ultrastructure in *Cyclotella Meneghiniana* (*Bacillariophyta*), 34th Annual AIBS Meeting, Grand Forks, ND Aug 7-11.
16. R.L. Lowe, B.H. Rosen and T.M. Larson. 1984. Seasonal Dynamics of Diatoms *Epiphytic* on *Cladophora* on the Western Basin of Lake Erie. N. Amer. Benthological Soc.
17. Rosen, B.H., M.D. Berliner and M.J. Petro. 1984. Physiological and ultrastructural characteristics during log and stationary growth in *Chlorella pyrenoidosa*. Journal of Phycology, Vol 20, 149s Suppl to Jun 1984. Phycological Society of America at Colorado State University, Ft. Collins, CO Aug 5-9.
18. Rosen, B.H. M.D. Berliner and M.J. Petro. 1984. Physiological and ultrastructural characteristics during log and stationary growth in *Chlorella pyrenoidosa*, American Society of Plant Physiologists, May 10.
19. Lowe, R.L., B.H. Rosen and G.W. Fairchild. 1984. Endosymbiotic blue-green algae in freshwater diatoms: An advantage in nitrogen poor habitats. Journal of Phycology, Vol 20, 127S, Phycological Society of America at Colorado State Univ, Ft. Collins, Aug 5-9.
20. Rosen, B.H., M.D. Berliner and M.J. Petro. 1984. Morphometric analysis of *Chlorella pyrenoidosa*. Journal of Cell Biology Vol. 99, No. 4, pp 57a.
21. Berliner, M.D. and B.H. Rosen. 1985. Genetic modification in microalgae. Applied Phycology Forum Vol. 2, pp 5-6.
22. Rosen, B. H., M. D. Berliner, and M.J. Petro. 1985. Wall characteristics of *Chlorella pyrenoidosa* Chlorophyceae, Northeast Algal Society Symposium, Apr 27-28.
23. Silverman, F.P. and B.H. Rosen. 1986. The effects of light and phosphorus limitation on the growth and physiology of *Chlorella pyrenoidosa*. Proc. Virginia Acad. Sci. Annual Meeting.
24. Berliner, M.D., B.H. Rosen, and M.J. Petro. 1986. Starch content analysis in *Chlorella pyrenoidosa* by morphometric and quantitative techniques. Amer. Soc. Micro. Annual meeting, Mar 23-28.
25. Coleman, L., B. H. Rosen, and S. Schwartzbach. 1986. Biochemistry of neutral lipid synthesis in microalgae. *in*: Aquatic Species Program Review: Proceedings of the Principal Investigators Meetings, Solar Energy Research Institute, Golden, Colorado. Sep 24-25.
26. Rosen, B.H. 1987. Nitrogen-fixation by periphyton in Douglas Lake, Michigan. In: IX North American Diatom Symposium, Oct 7-10.
27. Zimmerman, W.J., Rosen, B.H., and Lumpkin, T.A. 1988. Variability among isolates of the culturable *Anabaena* cyanobiont from different species of *Azolla* Lam. VIth Symposium on Phototrophic Prokaryotes, Noordwijkerhout, The Netherlands, Aug 7-13.
28. Rosen, B.H., Zimmerman, W.J., and T.A. Lumpkin. 1988. The use of FITC-labeled lectin to differentiate between algal strains. Xth Southeastern Phycological Colloquy, Oct 14-16.
29. Rosen, B.H. 1989. Prediction of *Anabaena* population growth using physical, chemical and biological factors. Journal of Phycology Vol. 25:37. Annual Meeting Phycological Society of America, Toronto, Canada, Aug 6-10.
30. Snell, T. W., Rosen, B.H., Doege, C., and Henson, R. 1990. Rotifer culture using a new dried algae product. World Aquaculture '90. World Aquaculture Society, Halifax Nova Scotia, Canada, Jun 10-17.
31. Clendennen, A. and Rosen, B.H. 1991. The Effects of Nitrogen and Phosphorus on Periphyton in a Marine Environment: Hillsborough Bay, Tampa, Florida. (Tampa BASIS 2), Feb 27-Mar 1.
32. Rosen, B.H., Chalfant, C.E. MacLeod, B.W. and Simpson, M.R. 1991. Accumulation and release of geosmin during the growth phases of *Anabaena circinalis*. 3rd International Symposium on Off-flavors in the Aquatic Environment, Los Angeles, California, Mar 3-8.
33. Zimmerman, W.J., C. Masters, and B.H. Rosen. 1991. Cyanobiont diversity within and among *Zamia integrifolia* plants of one field site. 4th International Phycological Congress, Duke University, North

Carolina, Aug 4-8.

34. Rosen, B. H. 1991. Spine and stria patterns of selected Fragilariaceae observed in electron microscopy.
35. Rosen, B.H., Squires, L., and R.P. Novitzki. 1993. A conceptual framework for assessment of wetland condition. Society for Wetlands Scientists, Edmonton, Canada, May 31-Jun 3.
36. Zimmerman, W.J., and Rosen, B.H. 1993. Initial examination of taste-and-odor producing cyanobacteria. *Journal of Phycology* 29:63. Phycological Society of America, Ames, Iowa, Aug. 1-5.
37. Huntley, B.K. and Rosen, B.H. 1994. Landscape-level evaluation of the Prairie Pothole region wetland complexes. Society for Wetlands Scientists, Portland, Oregon, May 31-Jun 3.
38. Rosen, B.H., Novitzki, R.P. and Adamus, P.R. 1994. A conceptual model for the assessment of depressional wetlands on a regional scale. Society for Wetlands Scientists, Portland, Oregon, May 31-Jun 3.
39. Zimmerman, W.J., Soliman, C.M. and Rosen, B.H. 1994. Growth and 2-methylisoborneol production by the cyanobacterium *Phormidium* sp. LM689. 4th International Symposium on Off-flavors in the Aquatic Environment, Melbourne, Australia.
40. Rosen, B.H., S. Gray, and E. Flaig. 1995. Implementation of Lake Okeechobee watershed management strategies to control phosphorus load. Association of State Wetland Managers, Tampa, Florida. Apr 23-26.
41. Rosen, B.H. 1995. Potential watershed management strategies for improving water quality in Lake Okeechobee. North American Lake Management Society, Toronto, Canada, Nov 6-11.
42. Rosen, B.H. and S. Gray. 1996. Water supply issues for Lake Okeechobee. Florida Lake Management Society, Ocala, Florida. May 22-24.
43. Rosen, B.H. 1996. Lake Restoration efforts in South Florida. Florida Lake Management Society, Ocala, Florida, May 22-24.
44. Rosen, B.H. 1996. Phosphorus management strategies for improving water quality in Lake Okeechobee. North American Lake Management Society, Minneapolis, Minnesota, Nov 13-17.
45. Rosen, B.H. 1997. New approaches for managing phosphorus loading to Lake Okeechobee. Phosphorus Biogeochemistry in Florida Ecosystems Symposium, Clearwater, Florida, Jul 3-16, 1997.
46. Rosen, B.H. 1997. "SWIM –Where It's Been and Where It's Going". Florida's 22nd Annual Conference on Water Management, Orlando, Florida, Sep 3-5, 1997.
47. Havens, K.E. and B.H. Rosen. 1997. A conceptual ecosystem model for Lake Okeechobee, Florida (USA). Society for Ecological Restoration. International Conference, Ft. Lauderdale, Florida, Nov 12-15 (invited).
48. Rosen, B.H. 1997. A new initiative for the phosphorus management in the Lake Okeechobee Watershed. North American Lake Management Society, Houston, Texas, Dec 2-5.
49. Havens, K.E. and B.H. Rosen. 1999. Long-term ecological research program for Lake Okeechobee, Florida (USA), East Asia-Pacific Conference of International Long-Term Ecological Research, Tsukuba, Japan (invited).
50. Rosen, B.H. 1999. Watershed management for Lake Okeechobee. Florida Lake Management Society, Safety Harbor, Florida May 26-28.
51. Rosen, B.H. 1999. Pathogen controls from agricultural watersheds. North American Lake Management Society, Reno, Nevada, Dec 1-4.
52. Rosen, B.H. 2000. A multiple-barrier approach to watershed protection from agricultural waterborne pathogens. Soil and Water Conservation Society Annual Meeting, St. Louis, Missouri, Jul 8-12.
53. Rosen, B. H., F. Smith and G.L. Boyer. 2000. Evaluation of potential blue-green algal toxins in Lake Champlain. North American Lake Management Society Annual Meeting, Miami, Florida, Nov 6-8.
54. Cassell, E.A., D.W. Meals, S.G. Aschmann, D.P. Anderson, B.H. Rosen, R.L. Kort, and J.M. Dorio. 2001. Use of dynamic simulation mass balance modeling to estimate phosphorus and bacterial export

- from large watersheds. 5th International Conference of Diffuse/Nonpoint pollution and Watershed Management. Milwaukee, Wisconsin, Jun 10-15.
55. Boyer, G.L., Satchwell, M. and B.H. Rosen. 2001. Cyanobacteria toxins in New York State Waters. 5th International Conference on Toxic Cyanobacteria. Noosa, Queensland, Australia. Jul 16-21, 2001.
 56. Rosen, B.H. 2001. Waterborne pathogen best management practices in agricultural watersheds. Invited Poster: EPA Workshop for Regional Directors. Ft. Meade, Maryland, Sept 5-7.
 57. Rosen, B.H. 2001. Information needed for waterborne pathogens in agricultural watersheds. Workshop to identify areas of common interest and research needs related to Animal Feeding Operations (AFOs) and water resources between the USDA and USGS. Research Triangle Park, North Carolina, Oct 2.
 58. Rosen, B.H. 2001. A multiple-barrier approach to watershed protection from agricultural waterborne pathogens. International Symposium on Animal Production and Environmental Issues. Research Triangle Park, North Carolina, Oct 3-5.
 59. Rosen, B.H. 2001. Waterborne pathogen best management practices in agricultural watersheds. North American Lake Management Society Annual Meeting, Madison, Wisconsin. Nov 7-9.
 60. Rosen, B.H. and G.L. Boyer. 2001. Emerging issues associated with cyanotoxins. U.S. Geological Survey Eastern Region Workshop on Emerging Issues in Water Quality. Orlando, Florida. Nov 26-30.
 61. Rosen, B.H. 2002. The Emerging issue of potentially harmful cyanotoxins in lakes. 11th Annual Southeastern Lakes Management Conference. Winston-Salem, North Carolina.
 62. Rosen, B.H. 2003. Management questions and decisions requiring science. Joint Conference on the Science and Restoration of the Everglades. Palm Harbor, Florida. Apr 13-18. (Keynote speaker for the Department of Interior)
 63. Rosen, B.H., H.B. Glasgow, B.W. Touchette, and J. Burkholder. 2003. The occurrence of cyanobacteria and microcystins in drinking and recreational reservoirs of North Carolina. North American Lake Management Society Annual Meeting, Mashantucket, Connecticut. Nov 4-8.
 64. Rosen, B.H., S. Mortellaro, and S. Komlos. 2004. *Microspora* (Chlorophyta) as a potential indicator of wetland hydrology. North American Lake Management Society Annual Meeting, Victoria, British Columbia Nov 1-6.
 65. Rosen, B.H. 2006. Understanding the potential problems associated with cyanobacterial blooms. Greater Everglades Ecosystem Restoration Conference, Lake Buena Vista, FL. Jun 5-9.
 66. Rosen, B.H. 2007. Potentially harmful cyanotoxins in drinking and recreational waters. Second National Conference on USGS Health-Related Research, Reston, VA. Feb 27 to Mar 1.
 67. Rosen, B.H. 2008. Primer on harmful algal blooms in the Gulf of Mexico, USGS Gulf Coast Science Conference and Florida Integrated Science Center Meeting: Proceedings with Abstracts, Orlando, FL, Oct 20-23.
 68. Rosen, B.H. 2009. Role and Responsibilities of the USGS Florida Integrated Science Center, FAPG/AIPG, Emerging Issues in Water Resources in Florida and the Southeast Region 2009 Annual Meeting and Technical Conference, St. Augustine, FL, Apr 30- May 2.
 69. Rosen, B.H. 2009. Understanding Lipid Production in Algae, NAA Conference, Orlando, FL, Jun 16.
 70. Rosen, B.H. 2009. Enhancing Lipid Production in Algae, NAA Conference to Address All Aspects of Algae as a Biofuel, Houston, TX, Sep 17-18.
 71. Rosen, B. H. 2009. Understanding the Potential Problems Associated with Cyanobacterial Blooms. Kick-off presentation to the workshop: *Potential Human Health Issues Related to Recurring Cyanobacterial Blooms in New England Water Bodies: What We Know and What We Need to Know*. Bowdoin College, ME, Dec 4.
 72. Rosen, B.H. 2009. USGS Science Program in Florida. *Strategic Habitat Conservation Workshop, Peninsular Florida Landscape Conservation Geography*. Palm Beach Gardens, FL, Dec 7-11.
 73. Rosen, B.H. 2010. *Direct and Indirect Consumption of Cyanobacteria by Juvenile Suckers in Klamath Lake, Oregon*. in: Thorsteinson, Lyman, VanderKooi, Scott, and Duffy, Walter, eds., 2011, Proceedings

- of the Klamath Basin Science Conference, Medford, Oregon, February 1–5, 2010: [U.S. Geological Survey Open-File Report 2011-1196](#), 312 p.
74. Rosen, B.H. 2010. *Ecological Strategies Utilized by Cyanobacteria*. in: Thorsteinson, Lyman, VanderKooi, Scott, and Duffy, Walter, eds., 2011, Proceedings of the Klamath Basin Science Conference, Medford, Oregon, February 1–5, 2010: [U.S. Geological Survey Open-File Report 2011-1196](#), 312 p.
 75. Burdick, S.M., S.P. VanderKooi, T.M. Wood, B.H. Rosen, C.A. Ottinger, and K.R. Echols. 2010. *Lack of Recruitment to Spawning Sucker Populations and Timing of Juvenile Sucker Mortality in Upper Klamath Lake, Oregon*. in: Thorsteinson, Lyman, VanderKooi, Scott, and Duffy, Walter, eds., 2011, Proceedings of the Klamath Basin Science Conference, Medford, Oregon, February 1–5, 2010: [U.S. Geological Survey Open-File Report 2011-1196](#), 312 p.
 76. Eldridge, S.L.C., K.E. Kannarr, T.M. Wood, K.R. Echols, B.H. Rosen, S.M. Burdick, C.A. Ottinger, and S.P. VanderKooi. 2010. *Seasonal and Spatial Dynamics of Cyanobacteria and Associated Water Quality Variables in Upper Klamath Lake, Oregon*. in: Thorsteinson, Lyman, VanderKooi, Scott, and Duffy, Walter, eds., 2011, Proceedings of the Klamath Basin Science Conference, Medford, Oregon, February 1–5, 2010: [U.S. Geological Survey Open-File Report 2011-1196](#), 312 p.
 77. Echols, K.R., T.M. Wood, C.A. Ottinger, B.H. Rosen, S.M. Burdick, and S.P. Vanderkooi. 2010. *Cyanobacterial Toxins Found in Upper Klamath Lake, Oregon: Implications for Endangered Fish*. in: Thorsteinson, Lyman, VanderKooi, Scott, and Duffy, Walter, eds., 2011, Proceedings of the Klamath Basin Science Conference, Medford, Oregon, February 1–5, 2010: [U.S. Geological Survey Open-File Report 2011-1196](#), 312 p.
 78. Densmore, C.L., C.A. Ottinger, K.R. Echols, T.M. Wood, S.P. VanderKooi, B.H. Rosen, and S.M. Burdick. 2010. *Algal Toxins in Upper Klamath Lake, Oregon: Histopathology of age-0 Lost River and shortnose suckers in 2007 and 2008*. in: Thorsteinson, Lyman, VanderKooi, Scott, and Duffy, Walter, eds., 2011, Proceedings of the Klamath Basin Science Conference, Medford, Oregon, February 1–5, 2010: [U.S. Geological Survey Open-File Report 2011-1196](#), 312 p.
 79. Iwanowicz, D.D., C.A. Ottinger, K.R. Echols, T. Wood, S.P. VanderKooi, B.H. Rosen, and S.M. Burdick. 2010. *Skin bacterial flora of age-0 Lost River and shortnose suckers in 2008: Nature Conservancy Delta Restoration Project and Upper Klamath Lake*. in: Thorsteinson, Lyman, VanderKooi, Scott, and Duffy, Walter, eds., 2011, Proceedings of the Klamath Basin Science Conference, Medford, Oregon, February 1–5, 2010: [U.S. Geological Survey Open-File Report 2011-1196](#), 312 p.
 80. Rosen, B.H., C.A. Langtimm, D.L. DeAngelis, M.D. Krohn, T.J. III Smith, B.M. Stith, and E.D Swain. 2010. *Past and Future Impacts of Sea Level Rise on Coastal Habitats and Species in the Greater Everglades*. Sea Level Rise 2010 conference, Corpus Christi, TX, Mar 1-3. <http://www.sealevelrise2010.org/video/slr15.html>
 81. Rosen, B.H. 2010. *Introduction to Cyanobacteria, Toxins, and Taste-and-Odor Compounds* as the introduction to the workshop: Guidelines for Design, Sampling, Analysis, and Interpretation for Cyanobacterial Toxin and Taste-And-Odor Studies in Lakes and Reservoirs. Seventh National Monitoring Conference, Denver, CO, Apr 26-29.
 82. Graham J.L., K.A. Loftin, B.H. Rosen, and A. St. Amand. *Guidelines for Design and Sampling for Cyanobacterial Toxin and Taste-and-Odor Studies in Lakes and Reservoirs*. Seventh National Monitoring Conference, Denver, CO, Apr 26-29.
 83. Rosen, B.H. 2010. *A Conceptual Model for Climate Change in the Everglades*. Joint meeting of the South Florida Ecosystem Restoration Science Coordination Group and the Working Group. Coral Springs, FL Sep 15-16. http://www.sfrestore.org/wg/documents/handouts_wg.html
 84. Rosen, B.H. 2011. *Overview of CEMs: Drivers, Stressors and Link to Ecological Effects and Attributes*-Sea Level Rise workshop with Florida Sea Grant, Florida Atlantic University, Everglades National Park and the Fish and Wildlife Service. Boca Raton, FL, April 5-7.
 85. Rosen, B.H. and G.R. Best. 2011. *Conceptual Ecological Model Updates for the Everglades: Climate Change Considerations*. National Conference on Ecosystem Restoration. Baltimore, MD, Aug 1-5.

86. Rosen, B.H. 2011. *Cyanobacterial toxicology: composition, production and impacts* (Invited speaker), Cyanobacteria and Human Health: Merging Ecology, Epidemiology and Neurologic Disorders Workshop, Bowdoin College, ME, Aug 4-6.
87. Echols, K.R., T.M. Wood, C.A. Ottinger, B.H. Rosen, S.M. Burdick, and S.P. Vanderkooi. 2011. *Cyanobacterial Toxins Found in Upper Klamath Lake, Oregon: Implications for Endangered Fish*. Cyanobacteria and Human Health: Merging Ecology, Epidemiology and Neurologic Disorders Workshop, Bowdoin College, ME, Aug 4-6.
88. Wilson A.E., R.A. Wright, K.K. Schrader, G.L. Curvin, B.H. Rosen, and J.L. Graham. 2012. *Creating Cost-effective Regional Algal Bloom Monitoring Network*. 8th National Monitoring Conference, Portland, OR, Apr 30-May 4.
89. Rosen, B.H. 2012. *Why Cyanobacteria Dominate the World: Ecological Strategies*. 8th National Monitoring Conference, Portland, OR, Apr 30-May 4.
90. Loftin, K.A, B.H. Rosen, R.F. Lane, J.L. Graham, and S.P. Keyde. 2012. *Evaluation and comparison of sample splitting and cell lysis techniques for microcystin producing cyanobacteria*. 8th National Monitoring Conference, Portland, OR, Apr 30-May 4.
91. Rosen, B.H., J. Komárková, and J. Komárek. 2012. *Cyanobacteria Species from Florida Everglades Floc*. 9th International Wetlands Conference, Orlando, FL Jun 3-8.
92. Skalak, K., V. Engel, J. Harvey, D.T. Ho, L. Larsen, S. Newman, B. Rosen, C. Saunders, F. Sklar, and J. Trexler. 2012. *A Physical Model of Flow Reconnection to Achieve Ecological Restoration in the Everglades*. 9th International Wetlands Conference, Orlando, FL Jun 3-8.
93. Sklar, F., S.E. Hagerthey, S. Newman, C.J. Saunders, J. Trexler, L. Larson, J. Harvey, V. Engel, D. Ho, K. Skalak, S. Wilcox, and B. Rosen. 2012. *Application of adaptive management for wetland restoration: An overview of a large-scale Everglades physical model*. 9th International Wetlands Conference, Orlando, FL Jun 3-8.
94. Rosen, B.H., C. Saunders, F.H. Sklar, J. Harvey, L. Larson, S. Wilcox, S. Newman, J. Trexler, D. Ho. 2013. *An Adaptive Management Example from the Everglades: The Decompartmentalization Physical Model*. 5th National Conference on Ecosystem Restoration (NCER), Chicago, IL Jul 29-Aug 2.
95. Rosen, B.H., C. Saunders, C. Coronado-Molina, F.H. Sklar, S. Newman, J.W. Harvey, L.G. Larsen, S.M. Wilcox, J. Trexler, D. Ho. 2014. *The Everglades: How algal species richness responds to experimental flow pulses*. Joint Aquatic Sciences Meeting, Portland, OR, May 18-23
96. Rosen, B.H. 2014. *The problems with cyanobacteria: ecological strategies, toxin production and impacts*. United and South East Tribal conference, Bar Harbor, ME June 2-4.
97. St. Amand, A., K. Wagner, B.H. Rosen, and A. Chapman. 2014. *Collection, identification, ecology and control of nuisance freshwater algae*. 34th International Symposium North American Lake Management, Tampa, FL. Nov. 11.
98. Rosen, B.H. 2015. *Cyanobacterial Ecological Strategies*. Collecting Global Expertise to address the problem of harmful algal blooms: NSF & NOAA-sponsored workshop, Bowling Green State University, OH. Apr 13-14.
99. Rosen, B.H., Schulte, N., Gaiser, E. and Saunders, C. 2015. *Cyanobacterial mediated mineralization of a rare form of calcium carbonate in the Everglades: vaterite*. Greater Everglades Ecosystem Restoration Conference, Coral Springs, FL, Apr 21-23.
100. Harvey, J., Larsen, L., Choi, J., Gomez-Velez, J., Buskirk, B., Swartz, A., Saunders, C., Newman, S., Sklar, F., Rosen, B.H., and Ho, D. 2015. *The Decompartmentalization Physical Model (DPM) experiment: testing the restoration of historic high flows in a disconnected Everglades*. Greater Everglades Ecosystem Restoration Conference, Coral Springs, FL, Apr 21-23.
101. Rosen, B.H., 2015. *Animal and human health at risk from algal toxins in our water: neurotoxins, hepatotoxins and climate change*. DOI Emergency Management Council Off-site Meeting. New Orleans,

- LA, May 7. (Invited speaker)
102. Rosen, B.H., 2015. *Animal and human health at risk from algal toxins in our water: neurotoxins, hepatotoxins and climate change*. Tribal Land and Environment Forum, Minneapolis, MN, Aug 17-20. (Invited speaker)
http://itepsrv1.itep.nau.edu/itep_course_downloads/TLF/TLF_2015_Presentations/Thursday/THURS_1030_AnimalandHumanHealth_Rosen.pdf
 103. Rosen, B.H., 2015. *Cyanotoxins in our water: neurotoxins, hepatotoxins and climate change*. Lake Superior Binational Program, Sept. 16 (Invited speaker).
 104. Rosen, B.H., 2015. *Cyanotoxins in our water: neurotoxins, hepatotoxins and climate change*. South Florida Aquatic Plant Management Society, Oct. 22 (Invited speaker).
 105. Rosen, B.H. 2016. *Cyanobacteria 101 (and why you need to know more)*. EPA Region 8 Annual Tribal workshop. (Invited speaker). Denver, CO. Mar 3.
 106. Rosen, B.H. 2016. *Workshop for Tribes on Harmful Algal Blooms and Sampling Methods*. EPA Region 10, Seattle, WA, Mar 29-Apr 1. (Invited speaker and workshop leader).
 107. Rosen, B.H., 2016. *Understanding Cyanobacterial Ecological Strategies*. 10th National Water Quality Monitoring Conference, Tampa, FL. May 2-6.
 108. Rosen, B.H. 2016 and S. Rushforth. *Shedding Light on Cyanobacteria*. EPA Nation-wide webinar, May 11th. (Invited speaker). [audio] <https://www.epa.gov/nutrient-policy-data/more-information>.
 109. Rosen, B.H. 2016. *Ecological Strategies that Help Cyanobacteria Dominate the World*. American Society of Limnology and Oceanography, Santa Fe, NM Jun 6-9. (Invited)
 110. Rosen, B.H., 2016. *Understanding Harmful Algal Blooms and their potential impacts related to climate change*. Tribal Land and Environment Forum, Uncasville, CT, Aug 16-19. (Invited speaker).
http://itepsrv2.ucc.nau.edu/itep_course_downloads/TLF/TLF_2016_Pres/Day/Thursday/THURS_1030_HarmfulAlgalBlooms_Rosen.pdf
 111. Rosen, B.H., 2016. *Guide to Harmful Freshwater Algal Blooms for Native American Communities*. FEMA Region IV & Tribal Nations Workshop. Atlanta, GA, Aug 23-25. (Invited speaker)
 112. Rosen, B.H., 2016. *Freshwater Cyanobacteria Identification*. EPA Region 10 (Webinar Sept. 20th)
 113. Rosen, B.H., 2016. *Cyanobacteria Ecological Strategies and Impacts on Human Health*, 36th Annual Symposium of the North American Lake Management Society (workshop instructor), Nov 1-4, Banff, Canada
 114. Rosen, B.H., 2016. *Freshwater Cyanobacteria Identification*, 36th Annual Symposium of the North American Lake Management Society (workshop instructor), Nov 1-4, Banff, Canada
 115. Rosen, B.H., 2016. *Cyanobacteria Ecological Strategies and Impacts on Human Health; Cyanobacteria Identification* (invited Workshop leader); American Water Works Association, 2016 Water Quality Technology Conference & Exposition, Indianapolis, IN, Nov 13-17.
 Rosen, B.H., 2016.
 116. Paine E.C., T. Slonecker, N.S. Simon, B.H. Rosen, R. Resmini, D.W. Allen. 2017. Optical Characterization of two cyanobacteria genera, *Aphanizomenon* and *Microcystis*, with Hyperspectral Microscopy. (seminar at the National Institute of Standards and Technology, June 7th)
 117. Rosen, B.H., S. Newman, J. Trexler, S. Bornhoeft, E. Tate-Boldt, and C. Saunders. 2017. *Why the primary producers (algae and cyanobacteria) are the key early responders to nutrient and water flow changes in the Everglades*. Greater Everglades Ecosystem Restoration Conference, Coral Springs, FL, Apr 17-20.
 118. Marazzi, L., B.H. Rosen, S. Newman, E. Gaiser, E. Tate-Boldt, S. Bornhoeft, and J. Trexler, 2017. *How will periphyton respond to water flow and nutrient loading changes in the Everglades?* Greater Everglades Ecosystem Restoration Conference, Coral Springs, FL, Apr 17-20.
 119. Newman, S, E. Tate-Boldt, B. Rosen, A. Wright, C. Saunders, C. Hansen, M. Manna. 2017. *Effects of increased flow and associated phosphorus loads on microbial responses*. Greater Everglades Ecosystem

- Restoration Conference, Coral Springs, FL, Apr 17-20.
120. Patterson, A.N., P. Gorman, D. Rudnick, F. Sklar, A. McLean, A. LoSchiavo, J. Browder, E. Hughes, B. Rosen, R. Elliott, G. Ehlinger, K. Keefe, S. Traxler. 2017. *Development of the RECOVER five year plan*. Greater Everglades Ecosystem Restoration Conference, Coral Springs, FL, Apr 17-20.
 121. Bornhoeft, Sarah, B. Rosen, S. Newman, C. Saunders, and J. Trexler. 2017. *Influence of an experimental sheet flow regime on aquatic food webs of the central Everglades*. Greater Everglades Ecosystem Restoration Conference, Coral Springs, FL, Apr 17-20.
 122. Harvey, J., L. Larsen, J. Choi, C. Saunders, S. Newman, B. Rosen, and D. Ho. 2017. *Testing the restoration of a free-flowing Everglades: The decompartmentalization physical model (DPM) high-flow experiments*. Greater Everglades Ecosystem Restoration Conference, Coral Springs, FL, Apr 17-20.
 123. Saunders, C., S. Newman, E. Tate-Boldt, R. Jaffé, P. Regier, B.H. Rosen, L. Larsen, J. Harvey, E. Cline, C. Zweig, J. Choi, M. Manna, C. Hansen, D. Ho, and F. Sklar. 2017. *Flow impacts on P and organic matter cycling in the ridge and slough: lessons from landscape budgets in the Decom Physical Model and Shark Slough, ENP*. Greater Everglades Ecosystem Restoration Conference, Coral Springs, FL, Apr 17-20.
 124. Rosen, B.H. 2017. *Field and laboratory guide to freshwater cyanobacteria harmful algal blooms for Native American and Alaska Native Communities*. EPA Region 2 Webinar.
 125. Stahlhut, K.N., B.H. Rosen and J. Hall. 2018. *The Desmids of Arthur R. Marshall Loxahatchee National Wildlife Refuge*. 6th UF Water Institute Symposium, Gainesville, FL, Feb. 6-7.
 126. Davis, T., B. Kramer, K. Meyer, G. Oh, B. Rosen, and C. Gobler. 2018. *Spatiotemporal Survey of the 2016 Lake Okeechobee and St. Lucie River Cyanobacterial Bloom*, International Association for Great Lake Research, IAGLR 2018, Toronto, Jun. 18-22.
 127. Saunders, C.J., Newman, S., Tate-Boldt, E., Jaffe, R., Regier, P., Rosen, B.H., Harvey, J., Cline, E., Zweig, C., Choi, J., Manna, M., Hansen, C. and Sklar, F. 2018. *Flow impacts on P and OM cycling the ridge and slough: Lessons from landscape budgets in the Decom Physical Model and Shark Slough, ENP*. 12th International Symposium on Biogeochemistry of Wetlands, Coral Springs, FL April 23-26.
 128. Rosen, B.H. Loftin, K.A. Graham, J.L., Stahlhut, K.N., Riley, J.M., Johnston, B.D., and Senegal, S. 2018. *Understanding the Effect of Salinity Tolerance on Cyanobacteria Associated with a Harmful Algal Bloom in Lake Okeechobee, Florida*. North American Lake Management Society Annual Conference, Cincinnati, OH Nov. 1-4, 2018.
 129. Rosen, B.H. 2018. *The role of cyanobacteria in nucleating the precipitation of calcium carbonate in the Everglades: Vaterite and Aragonite*. 12th International Symposium on Biogeochemistry of Wetlands, Coral Springs, FL April 23-26.
 130. Rosen, B.H. 2019. *Why Cyanobacteria Dominate the World: Ecological Strategies*. 11th National Monitoring Conference, Denver, CO, Mar. 25-29.
 131. Graham, J.L., N.M. Dubrovsky, G.M. Foster, L.R. King, K.A. Loftin, B.H. Rosen, and E.A. Stelzer, 2019. *Potential for Cyanotoxin Occurrence in the Nation's Large Rivers*. 11th National Monitoring Conference, Denver, CO, Mar. 25-29.
 132. Rosen, B.H., Newman, S., Saunders, C., Trexler, J., Harvey, J., Coronado-Molina, C., and Tate-Bolt, E. 2019. *Algae indicators of ecosystem response in the Decom Physical Model High-flow experiment*. Greater Everglades Ecosystem Restoration Conference, Coral Springs, FL, Apr 23-26.

Recent Invited Speaker/Workshops:

- 1) Tribal Lands and Environment Forum, 2015; 2016: *Animal and human health at risk from algal*

- toxins in our water: neurotoxins, hepatotoxins and climate change*
- 2) American Water Works Association Water Quality Technology, 2016; 2017: *Cyanobacteria Ecological Strategies and Impacts on Human Health* (lecture) & *Cyanobacteria Identification* (Workshop)
 - 3) North American Lake Management Society, 2016; 2017; 2018; 2019: *Cyanobacteria Ecological Strategies and Impacts on Human Health* (lecture) & *Cyanobacteria Identification* (Workshop)
 - 4) EPA Region 4, April 2018: *Cyanobacterial Ecological Strategies and how these Impact Monitoring Techniques*
 - 5) EPA Region 10 (Manchester Lab), 2017; 2018 (invited for 2019): Workshops for States and Tribes: *Cyanobacteria 101 (and why you need to know more)* & *The problems with cyanobacteria: ecological strategies, toxin production and impacts*
 - 6) City College of New York, 2017: *Cyanobacteria ecological strategies and toxin production*
 - 7) United South and Eastern Tribes, 2017: *Harmful Algal Blooms and Harmful Effects of Pseudo-nitzschia on Shellfish and Marine Life*
 - 8) University of South Florida College of Public Health Sept. 2018: *Cyanobacteria Ecological Strategies and Impacts on Human Health*
 - 9) Florida Water Forum, Oct. 2018: *Harmful Algal Blooms “Red and Green... What Does it all mean?”*
 - 10) Everglades Coalition Conference, Jan. 2019: *Harmful Algal Blooms: Is Florida Up to the Challenge? (invitation accepted; but canceled due to Government Shutdown)*
 - 11) Save our Waters summit, Aug. 2019. *Cyanobacteria Ecological Strategies and Impacts on Human Health.*
 - 12) Florida Sea Grant, Harmful Algal Blooms State of the Science Symposium, Aug. 2019: *Cyanobacteria Ecological Strategies: Initiation, development and termination of a bloom.*
 - 13) 6th Annual Environmental Education Alliance, Oct. 2019: *What is a Harmful Algal Bloom?*
 - 14) 10th US HABs Symposium, Nov. 2019: *Freshwater Phytoplankton Identification Workshop.*