

MICHAEL HERBERT HEIM

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Education

M.S. in **Horticultural Science** from the University of Minnesota, 1993.

B.A. in **Broad Field Science** from the University of Wisconsin- Superior, 1991.

B.S. in **Biology** (with a **History** minor) from the University of Wisconsin- Superior, 1987.

Appointments

2011- present Business, Science, Math, and Applied Technology Faculty; Lac Courte Oreilles Ojibwe University, 13466 W. Trepania Rd., Hayward, WI. 54843.

Website: www.lco.edu, Phone: 715-634-4790.

Supervisor- Aundrea Worthing, Interim Academic Dean

8/93-6/12 High School Science Instructor; Lac Courte Oreilles Ojibwe School, Hayward, WI.

9/93-12/93 German Language Instructor; Wisconsin Indianhead Technical College, Hayward, WI.

6/92-7/06 Environmental Science Instructor; Hayward Community Schools, Hayward, WI.

9/91-6/93 Substitute Teacher; Hayward Area Schools, Northwestern Wisconsin.

4/91-5/91 Outdoor Education Instructor; Northwood and St. Croix Schools, Minong, WI.

1/84-6/91 Research Assistant; Biology Department, University of WI- Superior, Superior, WI.

6/86-7/91 Outdoor Education Instructor; Youthsummer Program, University of Wisconsin- Superior, Superior, WI.

9/87-6/89 Research and Teaching Assistant; Horticultural Science Department, University of Minnesota, St. Paul, MN.

6/87-8/87 Horticulturist; University of Minnesota Landscape Arboretum, Chanhassen, MN.

1/86-6/87 Teaching Assistant; Biology Department, University of Wisconsin- Superior, Superior, WI.

5/84-8/84 Gypsy Moth Surveyor; U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Milwaukee, WI

Publications

A quixotic gardener: Trying to grow palms outdoors an hour's drive from Lake Superior. *Rock Garden Quarterly* 82 (2): 144-151. Spring 2024.

Alabama Appalachian fern encounters. *Hardy Fern Foundation Quarterly* 33 (3): 73-74. Summer 2023.

Botanical beauties of the Alabama Appalachians. *Rock Garden Quarterly* 81 (2): 98-113. Spring 2023.

Lovely exotic ferns enhance the northwoods. *Hardy Fern Foundation Quarterly* 32 (4): 91-96. Fall 2022.

Untitled (*Rhododendron minus* cold-hardiness). *Journal American Rhododendron Society* 76 (4): 195. Fall 2022.

How cold will they go? Bamboos in the northwoods. *Bamboo* 42 (4): 8-16. Winter 2021-22.

Rhododendron leaves support a curious organism. *Journal American Rhododendron Society* 76 (2): 75-77. Spring 2022.

Revisiting a lush fernery in far northern Wisconsin. *Hardy Fern Foundation Quarterly* 31 (1): 4-10. Winter 2021.

Tiny prairie remnants yield yet tinier cacti. *Rock Garden Quarterly* 79 (1): 40-43. Winter 2020-2021.

In the land of the balsam fir, cacti thrive. *Rock Garden Quarterly* 79 (1): 28-39. Winter 2020-2021.

Growing rhododendron species seed from Russia. *Journal American Rhododendron Society* 74 (1): 12-13. Winter 2020.

The polar plunge: Can boxwood tolerate winters in northern Wisconsin? *The Boxwood Bulletin* 59 (2): 4-6. Fall/Winter 2019.

A wonderland of ferns: sharing a piece of land with twenty-four native species. *Hardy Fern Foundation Quarterly* 29 (1): 16-19. Winter 2019.

A lush fernery in far northern Wisconsin Part I. *Hardy Fern Foundation Quarterly* 28 (2): 40-46. Spring 2018.

Heim, Michael H., Corbin J. Schuster, and Kimberly A. Stewart. Comparing microclimates and coverage by foliar epiphytes that affect photosynthesis in a secondary forest elevational gradient in Costa Rica. 2017. Unpublished.

Spring Lake Aquatic Plants. 2012. The Spring Lake Association, Sawyer County, Wisconsin.

Return of the ericads: Students dig and reestablish a prehistoric species. *Journal American Rhododendron Society* 64 (1): 19-21. Winter 2010.

Windigo Lake's Aquatic Plants. 2011. The Windigo Lake Association, Sawyer County, WI.

Huckleberries get a second chance at Lac Courte Oreilles. *Bureau of Indian Education* 2 (2): 2. Fall 2009.

Evergreen Eden in the northwoods. *Journal American Rhododendron Society* 61 (4): 195-197. Fall 2007.

The fate of *Magnolia grandiflora* seedlings in northern Wisconsin. *Magnolia* 72: 23-25. 2002.

Wisconsin cold-hardiness test compilation. *Hardy Enough: The Journal of Experimental Gardening* 3 (5,6): 22-23.

An Overview of Allelopathy in Temperate-Zone Trees. 1992. **MS Thesis**, University of Minnesota.

Planting for the future: The Superior Campus Arboretum. *Wisconsin Academy of Sciences, Arts and Letters*, April 1991.

Gitar, R. Douglas, Donald W. Davidson, Michael Heim, Paul Rounce. Urban street trees of Superior, Wisconsin. *Wisconsin Academy of Sciences, Arts and Letters*, April 1991.

Rounce, Paul J., Donald W. Davidson, R. Douglas Gitar, Michael Heim, Robbye Johnson, Klancy Kennedy. 1990 *Lycopodium* research to the Apostle Islands. *Wisconsin Academy of Sciences, Arts and Letters*, April 1991.

Landscaping with prickly-pear cacti. *Minnesota Horticulturist* 117 (1): 26-27. January 1989.

The cultivation of our native clubmosses. *Minnesota Horticulturist* 116 (1): 24-27. January 1988.

Published Photography

Escobaria vivipara. Front and back covers of *North American Rock Garden Society Quarterly* 79 (1). Winter 2020-2021.

Lichens on auto glass. In *North American Rock Garden Society Quarterly* 73 (4): 343. Fall 2015.

St. Nick's progress. In *North American Rock Garden Society Quarterly* 74 (1): 80. Winter 2015-2016.

Grants

2017-18. Authored and was awarded the National Science Foundation grants *Costa Rica International Research Experience* thru the All Nations Louis Stokes Alliance for Minority Participation Program, the SKC Tribal Colleges and Universities Program, the Organization for Tropical Studies, along with the Native American Pacific Islander Research Experience Program. The grants allowed two students and me to design, conduct, and present short-term research projects in the pre-montane rainforest of the Las Cruces Biological Station.

2017. Authored and was awarded grant *Building Sustainable Pathways* thru the American Indian College Fund for faculty professional development in order to learn to quantify steps which would need to be taken to conserve lycophytes from regional extirpation and consequently pass that information on to my students and the community. Lac Courte Oreilles Ojibwe College.

1995. Coauthored and was awarded grant *Awareness of Aquatic Ecosystems Gained by Personal Observation, Technical Understanding, and Ojibwe Cultural Teachings* for snorkeling equipment and underwater cameras to enable high school biology students to appreciate, study, and document the comparative ecology of area lakes. Lac Courte Oreilles Ojibwe School.

Presentations

- 9/23, 4/24 *Assisted Migration: Forest Planting for Climate Change*. Seven Generations Summit, Lac Courte Oreilles Ojibwe University, Hayward, WI and the Hunt Hill Audubon Sanctuary, Sarona, WI.
- 2014-present Natural history field trip programs. Lac Courte Oreilles Ojibwe University Extension Program. Supervisor- Director of Extension: Ramona Morrow.
- 8/22, 8/23 *Plant Communities*. Wisconsin Master Naturalist Course. Hunt Hill Audubon Sanctuary, Sarona, WI.
- 11/22 *Perspectives on Invasive Plants*. Public Lecture Series, University of Wisconsin-Eau Claire—Barron County, Rice Lake, WI.
- 9-10/22 *The Geological Story of the Upper Midwest in 3D*. Seven Generations Summit, Lac Courte Oreilles Ojibwe University and the Sawyer County Historical Society, Hayward, WI.
- 2012-21 *Pushing Hardiness Limits: Rhododendrons and Their Companions in the Northwoods* at
1) American Rhododendron Society, University of Wisconsin Arboretum, Madison
2) Rice Lake Garden Club, Rice Lake, WI 3) American Rhododendron Society Annual Convention, Halifax, Nova Scotia (via Zoom)
- 5/21 *Unusual Hardy Plants for Open Sites* (via Zoom). University of Wisconsin- Madison Extension, Ashland/Bayfield Master Gardener Program, Ashland, WI.
- 7/20 *Trees of the Ceded Territory* (via Zoom). Cable Natural History Museum, Cable, WI.
https://www.youtube.com/watch?v=Dqtv0FL8Arl&list=PLD_FT7vg7Jrwa15fanl--7ErukRlf2JG&index=11
- 10/19 *Protecting Our Forests*. Lac Courte Oreilles Ojibwe College
- 7/19 *Geological History of Northwestern Wisconsin*. Cable Natural History Museum, Cable, WI.
- 5/19 *Costa Rica International Research Experience*. Lac Courte Oreilles Ojibwe College.
- 6/18 *Native Wild Edible Plants*. Hayward Senior Resource Center, Hayward, WI.

- 2014-17 *Zone Envy: Pushing Hardiness Limits* at:
 1) North American Rock Garden Society, Minneapolis 2) Spooner Garden Club, Spooner, WI 3) Northwoods Gardening Seminar, Minong, WI 4) Lac Courte Oreilles Ojibwe College public outreach program 5) Director and staff of Denver Botanical Gardens, Denver 6) Eagle Hill Institute, Steuben, ME, 7) Wilson Botanical Garden, Las Cruces Biological Station, Costa Rica.
- 6/14 Closed bog field trip. Couderay Waters Regional Land Trust, Hayward, WI.
- 10/13 *Geological History of the Hayward Area* field trip. Cable Natural History Museum, Cable, WI.
- 4/12 Wetland types. Windigo Lake Association, Hayward, WI.
- 4/11 Local geology. Windigo Lake Association, Hayward, WI.
- 3/05 *Plants for Greenhouses*. Teacher to Teacher Conference, Weyerhaeuser, WI.
- 8/03 Experimental garden tour. Cable Natural History Museum, Cable, WI.
- 3/01 *Beyond Hostas: Gardening in the Shade*. Northwoods Gardening Seminar, Minong, WI.
- 1989-90 Guided UW- Superior greenhouse tours for school groups, Superior, WI.
- 2/85 Acid Rain Town Meeting facilitator and presenter. Winter, WI and Hayward, WI. Sigurd Olson Environmental Institute, Ashland, WI
- 6/84 *Herbal Medicine and Edible Plants*, presentation and field trip. Project HAWK, Hayward, WI.
- 9/83 Ethnobotany and Wisconsin mushrooms seminars. Lac Courte Oreilles Ojibwa Community College, Hayward, WI.
- 7/80-7/81 Nature Lecture Series field trips, Cable Natural History Museum, Cable, WI.

Advisory and Review Committees

- 2022-present Landscape Committee member, Lac Courte Oreilles Ojibwe University, Hayward, WI.
- 2020-21 Development Board member, Lac Courte Oreilles Ojibwe University, Hayward, WI.
- 2017-18 Advisory Board Working Group member, Lac Courte Oreilles Ojibwe University, Hayward, WI.
- 2016-present (member)
 2020-present (Secretary) Curriculum Committee Secretary, Lac Courte Oreilles Ojibwe University, Hayward, WI.
- 2012-present Business, Science, Math, and Technology (BSMAT) Committee member, Lac Courte Oreilles Ojibwe University, Hayward, WI.
- 2004-present Spring Lake Association Board member, Hayward, WI.
- 2003-12 Couderay Waters Regional Land Trust Board member, Hayward, WI.
- 2005-08 Cable Natural History Museum Board member, Cable, WI.
- 1982-83 Northwestern Wisconsin Mining Impact Committee member, Hayward, WI.

Leadership

- 2013-present Traditional Plants Contest coach, American Indian Higher Education Consortium (AIHEC) Student Conference
- 2024 Traditional Plants Contest coordinator, American Indian Higher Education Consortium (AIHEC) Student Conference

Research

- 1977-present Cold-tolerance and adaptability of various woody and herbaceous plant taxa in northern Wisconsin. Includes assisted migration of species from the southeast as well as climate change rescue of species from the inland rain forests of the northwest. Hayward, WI. <http://www.torreyguardians.org/wisconsin-heim.html>
- 2018 Soil A-horizon depth, soil texture, and light levels appear to have no effect on shampoo ginger (*Zingiber spectabile*) establishment in Costa Rica. Sponsored by a National Science Foundation grant.
- 2017 Foliar epiphyte and disease coverage correlated with an elevational gradient in a mid-Montane rainforest in Costa Rica. Sponsored by a National Science Foundation grant.
- 2010-12 Reintroduction of the rare box huckleberry (*Gaylussacia brachycera*) into northern Wisconsin and comparison of the performance of several accessions. Sponsored by the National Arboretum, Washington, D.C. Lac Courte Oreilles Ojibwe High School, Hayward, WI.
- 1984-90 Basic Anatomical, Taxonomic, and Ecological Studies in the Plant Genus *Lycopodium*. Biology Department, University of Wisconsin- Superior, Superior, WI.
- 1989 City of Superior Urban Tree Survey. Biology Department, University of Wisconsin- Superior, Superior, WI.
- 1987-88 Induction of tetraploidy in the 'Lights' series of deciduous azaleas to further the breeding program. Horticulture Department, University of Minnesota, St. Paul, MN.

Awards

- 2015 American Indian College Fund LCOOCC Faculty Member of the Year.
- 1999 Wisconsin Garden Club Federation Bronze Award for continuing research on cold-hardy plants.

Licenses

State of Wisconsin Nurse Aide Registry (CNA). Expired.

State of Wisconsin Department of Public Instruction Teaching License Grades 7-12: 601 Broad Field Science and 605 Biology/Life Science. Expired.

Community Outreach

- 10-11/22 My discovery of Cambrian fossils in northwestern Wisconsin featured in The Sawyer County Record 10/26/22 and Wisconsin Public Radio 11/3/22
<https://www.wpr.org/class-discovers-trace-fossil-rocks-dating-back-more-500m-years->

[northern-wisconsin](#)

- 6-8/22 My plant hardiness testing featured on WDSE-TV (PBS) programs *The Slice* and *Great Gardening*. <https://www.youtube.com/watch?v=WxbNqtZ2U6I>
<https://www.youtube.com/watch?v=UJTMcJxpgR0>
https://www.youtube.com/watch?v=Z8Y7TR7_jvo
- 6/21 Designed educational signage at Henk's Park, Town of Bass Lake, Sawyer County, WI.
- 1/15 Perspectives on Forest Stewardship, guest editorial. In *The Sawyer County Record* newspaper, Hayward, WI.
- 2014-15 Guest on WOJB's Morning Program discussing horticulture and plant ecology, allowing listeners to call in their questions. Hayward, WI.
- 2013 Created a list of showy native shoreline plants for the Couderay Waters Regional Land Trust, Hayward, WI to use when establishing shoreline buffers.
- 2010-11 Designed local geology and forest structure kiosks, helped plot nature trail loop, wild plant inventory, plotted locations for plant signs. Weiss Community Library Park, Hayward, WI.
- 2010-11 Conducted invasive plant surveys of Windigo Lake for the Windigo Lake Association, Hayward, WI.
- 9/90-1/91 Designed a self-guided tour of the UW- Superior greenhouse, Superior, WI.
- 7/89-9/89 Helped plan the UW- Superior campus arboretum, Superior, WI.
- 7/86 The Great Smoky Mountains, article on college study trip. In *The Superior Evening Telegram*, Superior, WI.
- 1/85 Translated German acid precipitation research into a diagrammatic handout for the public. Sigurd Olson Environmental Institute, Ashland, WI.
- 11/83-1/84 Volunteer announcer, *Wisconsin Outdoors* program, WOJB radio, Hayward, WI.

LCOOU Courses Taught and Curriculum Developed

ETHNOBOTANY beginning in 2011. Taught as well on the distance learning system Zoom. Revised the curriculum, which includes the development of a PowerPoint for each chapter and specific classroom and field labs. During the covid emergency, my own YouTubes were incorporated, as well as lecture and lab modifications for Zoom to maintain educational quality. Also developed Gikinoo' amaagan Odanokiiwin Student Learning Project which incorporates Ojibwe knowledge and values, in this instance into a native Plant Journal.

ENVIRONMENTAL SCIENCE beginning in 2013. Taught as well on the distance learning system Zoom. Revised the curriculum, which includes development of a PowerPoint for each chapter and specific classroom and field labs. Also developed Gikinoo' amaagan Odanokiiwin Student Learning Project which incorporates Ojibwe knowledge and values, in this instance into a report on a local environmental issue.

EARTH SCIENCE beginning in 2014. Taught as well on the distance learning system Zoom. Developed a PowerPoint for each chapter and incorporated specific classroom and field labs, along with geological specimens, into the revised curriculum. Also developed Gikinoo' amaagan Odanokiiwin Student Learning Project which incorporates Ojibwe knowledge and values, in this instance a research paper.

GENERAL ANIMAL BIOLOGY AND ECOLOGY 2015. Taught as well on the distance learning system ITV. Incorporated updated materials including YouTubes into lessons.

HUMAN ANATOMY AND PHYSIOLOGY I & II 2015-2023. Taught as well on the distance learning system Zoom. Incorporated updated materials including YouTubes into lessons. Also developed Gikinoo' amaagan Odanokiiwin Student Learning Project which incorporates Ojibwe knowledge and values, in this instance a research paper.

ANATOMY, PHYSIOLOGY, AND DISEASE in 2015. Incorporated updated materials including YouTubes into lessons. Also developed Gikinoo' amaagan Odanokiiwin Student Learning Project which incorporates Ojibwe knowledge and values, in this instance a research paper.

INTRODUCTION TO PLANT SCIENCE beginning in 2016. Taught as well on the distance learning system Zoom. Developed a PowerPoint for each chapter and incorporated specific classroom activities, along with botanical specimens, into the revised curriculum as well as modifications for Zoom to maintain educational quality during the covid emergency. Also developed Gikinoo' amaagan Odanokiiwin Student Learning Project which incorporates Ojibwe knowledge and values, in this instance a research paper.

FIELD METHODS IN NATURAL RESOURCES beginning in 2016. Co-instructor, assisting with revising and updating curriculum as well as modifications for Zoom to maintain educational quality during the covid emergency. Sole instructor, 2021.

INTRODUCTION TO FORESTRY beginning in 2018. Taught as well on the distance learning system Zoom. Developed a PowerPoint for each chapter and incorporated specific classroom activities and field studies into the revised curriculum as well as modifications for Zoom to maintain educational quality during the covid emergency. Also developed Gikinoo' amaagan Odanokiiwin Student Learning Project which incorporates Ojibwe knowledge and values, in this instance a forest management plan.

INTRODUCTION TO HORTICULTURE beginning in 2018. Taught as well on the distance learning system Zoom. Developed a PowerPoint for each chapter and incorporated specific classroom activities and materials into the revised curriculum as well as modifications for Zoom to maintain educational quality during the covid emergency. Also developed Gikinoo' amaagan Odanokiiwin Student Learning Project which incorporates Ojibwe knowledge and values, in this instance a research paper.

INDIGENOUS LAND STEWARDSHIP beginning in 2022. Team teaching with UW-Madison faculty and Menominee Tribal College faculty. My responsibility is to teach local geology, ethnobotany, and plant ecology.

LCOOHS Courses Taught and Curriculum Developed

Physical Science (1997 thru 2012)

Biology (1993 thru 2012)

Advanced Biology (1993 thru 2012)

Earth Science (1993 thru 2012)

General Science (1993 thru 1996)

Memberships (active participant)

American Rhododendron Society

Couderay Waters Regional Land Trust/Landmark Conservancy

Hardy Fern Foundation

North American Rock Garden Society

Spring Lake Association

Torreya Guardians

Foreign Language

Fluent in German