Seamless Environmental Education at North Temperate Lakes: K-12 students, teachers, and graduate students working together

Center for Biology Education, UW-Madison & NTL-LTER

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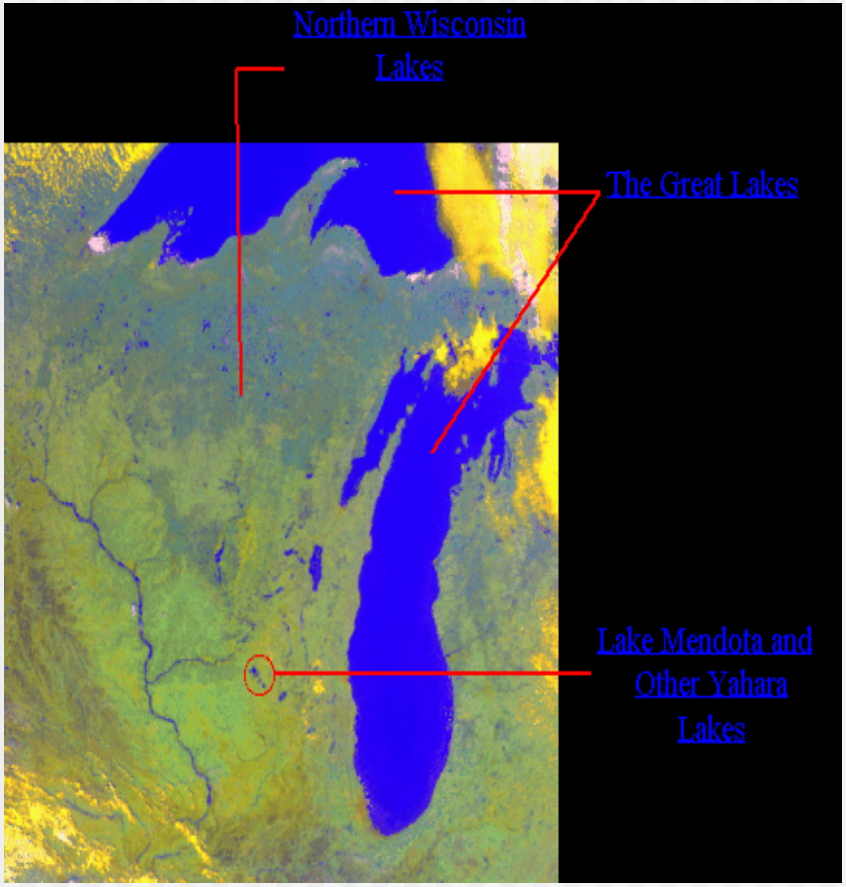
North Temperate Lakes LTER



North Temperate Lakes LTER

Research and programs link research in diverse field sites

Partnerships & Funding

- NSF-LTER School Yard Supplement (S. Carpenter)
- NSF GK-12 (T. Millar)
- NSF-Research on Education REPP (R. Lehrer & L. Schauble)
- Howard Hughes Medical Institute
- Dwight D. Eisenhower Professional Development Program (R. Bohanan)
- Wisconsin Department of Public Instruction (R. Bohanan)
- Madison Metropolitan School District TEACH (L. Wachtel)
- Ameritech
- UW-Madison
- UW System

Strategies for Innovation

- Include K-12 teachers and administrators in early stages of program planning
- Involve UW Faculty/Staff/Students
- Build new initiatives based on data from tested models
- Develop formative assessment that is iterative and that includes qualitative and quantitative measures
- Longitudinal tracking data provide indicators of program success and guide on-going program development
- Develop new programs with existing resources
- Connect program development with institutional vision and strategic planning

Integrate LTER Core Research Areas into a range of programs

- Student enrichment
- K-12 teacher professional development
- Teacher preparation
- Undergraduate curriculum
- Graduate student professional development
- Instructional materials development

Program Development

- Start small and scale up
- Imbed program assessment & education research
- Enrichment & professional development integrate LTER research & data

Program Examples

Specific programs for students of color

Program Examples

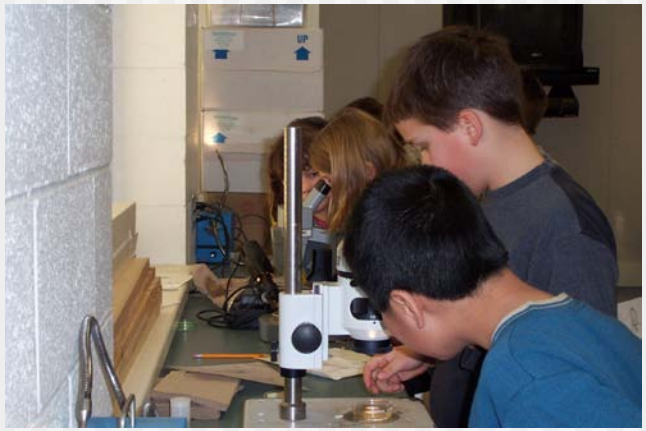
Research experiences for K-12 teachers and teachers in preparation

Program Examples

GK-12 provides unique teaching and professional development for graduate students in traditional academic and enrichment contexts

Program Examples

Connect classrooms and curriculum with LTER sites and staff



Program Examples

Engage students with the nature and culture of science

Program Examples

Provide enrichment & academic skills development for K-12 students

Program summaries since 1998

- 19 School Districts
- 166 K-12 Teachers & teachers in prep
- 418 High School Students
- 1025 K-8 Students

Program Assessment & Education Research

- Education research on model-based reasoning
- Practitioner or Action Research
- Teams developed rubrics for assessing student investigations
- Rubrics emphasized two developmental aspects
  - The first emphasized the nature and types of questions (e.g. appropriate terminology, intelligent and communicable, testable)
  - The second emphasized conceptual understanding of scientific evidence (e.g. data related to the question, empirical, reproducible)

Where It All Begins

Foster learning & create wonder & excitement about science

Future Directions

- Continue on-going activities
- Instructional materials development
  - Cases integrating LTER research & data
  - Link materials development with FOSS curriculum
  - Professional development related to environmental history

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FOR MORE INFO...

Questions?