Global Change
July 7 - 11, 2014

About the Institute
This five-day Institute will prepare you to engage your middle and high school students in a real-world study of the effects of global change on ecosystems, including the impacts of climate change, elevated carbon dioxide and ozone levels, nitrogen saturation, acid rain, and invasive species. Through lecture, hands-on data collection and field trips, participants will interact with scientists and gain new knowledge and skills. Teachers will be trained in and receive the Michigan Environmental Education Curriculum Support Climate Science & Impact unit (easily adapted to other states). National and Michigan standards for mathematics; life, Earth and physical sciences; and technology will be addressed.

The Institute will be taught by internationally-recognized researchers from Michigan Tech University’s School of Forest Resources and Environmental Sciences, along with guest scientists from the USDA Forest Service Forest Science Lab, Northern Institute of Applied Climate Science and expert teachers. The institute provides an opportunity to interact and collaborate with teachers from across the Midwest and United States.

Participants will visit long-term field research locations used to understand the subtle impacts of nitrogen deposition and climatic variability on forest growth, examine the effects of experimental warming on northern ecosystems, and investigate a subterranean rhizotron research facility where scientists study soil carbon sequestration.

Application Deadline:
June 2, 2014

Cost: $250 off campus
$400 on campus

- **Off campus** includes
  2 graduate credits, 5 lunches, field trips, classroom supplies
- **On campus also includes**
  5 nights lodging in Hillside Place and all meals
- **Payment due:** June 2, 2014

Submit Applications online:
www.wupcenter.mtu.edu
or
2014 Global Change Teacher Institute Registration
Registration Open until Classes are filled

For More Information:
Joan Chadde, Course Coordinator
Tel: 906.487.3341
Email: jchadde@mtu.edu

This Institute is partially funded by a grant from the National Science Foundation.

Conducted by the Ecosystem Science Center of the School of Forest Resources & Environmental Science at Michigan Technological University.
Coordinated by the Western U.P. Center for Science, Math & Environmental Education.
Course Credit & Requirements
Participants will earn 2 graduate credits (FW5641/ED5641) from Michigan Technological University. Course requirements:

◊ Complete pre-course readings and reflections.
◊ Participate fully in all parts of the Institute.
◊ *Develop a 5-day teaching unit after the institute that includes five lessons* related to global change (using the rubric provided) and that meets applicable content expectations. Participants should plan to implement the unit during the 2014-15 school year.

Due September 2, 2014.

Master of Applied Science Education
The credits earned from this institute can be applied to an 18 semester-hour planned course of study for teachers working towards their Professional Certificate or a Master of Science in Applied Science Education at Michigan Tech.

Cost
Cost of the institute is: **$250 off campus** which includes 2 graduate credits, 5 lunches, field trips, and classroom supplies, or **$400 on campus** which also includes 5 nights lodging and meals. [Generous support from the National Science Foundation and the MTU School of Forest Resources & Environmental Sciences has reduced the cost of MTU tuition (official 2013/14 MTU Applied Science Education Graduate Tuition for Residents/Non-Residents is $514 per credit)]. Payment due June 2nd. Pay by credit card by calling MTU Cashier at 906.487.2247.

Financial Aid
The Michigan Space Grant Consortium K-12 Educator Incentive Program will provide up to $400 for Michigan teachers to attend workshops on math and science. For an application: [http://mi.spacegrant.org](http://mi.spacegrant.org)

Accommodations
Participants staying on campus will receive 5 nights lodging in single rooms with private baths in Michigan Tech’s new Hillside Place and all meals from Monday breakfast through Friday lunch. Easy walking distance to downtown Houghton and Michigan Tech hiking & biking trails.

Find out more about Michigan Tech at [http://www.mtu.edu/](http://www.mtu.edu/)

How to Apply
Complete teacher institute application online: 2014 Global Change Teacher Institute Registration

OR [http://wupcenter.mtu.edu/](http://wupcenter.mtu.edu/)

Application deadline June 2, 2014

Register for MTU credits at:

Questions, contact:
Lori J. Witting, Coordinator
Cognitive & Learning Sciences
Michigan Technological University
Work: 906-487-2263 Cell 906-370-9748
Email: lori@mtu.edu

Getting to Michigan Tech
Michigan Technological University is located in Houghton, MI (pop. 7,000). United Airlines is the sole airline serving Houghton (800.241.6522 or www.united.com) with 2 flights daily from Chicago. Taxi service is available by calling Copper Country Limo & Taxi at 906.482.4761.