

# ***Michigan Tech***

Create the Future . . .  
Change the World.



PHD IN ATMOSPHERIC SCIENCES

[www.gradschool.mtu.edu](http://www.gradschool.mtu.edu)

The atmospheric sciences PhD program at Michigan Tech is highly interdisciplinary. All faculty also have appointments in other academic programs, including physics, chemistry, geology, geophysics, environmental engineering, and forest resources and environmental science. Research activities and available courses reflect this breadth of background.

Students are affiliated primarily with the atmospheric sciences program and also have access to the home department of their advisor. All students take a series of three core courses (in atmospheric physics, atmospheric chemistry, and atmospheric fluid dynamics) plus additional courses as appropriate to develop depth, and participate in a weekly literature discussion or group meeting with a visiting seminar speaker every spring.

The program emphasizes original research, close collaboration with faculty advisors, interdisciplinary interactions with students and faculty across and beyond the atmospheric sciences, presentations at national and international meetings, and publications in refereed journals.



### **An Emphasis on Interdisciplinary Research and Societal Relevance**

Michigan Tech's PhD in Atmospheric Sciences stresses the field's interdisciplinary nature and societal relevance. The atmospheric sciences are rapidly evolving due to new developments in measurement and computational technologies and the need to better understand issues related to climate and air quality. Our students gain a thorough understanding of the fundamentals of atmospheric processes and properties, which prepares them to contribute to and grow with the field. A wide variety of research activities are pursued, ranging from field measurements to computer modeling, from studies of air pollution transport and chemistry to studies of the fundamental processes governing cloud formation, and from studies of climate impacts on air pollution to studies of air pollution impacts on forests, among many others.

### **Research Opportunities**

Our faculty and students research a wide range of topics. They study the impacts of human activities on the atmosphere, climate, and ecosystems, including large-scale air pollution transport and chemistry; impacts of land-use changes on biogenic emissions; climate-forcing impacts of aerosol particles; the effects of climate change on air quality; and the impacts of air pollutants on ecosystems and lakes. Research topics include the fundamental chemical and physical processes that govern these issues, including the chemistry of particles and cloud droplets, the interactions of particles with light, the chemistry of atmospheric oxidants and biogenic emissions, and the interactions between air and ice. Students and faculty investigate the atmosphere itself and the Earth's biogeochemical cycles: atmospheric turbulence, ice nucleation, volcanic emissions, and atmosphere-biosphere exchange.

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## **Outstanding Facilities**

Atmospheric sciences research groups oversee many laboratories located in multiple departments throughout the University, including separate laboratories focusing on ice physics and chemistry, cloud physics, aerosol physics, environmental chemistry of inorganic and organic compounds, aerosol chemistry, and gas-phase chemistry. Several groups have extensive field-research programs involving ground- and aircraft-based research to study particles, gases, and clouds, using both in-situ sampling and remote-sensing methods. Computer labs are available for use with global chemical transport models and for analysis of satellite remote-sensing products.

## **About Michigan Tech**

Michigan Technological University is a leading public research university of international stature, conducting research, developing new technologies, and preparing students to create the future for a prosperous and sustainable world. Michigan Tech offers more than 120 undergraduate and graduate degree programs in engineering, forestry and environmental sciences, computer sciences, technology, business and economics, natural sciences, arts, humanities, and social sciences.

[www.atmos-sci.mtu.edu](http://www.atmos-sci.mtu.edu)



## **Faculty Research**

- aerosol organic and inorganic chemistry
- aerosol physics and radiative impacts
- biogeochemical cycles
- cloud physics and chemistry
- gas phase organic and inorganic chemistry
- interactions between climate change and air quality, and between air pollution, ecosystem health, and climate
- large-scale impacts of air pollutant emissions
- remote sensing using satellite, ground-based and aircraft-based techniques
- turbulence and air-surface exchange fluxes
- volcanic gas and particle emissions and volcanic clouds

Michigan Technological University  
www.mtu.edu

Graduate School  
www.gradschool.mtu.edu

International Programs and Services  
www.ips.mtu.edu

### Michigan Technological University

1400 Townsend Drive  
Houghton, MI 49931-1295

### Graduate School

Phone: 906-487-2327  
Fax: 906-487-2284  
Email: gradadms@mtu.edu  
www.gradschool.mtu.edu

### Atmospheric Sciences Program

Phone: 906-487-2351  
Fax: 906-487-3371  
Email: atmgrad@mtu.edu  
www.atmos-sci.mtu.edu

Michigan Technological University is an equal opportunity educational institution/equal opportunity employer. 10/08

## PHD IN ATMOSPHERIC SCIENCES



### Financial Assistance

All applicants are automatically considered for financial support. Typically, 100 percent of our graduate students are financially supported through research assistantships, teaching assistantships, or fellowships.

### Admissions Requirements

Prospective students are encouraged to contact faculty members to discuss possible research topics and funding opportunities, and to ensure that their research interests fit with the those of one or more faculty members. More information is available at [www.atmos-sci.mtu.edu/](http://www.atmos-sci.mtu.edu/). Applications should include a statement of purpose that describes research interests and career plans and three letters of recommendation. The GRE general exam is required, and TOEFL scores are required for applicants whose native language is not English.

### MichiganTech



### How to Apply

1. Download an application form from the Graduate School webpage.

### APPLY ONLINE FOR FREE!

2. Submit the completed application online, or mail or fax it to the Graduate School.

3. Track the status of your application online.

Visit the Graduate School webpage for complete details about admissions and program requirements.

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