

# ATMOSPHERIC SCIENCE (GRADUATE FIELD)

Program Website (<https://www.eas.cornell.edu/eas/>)

## Field Description

Atmospheric science concerns the study of processes in the atmosphere, from the planetary boundary layer to the ionosphere. Applications relate to the analysis and prediction of weather and climate. For more information, please see our information page.

## Data and Statistics

- Research Master's Program Statistics (<https://gradschool.cornell.edu/about/program-metrics-assessments-and-outcomes/research-masters-program-statistics/?SelectGradField=39>)
- Doctoral Program Statistics (<https://gradschool.cornell.edu/about/program-metrics-assessments-and-outcomes/doctoral-program-statistics/?SelectGradField=39>)

## Field Manual

- Manual (<https://www.eas.cornell.edu/eas/programs/graduate-programs/graduate-student-handbook/>)

## Subject and Degrees

### Atmospheric Sciences

- Atmospheric Sciences (MS) (<https://catalog.cornell.edu/programs/atmospheric-science-ms/>)
- Atmospheric Sciences (PhD) (<https://catalog.cornell.edu/programs/atmospheric-science-phd/>)

## Concentrations by Subject

### Atmospheric Sciences

- atmospheric science

## Faculty

Toby R Ault (<http://www.eas.cornell.edu/faculty-directory/toby-r-ault/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences:* atmospheric science
- **Research Interests:** climate science, drought, spring dynamics; Teaching Interests: Tropical Meteorology

Rebecca Jane Barthelmie (<http://www.mae.cornell.edu/faculty-directory/rebecca-j-barthelmie/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences:* atmospheric science
- **Research Interests:** global and regional climate, focus on wind shear and wind energy

Gregory Paul Bewley (<http://www.mae.cornell.edu/faculty-directory/gregory-paul-bewley/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences:* atmospheric science
- **Research Interests:** environmental turbulence

Stephen John Colucci (<http://www.eas.cornell.edu/people/profile.cfm?netid=sjc25>)

- **Campus:** Ithaca - (Graduate School Professor)
- **Concentrations:** *Atmospheric Sciences:* atmospheric science
- **Research Interests:** weather analysis and forecasting; large-scale atmospheric dynamics

Arthur T Degaetano (<http://www.eas.cornell.edu/people/profile.cfm?netid=atd2>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences:* atmospheric science
- **Research Interests:** applied climatology; environmental information science; environmental management

H. Oliver Gao (<http://www.engineering.cornell.edu/faculty-directory/h-oliver-gao/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences:* atmospheric science
- **Research Interests:** air quality; transport and environment; sustainable development

Peter G. Hess (<http://cals.cornell.edu/peter-george-mueller-hess/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences:* atmospheric science
- **Research Interests:** atmospheric aerosols and climate; air quality

Peter Hitchcock (<http://www.eas.cornell.edu/spotlights/peter-hitchcock-newest-faculty-member-eas/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences:* atmospheric science
- **Research Interests:** large-scale atmospheric dynamics, troposphere-stratosphere interactions

David Lee Hysell (<http://www.engineering.cornell.edu/faculty-directory/david-lee-hysell/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences:* atmospheric science
- **Research Interests:** radar and remote sensing; upper atmospheric physics; plasma physics; computational fluid dynamics

Flavio Lehner (<http://www.eas.cornell.edu/faculty-directory/flavio-lehner/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences:* atmospheric science
- **Research Interests:** Global and regional climate variability and change, land-atmosphere and ocean-atmosphere coupling, extreme event attribution

Nikole K. Lewis (<http://astro.cornell.edu/nikole-lewis/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences*: atmospheric science
- **Research Interests:** planetary atmospheric processes

Douglas MacMartin (<http://www.atkinson.cornell.edu/about/people/fellows/view.php?NetID=dgm224>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences*: atmospheric science
- **Research Interests:** dynamics and feedback analysis in climate systems

Natalie M. Mahowald (<http://www.eas.cornell.edu/faculty-directory/natalie-m-mahowald/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences*: atmospheric science
- **Research Interests:** atmospheric dust; climate modeling

Angeline Greene Pendergrass (<http://www.eas.cornell.edu/faculty-directory/angeline-pendergrass/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences*: atmospheric science
- **Research Interests:** I study precipitation and the flow of water and energy through the climate system with which it is associated. My interests include extreme precipitation events that impact people and our environment; the atmospheric processes, circulation, and phenomena that lead to precipitation; and broader variability and changes of Earth's climate. My research is grounded in a top-down approach that considers fundamental questions about precipitation and its change. I develop compact but powerful and useful metrics to describe the characteristics of precipitation to address questions including What role does precipitation play in the flow of energy through the climate system, and what can we learn about precipitation and its change from this? How have extreme precipitation events changed in the past, how will they change in the future, and what processes drive these changes? How accurately do models simulate the hydrologic cycle, and how can we improve their accuracy? What are the causes and consequences of changes in the hydrologic cycle for circulation of the atmosphere and ocean, climate sensitivity, and society?

Sara C. Pryor (<http://www.eas.cornell.edu/faculty-directory/sara-c-pryor/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences*: atmospheric science
- **Research Interests:** global climate change/variability and forcing at regional scales, atmosphere-surface exchange, formation and removal processes for atmospheric aerosols.

Vivek Srikrishnan (<http://cals.cornell.edu/vivek-srikrishnan/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences*: atmospheric science
- **Research Interests:** Climate risk management, Coupled natural-human systems, Complex system dynamics, Decision-making under uncertainty, Uncertainty characterization

Scott Steinschneider (<http://cals.cornell.edu/scott-steinschneider/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences*: atmospheric science
- **Research Interests:** hydroclimatic variability and change

Daniele Vioni (<http://cals.cornell.edu/news/2023/09/meet-our-faculty-daniele-vioni/>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences*: atmospheric science
- **Research Interests:** Atmospheric Chemistry and Physics, stratospheric aerosols, chemistry and dynamics in the stratosphere and surface climate, including biosphere interactions, explosive volcanic eruptions and of Sunlight Reflection Methods

Ke Max Zhang (<http://www.atkinson.cornell.edu/about/people/fellows/view.php?NetID=kz33>)

- **Campus:** Ithaca
- **Concentrations:** *Atmospheric Sciences*: atmospheric science
- **Research Interests:** atmospheric chemistry; air quality