INDIANA UNIVERSITY ATMOSPHERIC SCIENCE OFFERS:

1. Bachelor of Science, Master of Science and Doctor of Philosophy
2. A range of major and minors including a Ph.D. minor in Sustainable Energy Science and a certificate in Atmospheric Sciences
3. Facilities: Computational facilities at IU are ranked in the top 10 nationally. Extensive GIS and remote sensing facilities
4. Facilities: Extensive instrumentation and field stations available for experimental research

CURRENT FUNDED GRADUATE STUDENT POSITIONS
- Climate downscaling
- Biogeochemical cycling/atmosphere-surface exchange
- Boundary-layer and wind power meteorology

ATMOSPHERIC SCIENCE COURSES
- G109 WEATHER & CLIMATE
- G304 PHYSICAL METEOROLOGY & CLIMATOLOGY
- G336 REMOTE SENSING
- G338 GEOGRAPHIC INFORMATION SCIENCE
- G339 WEATHER ANALYSIS AND FORECASTING
- G350 INSTRUMENTATION & FIELD METHODS IN ATMOSPHERIC SCIENCE
- G362 ATMOSPHERIC DYNAMICS: BOUNDARY-LAYER METEOROLOGY
- G5/405 HYDROCLIMATOLOGY
- G5/431 DYNAMIC METEOROLOGY
- G5/433 ADVANCED SYNOPTIC METEOROLOGY AND CLIMATOLOGY
- G5/434 AIR POLLUTION METEOROLOGY
- G5/442 SUSTAINABLE ENERGY SYSTEMS
- G5/444 CLIMATE CHANGE IMPACTS
- G5/455 WIND POWER METEOROLOGY
- G5/470 MICROMETEOROLOGY
- G5/475 CLIMATE CHANGE SCIENCE
- G5/477 TOPICS IN ATMOSPHERIC SCIENCE
- G5/488 APPLIED SPATIAL STATISTICS
- G5/489 ATMOSPHERIC DATA ANALYSIS

CONTACT:
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Provost Professor Sara C. Pryor: spryor@indiana.edu

Atmospheric Science at Indiana University is a dynamic program with exciting opportunities to undertake field, laboratory, or modeling research. The Atmospheric Science Program at IU integrates research across scales from nanoparticles and turbulence, through boundary-layer processes to synoptic (forecasting) scales and climate change science and its impacts.
BOUNDARY-LAYER AND WIND POWER METEOROLOGY:
- Inter-comparison of methods for wind and turbulence profiling
- Measurements of vertical wind shear, wind veer and turbulence applied to load estimation in large wind farms
- Quantifying power losses due to wakes in large wind farms
- Climate change impacts on the renewable energy sector
- Application of the WRF model for wind resource and short-term forecasting

ATMOSPHERIC CHEMISTRY, CARBON AND WATER DYNAMICS:
- Nucleation of aerosols in the atmospheric boundary layer
- Boundary-layer dynamics
- Atmosphere-surface exchange (aerosols, carbon, water)
- Water dynamics
- Use of remote sensing for scaling-up carbon sequestration

REGIONAL MANIFESTATIONS OF CLIMATE CHANGE AND VARIABILITY:
- Variability and trend analyses of wind speed and precipitation
- Detecting changes in geophysical probability distributions and extremes
- Influence of surface climate network distributions on estimates of global change
- Downscaling for regional climate change assessments (dynamical and probabilistic)

ATMOSPHERIC SCIENCE FACULTY

Rebecca J. Bartheimie (Professor Geological Sciences). Boundary-layer meteorology. Editor of Wind Energy.
Cody Kirkpatrick (Visiting Assistant Professor, Geological Sciences). Mesoscale meteorology and severe weather.
Sara C. Pryor (Provost Professor Geological Sciences). Micro- and boundary-layer meteorology and regional climate change.
Scott M. Robeson (Professor Geography). Climate statistics.

AFFILIATED FACULTY:
Ben Brabson (Professor Physics): Environmental physics
Doug Edmonds (Assistant Professor Geological Sciences): Hydrology
Justin Maxwell (Assistant Professor Geography): Biogeography
Greg Olyphant (Associate Professor Geological Sciences): Hydrology
Beth Plale (Professor Informatics): Data driven computing
Jonathan Raff (Assistant Professor SPEA): Atmospheric chemistry
Faiq Rahman (Associate Professor Geography): Remote sensing
Phil Stevens (Professor SPEA): Atmospheric chemistry