

# Graduate Education & Fellowships with CIRES

Cooperative Institute for Research in Environmental Sciences

**CIRES, at the University of Colorado at Boulder, has been committed to excellence in Earth system science and teaching since 1967. Our faculty have supervised the research of hundreds of students who and are now in environmental science and research positions in academia and industry, in the United States and around the world.**

## ESRL-CIRES Graduate Student Fellowships

The ESRL-CIRES Graduate Student Fellowship allows students to pursue a master's or doctoral degree in a CIRES-affiliated department or program at CU-Boulder, while working with the world-class research team at NOAA's Earth System Research Laboratory (ESRL). Students will work with both a CIRES faculty advisor and an ESRL science advisor. Awards include tuition, partial health insurance, half-time stipend during the academic year, full-time stipend during the summer, and support to participate in one professional meeting per year. Students may be funded for up to two (master's) or four (Ph.D.) years.

### Who is eligible?

Any prospective, incoming student who has applied to one of the following 13 CU-Boulder departments or programs: Atmospheric and Oceanic Sciences; Chemistry and Biochemistry; Geography; Geological Sciences; Physics; Ecology and Evolutionary Biology; Molecular, Cellular and Developmental Biology; Aerospace Engineering Sciences; Civil, Environmental and Architectural Engineering; Electrical and Computer Engineering; Environmental Studies; Hydrological Sciences; or Geophysics.



*Applicants* must express interest in working in cutting-edge research areas identified anew each year. Examples:

- Surface-atmosphere exchange processes
  - Boundary layer effects on tall tower CO<sub>2</sub> measurements
  - Surface processes and energy budgets in high latitudes
  - Air-sea exchange processes
- Water resources
  - Water resource management
  - Water resources and climate
- Meteorological effects on wind energy generation
- Aircraft and balloon measurements of trace gases and modeling of transport in the upper troposphere and lower stratosphere
- Measuring the atmospheric response to international environmental protocols
- Baseline monitoring for climatic change
- Atmospheric measurements of the global carbon cycle
- Tropospheric aerosol measurements
- Tropospheric and stratospheric ozone and water vapor measurements
- Atmospheric remote aerosol measurements
- Surface radiation and column aerosol optical depth trends
- Advanced data assimilation
  - Remote sensing observation impact on hurricane forecasts with a new variational data assimilation
  - Forecast impact comparison of the Ensemble Kalman Filter (EnKF) and variational data assimilation schemes
- New mass spectrometric methods for the analysis of organic aerosols



in the atmosphere

- Enhancing optical remote sensing capabilities of a NOAA research aircraft by airborne multi-axes differential optical absorption spectroscopy (AMAX-DOAS)
- Nighttime tropospheric chemistry
- Tropospheric chemistry: satellite remote sensing and comparison to numerical models
- High sensitivity optical instrumentation for research into tropospheric trace gases and aerosols
- The use of science in air quality-related decision making

## CIRES Graduate Student Research Fellowship

CIRES Graduate Student Research Fellowships provide support for outstanding current or prospective CU-Boulder Ph.D. students advised by a CIRES Fellow. Awards include tuition, partial health insurance, and half-time stipends during the academic year and summer for up to one year. Prospective students may use the fellowship award in their second year if they secure a Teaching Assistantship in their first year at CU-Boulder.

### Application Information

The application deadline for both fellowships is in February.

For more information, contact: Suzanne van Drunick  
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or visit <http://cires.colorado.edu/education/cu/fellowships/>.