PhD Program in Analytical, Environmental, and Atmospheric Chemistry

Our Research and Facilities:

- CU-Boulder ranked #1 in Atmospheric science worldwide (2019 Shanghai Ranking)
- World-class laboratory and field programs
  - Aircraft, ship, and ground-based field research
  - New simulation chamber facility
  - State-of-the-art instrumentation
- Collaborations across departments/fields, nationally and internationally, and with the nearby national labs
  - The Boulder area has the largest number of atmospheric scientists and chemists worldwide
- $4 million/yr research budget, ~50 papers/yr

Boulder, CO:

- 300 days of sun
- Bike and pedestrian friendly
- Skiing, biking, hiking, climbing, and more
- Lively downtown (Pearl St)
- 30 min. to Denver
- vimeo.com/181645979

Our Program:

- ~30 grad students and ~10 postdocs/res. scientists
- Atmospheric chemistry focus within the Chemistry Dept.
- Graduates have careers in national labs, academia, industry, policy & government
Interested? Applications for admission into the Department of Chemistry PhD program are due the 1st of December 2019, for students starting in Aug. 2020. Opportunities for under-represented students can be found at colorado.edu/smart/ and more application information here: tinyurl.com/ANYL-1st and colorado.edu/chemistry/prospective-graduate/admission

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**Examples of Recent Student Research**

- **Natalie Kille, Volkamer Lab**: The CU Mobile Solar Occultation Flux Instrument: structure functions and emission rates of NH₃, NO₂ and C₂H₆. 
  [volkamergroup.colorado.edu/people/natalie-kille](volkamergroup.colorado.edu/people/natalie-kille)

- **Quantifying gas-surface partitioning of semi- and low-volatility compounds and the impact on organic aerosol yield**: Environ. Sci. Tech. publication: [pubs.acs.org/doi/abs/10.1021/acs.est.6b00606](pubs.acs.org/doi/abs/10.1021/acs.est.6b00606)

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**Our Faculty**

- **Eleanor Browne**: sites.google.com/a/colorado.edu/brownelab
  Laboratory and field studies of organonitrogen and organosilicon chemistry, instrument development

- **Steven Brown (adjoint)**: colorado.edu/lab/browngroup
  Atmospheric nitrogen oxides, nighttime tropospheric chemistry, and high-sensitivity optical instrumentation

- **Joost de Gouw**: sites.google.com/view/de-gouw-lab
  Volatile organic compounds in the atmosphere, mass spectrometry, atmospheric impact of energy systems

- **Jose-Luis Jimenez**: cires.colorado.edu/jimenez
  Aerosol composition and sources, aircraft and simulation chamber studies, advanced instrumentation, modeling

- **Margaret Tolbert**: cires.colorado.edu/research/research-groups/margaret-tolbert-group
  Laboratory studies of particulate matter on Earth, Mars, and Titan

- **Rainer Volkamer**: volkamergroup.colorado.edu/
  Small molecules, radicals and aerosols; advanced optical instrumentation; air-surface exchange; oceans; wildfires; energy & environment

- **Veronica Vaida**: colorado.edu/lab/vaidagroup
  Spectroscopy and reactivity of atmospheric molecules and radicals

- **Paul Ziemann**: sites.google.com/site/ziemanngroup
  Laboratory studies of the products, mechanisms, and kinetics of atmospheric oxidation of organic compounds and aerosol formation; indoor air chemistry

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**Collaborating Institutions**

- The Cooperative Institute for Research in Environmental Sciences (CIRES) is a joint research partnership that connects scientists at NOAA and several departments at CU.

- NCAR studies the behavior of the atmosphere and related Earth and geospace systems.

- RASEI is a joint institute between CU-Boulder and the National Renewable Energy Laboratory (NREL) addressing complex problems in energy with a multidisciplinary, multi-institutional approach.