

Title: Frontiers of Atmospheric Science and Chemistry: Integration of Novel Applications and Technological Endeavors (FASCINATE)

Dates: September 9th to 11th, 2019

Optional add-on tutorial covering Python for big-data: September 12th, 2019

Estimated Attendees: 60 to 120 attendees

Registration Fee: \$250 (including breaks, lunches, and a reception, \$30 add-on for Python tutorial)

Conference Website: <https://www2.acom.ucar.edu/workshop/fascinate-2019>

Abstract Submission Page: <https://forms.gle/84tmqKn8ue5T5LMx6> (Submission due June 1st)

Workshop Goal: Aid in the bi-directional transfer of information among those that are pushing the boundaries of how we think about atmospheric composition and its impacts.

Workshop Outline: We will explore several frontiers that are pushing the boundaries of atmospheric chemistry. **Themes include novel uses of satellite data, analysis techniques developed for processing of immense datasets, as well as a discussion of advances in related health impact studies.** There will be a special emphasis on techniques and research that bridge the gap between these themes to approach a number of seminar topics, some of which are highlighted below:

- How can we use novel combinations of satellite observations to improve predictability, surface air quality, and our knowledge of chemistry in general?
- How can we use algorithms and techniques suited to immense datasets to help improve model parameterizations and predictability or to analyze observational data from varying sources?
- What products do health professionals require to better assess the health impacts of atmospheric composition, and how can the atmospheric science community work to achieve this?

Targeted Audience: We hope to bring in attendees from a range of governmental, industry, or academic backgrounds and fields of research. We encourage early-career scientists and graduate students to apply.

Oral Presentation Format (27 total speakers): Longer presentations are planned for all of our speakers, where they will present for 20 minutes followed by a 30 minute joint panel discussion with their two co-speakers within a specific topic that is related to the workshop themes to allow for deep synthesis and impactful understanding.

Poster Presentation Format: Workshop attendants will be encouraged to present a poster on their current work, and a 1 minute “lightning” talk to introduce themselves and describe how their work relates to the workshop themes. Prizes will be awarded to the students with best poster and best lightning poster presentation each day.

Optional Python Tutorial (limited space): Computers will be supplied if needed. Attendees will be provided with an introduction to Python for atmospheric science applications in the morning then participate in an interactive tutorial on machine-learning using Python with NCAR-provided data.

For any questions or requests for more information please send an email to fascinate2019@ucar.edu