Multiple Open Positions in ASCENT -
Atmospheric Science and mEasurement NeTwork

The Atmospheric Science and mEasurement NeTwork (ASCENT, link) is a new aerosol measurement network funded by the National Science Foundation Mid-Scale Research Infrastructure program. Leveraging existing networks, a total of 12 sites will be established across the country, providing comprehensive, high time-resolution, long-term characterization of aerosol chemical composition and physical properties. Each site will be equipped with a suite of advanced aerosol instrumentation: Aerosol Chemical Speciation Monitor (ACSM, non-refractory aerosols), Xact (trace metals), Aethalometer (black carbon), and Scanning Mobility Particle Sizer (SMPS, aerosol number size distribution and concentration). In collaboration with the National Center for Atmospheric Research (NCAR), a comprehensive database and web interface will be developed to provide research communities, educators, policy makers, and the public, with free access to all ASCENT data. ASCENT will transform atmospheric research, providing high quality, long-term aerosol characterization, the fundamental knowledge critical for long-term trend assessment, informing science-based policy decisions on climate and environmental change, including air quality, as well as for model and satellite validation. The network involves thirteen partner universities, NCAR, and various collaborations that extend to other academic, government, and industrial affiliates. Georgia Tech is the lead institution.

The ASCENT team has several open positions for Graduate Students, Post-doctoral Scholars, and a Managing Director. We are looking for people interested in being a part of this exciting new opportunity to revolutionize the study of atmospheric science in the US.

Managing Director
ASCENT is seeking a Managing Director at Georgia Tech who will serve as a member of the ASCENT administrative group, which includes the PI, the Steering Committee, the Project Manager and a Software Engineer and be the primary interface between ASCENT site personnel and the Steering Committee. The Managing Director will play a leading role in the technical aspects of the project, overseeing the instrument performance, data, and data analysis from each site. The Managing Director will work with the ASCENT Steering Committee to implement and manage the network.

In addition, the Managing Director will be responsible for the logistics of the network. The Managing Director will take the lead in developing Standard Operating Procedures (SOP) for instrument set up, operation, and data analysis, a site operator training plan, and instrument daily checklist, with inputs from all instrument mentor groups. The Managing Director will provide input to a software engineer and NCAR on the development of the database and web interface. Raw, QA/QC, and value-added data (e.g., source apportionment) will be sent from each instrument mentor group to the Managing Director, who will check and assemble the data for uploading to the database. The Managing Director will assist the Principal Investigator in organizing an annual ASCENT workshop at Georgia Tech for the administrative group, NCAR, and instrument mentor groups to meet and discuss project progress. The Managing Director will also lead ASCENT external communication activities.

The initial appointment will be for one year, with the expectation of renewal for two additional years, contingent upon satisfactory performance and availability of funding.

Applicants should hold a Ph.D. in Chemical Engineering, Atmospheric Sciences, Environmental Sciences/Engineering, Chemistry, or a related field. Knowledge and experience in operating advanced aerosol instrumentation (e.g., aerosol chemical speciation monitor) and conducting field measurements and source apportionment analysis are preferred, but any candidates with a strong background in aerosols will be considered. Women and minority candidates are strongly encouraged to apply. Multitasking, organizational, interpersonal, and project management skills are essential. Excellent oral and written communication skills are also desirable.

We are considering candidates at both the postdoctoral level and Research Scientist II level. Review of applications will begin immediately until the position is filled.

To Apply:

- Recent Ph.D. graduates at the postdoc level should apply via Georgia Tech's Careers website at the following link: https://careers.hprod.onehcm.usg.edu/psc/careers/CAREERS/HRMS/c/HRS_HRAM_FL.HRS_CG_SEARCH_FL.GBL?Page=HRS_APP_JBPST_FL&Action=U&FOCUS=Applicant&SiteId=03000&JobOpeningId=236918&PostingSeq=1

- More senior researchers with experience commensurate to the Research Scientist II level should apply via Georgia Tech's Careers website at the following link: https://careers.hprod.onehcm.usg.edu/psc/careers/CAREERS/HRMS/c/HRS_HRAM_FL.HRS_CG_SEARCH_FL.GBL?Page=HRS_APP_JBPST_FL&Action=U&FOCUS=Applicant&SiteId=03000&JobOpeningId=237030&PostingSeq=1

For questions or additional information about this position, please contact Professor Nga Lee (Sally) Ng at ng@chbe.gatech.edu

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Graduate Student Researchers

Several ASCENT partnering universities are currently recruiting graduate students to lead the instrument deployment and data analysis at each ASCENT site. For each site, an instrument mentor group (faculty, graduate and undergraduate students) will be in charge of instrument installation, operation, calibration, troubleshooting, data analysis and upload, with assistance from site operators as appropriate/needed. All mentor groups will contribute to the development of instrument and data Standard Operating Procedures (SOPs) and value-added products. One of the students in each mentor group will be designated as the Site/Instrument Manager and will act as a direct liaison between each mentor group and the ASCENT administrative group. This student will correspond with the Managing Director on instrument issues. Another student will be designated as the Data Manager, who will be responsible for the last data quality check at the group level and data submission. The students will log in remotely, daily, to check instruments and gather data.

The graduate students will gain training and fluency in multiple instruments that are central to atmospheric research, data management with next-generation infrastructure, as well as engagement with industry (Aerodyne, Datalystica, etc.) and government agencies (EPA, NPS, NSF). The graduate students will be involved in mentoring the undergraduate researchers that are involved with ASCENT deployment to prepare them as future mentors and STEM educators. The graduate students will also provide training and educational opportunities for the state agency and National Park Service site operators.

The graduate students from all ASCENT sites will form a peer professional network and will have the opportunity to work closely with each other. The involvement in such a large-scale infrastructure project with significant logistical coordination will help develop skills beyond the execution of research in a single laboratory or even field setting. Every year, the graduate students will participate in a 3-day in-person workshop at Georgia Tech together with the ASCENT leadership team, site mentors and NCAR to share experience and discuss project progress.

Below are ASCENT partnering universities that are recruiting graduate students. To apply, please contact the specific universities and professors. Women and minority candidates are strongly encouraged to apply.

Atlanta Site: Georgia Institute of Technology, Professor Nga Lee (Sally) Ng (ng@chbe.gatech.edu)
Rubidoux Site: University of California, Riverside, Professor Roya Bahreini (bahreini@urc.edu)

Postdoctoral Scholar

The Air Quality Research Center (AQRC) at the University of California, Davis is seeking a Postdoctoral Scholar to perform laboratory research using Fourier Transform-Infrared spectroscopy (FT-IR) and ACSM instrumentation to increase understanding of organic aerosols and contribute to enhanced organics data for ASCENT. The FT-IR Laboratory at the AQRC uses FT-IR and chemometric calibration methods to measure organic functional groups in filter samples to evaluate the chemical composition and sources of OA in the US (Boris et al., amt-14-4355-2021, 2021, Boris et al., amt-2019-144, 2019; Kamruzzaman et al.

j.atmosenv.2017.10.053, 2018, Ruthenburg et al., j.atmosenv.2013.12.034, 2014). For ASCENT, organic functional groups will be measured from filter samples collected at all ASCENT sites for the duration of the project. Organic functional groups are complementary to ACSM data and provide additional chemically-specific OA compositional information, including aliphatic C-H, unsaturated C-H, carboxylic acids, carbonyl, non-acid carbonyl, alcohol, and amines. Using laboratory and smog chamber samples analyzed in parallel by FT-IR and ACSM, the Postdoctoral Scholar will develop parameterizations of ACSM data to increase the chemical resolution of OA from the ACSM. Similar types of empirical parameterizations have proven useful for estimating the contribution of carboxylic acid to OA measured by aerosol mass spectrometers. The parameterizations will be incorporated into the routine ACSM data analysis tools for chemical composition and source apportionment as part of the ASCENT data infrastructure.

The Postdoctoral scholar will collaborate with Dr. M. Canagaratna (Aerodyne Research Inc.) and Dr. N. L. Ng (Georgia Tech) while gaining training and fluency in FT-IR and ACSM, data management with next-generation infrastructure, and engagement with government (EPA, NPS, NSF). The post-doctoral scholar will work with undergraduate and graduate students at UC Davis and graduate students at the affiliated universities to prepare them as future mentors and STEM educators. The Postdoctoral scholar will be a member of the ASCENT peer professional network. The involvement in such a large-scale infrastructure project will help develop skills beyond the execution of research in a single laboratory or even field setting. Every year, the post-doctoral scholar will participate in a 3-day in-person workshop at Georgia Tech together with the ASCENT leadership team, faculty site mentors, graduate students and NCAR to discuss project progress and enhance collaboration across the ASCENT team.

The initial appointment is for one year and may be extended up to three years contingent upon mutual agreement. The position includes health insurance and other benefits.

The candidate must have a Ph.D. in Atmospheric Science, Chemistry, Chemical or Environmental Engineering or a related field. A strong background in atmospheric aerosol organic chemistry (or a related field) and in Matlab, R and/or Igor command line programming are required. Knowledge and experience in operating advanced aerosol instrumentation (e.g., aerosol chemical speciation monitor) and conducting field measurements are preferred. Background in the application of numerical methods, statistical learning approaches, chemometrics, machine learning, and/or FT-IR spectroscopy, are desirable. Women and minority candidates are strongly encouraged to apply. Interested individuals should send a single pdf file containing a cover letter, CV, graduate transcripts, date of availability, contact information of three references, and up to three published papers to Dr. Ann M. Dillner (amdillner at ucdavis dot edu). Applications will be accepted until the position is filled.

More information on Dr. Dillner's laboratory, the FT-IR Laboratory in the AQRC at UC Davis, is available at https://aqrc.ucdavis.edu/people/ann-dillner. The University of California, Davis, is an affirmative action/equal opportunity employer with a strong institutional commitment to the development of a climate that supports equality of opportunity and respect for differences.