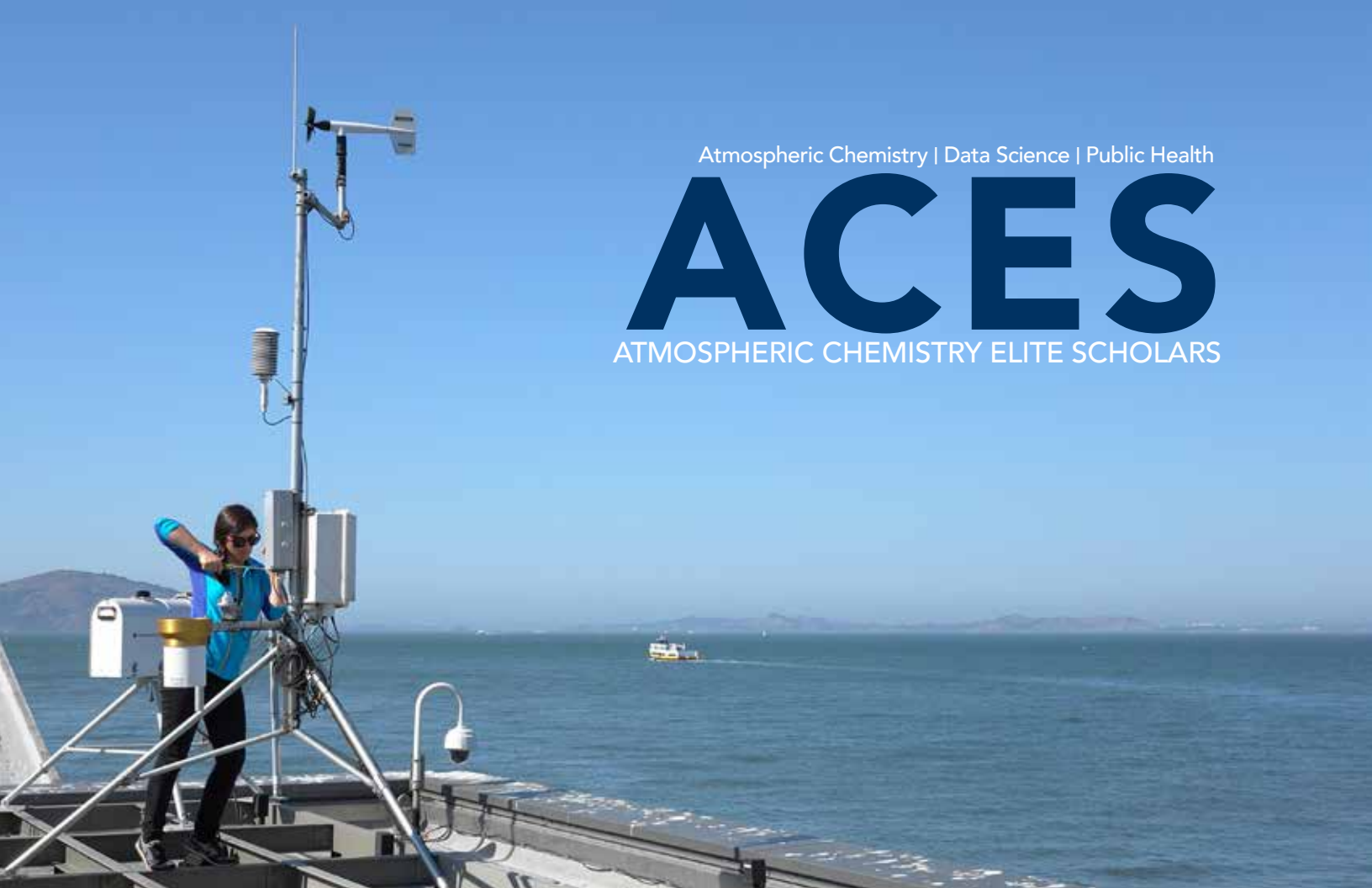
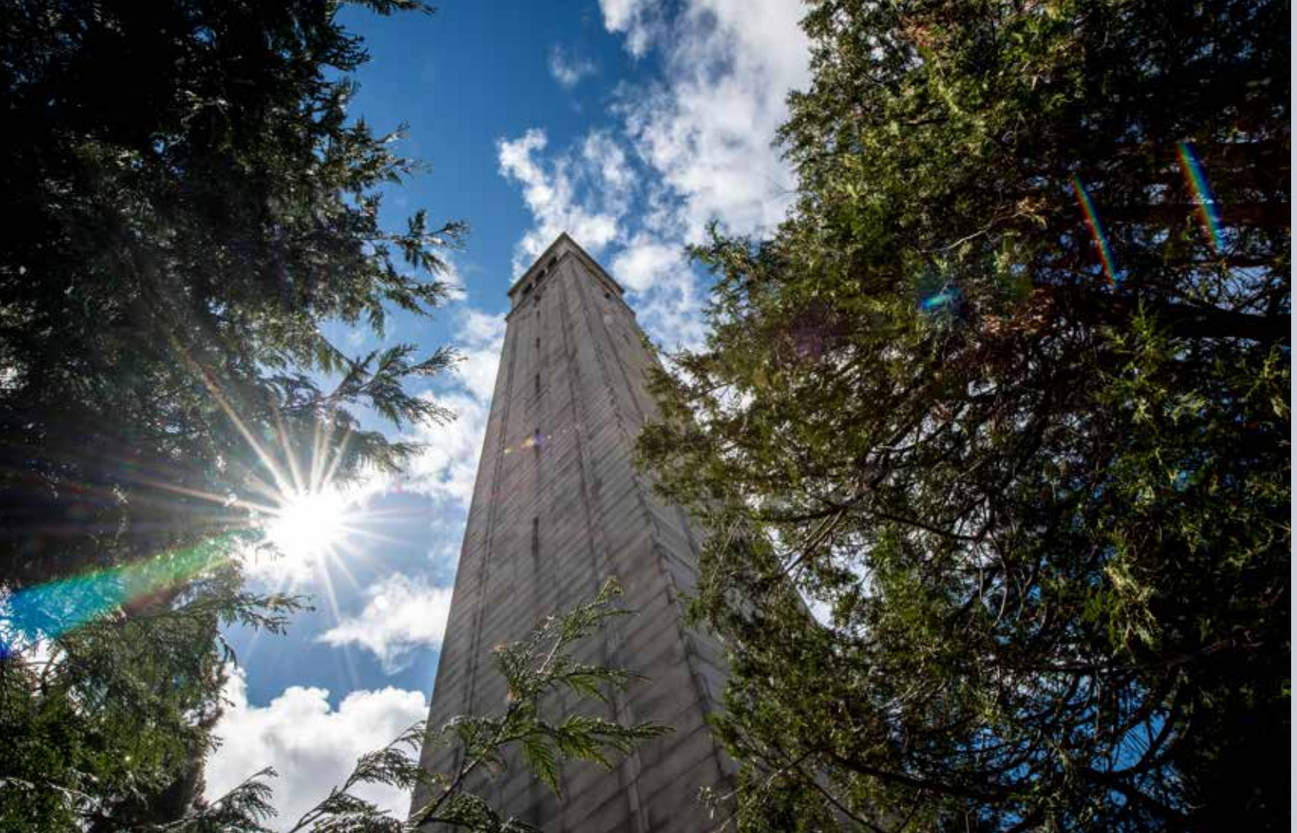


Atmospheric Chemistry | Data Science | Public Health

ACES

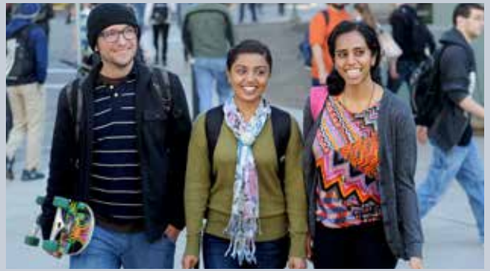
ATMOSPHERIC CHEMISTRY ELITE SCHOLARS



INTRODUCTION

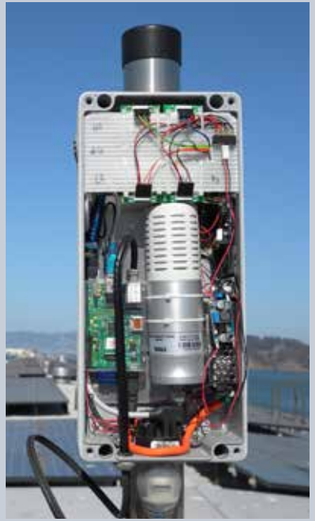
The College of Chemistry's **Guiding Outstanding Learners to Discover© (GOLD)** programs are designed to empower students in high school and other undergraduate institutions to further their understanding of the chemical sciences and engineering. The programs provide structured curricula that incorporate seminars and lectures given by world-renown faculty and scientific leaders in their fields. In some cases, the programs include hands-on experiences in the laboratory and/or classroom. These offerings are integrated with other strategies such as group problem solving activities, presentations, and interactive discussions that build stronger communication, interpersonal, and analytical skills amongst participants.

The objective of the **GOLD** programs is to facilitate the development of each student's intellectual and inquiry skills to help him/her achieve his/her fullest potential. Every **GOLD** program is sponsored and taught by UC Berkeley faculty, graduate students, and scholars, and is held onsite at the Berkeley campus.



OBJECTIVE

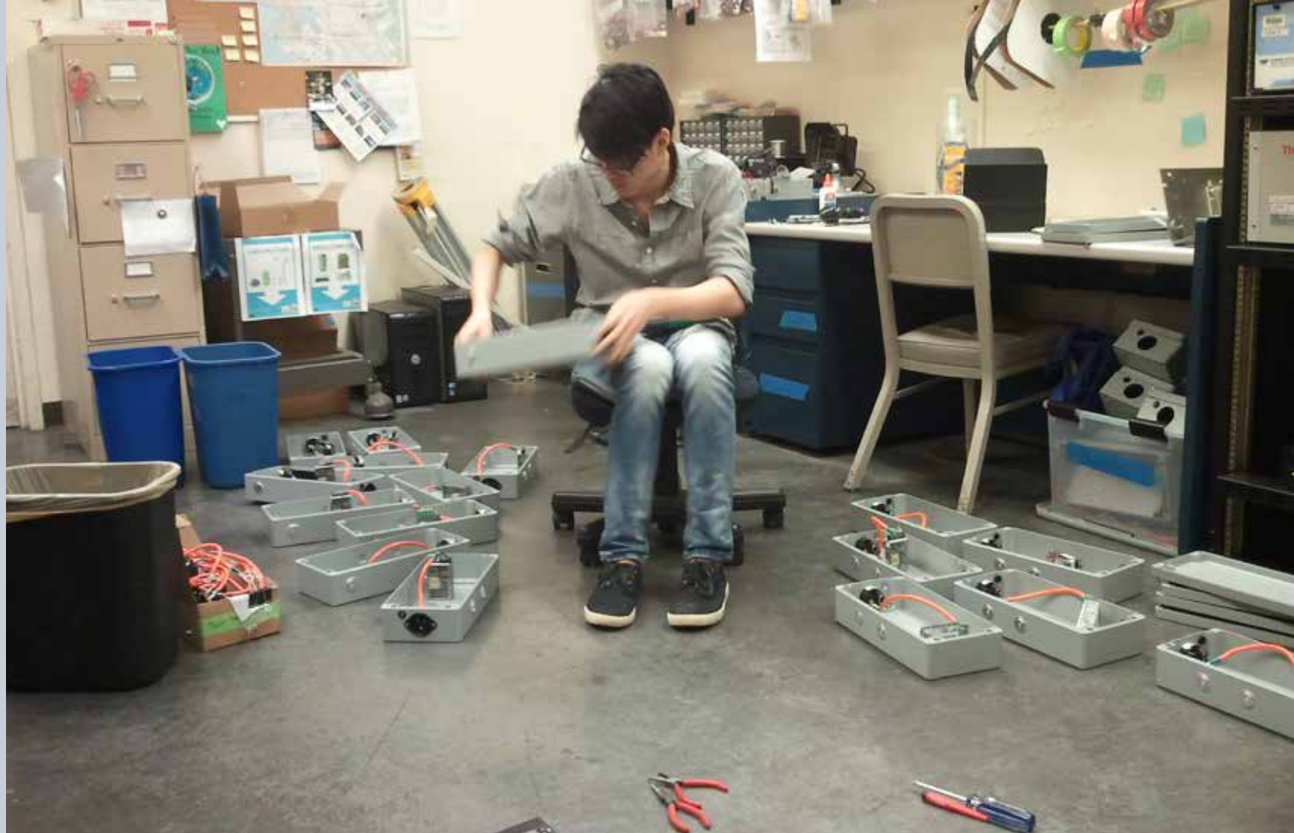
The Atmospheric Chemistry Elite Scholars (ACES) program is designed for the undergraduate student who thirsts for in-depth and hands-on research experience in the intersection of atmospheric chemistry, data science, and public health.



Students who complete the program are expected to become better prepared to enter faculty labs for undergraduate research at their home institutions and/or to be more competitive in their graduate school application or when applying to work in industry upon graduation. **ACES** is a non-credit bearing program consisting of a 5-week curriculum.

ACES teaches undergraduate scholars the theory and application of research methodology, to work independently, think critically, and communicate more effectively. During the 5-week curriculum, students attend research seminars and faculty lectures and conduct mentored research using atmospheric data collected in the field.

In addition to learning state-of-the-art approaches, the student's experience will be augmented by graduate school information sessions and panels; tours of the Molecular Foundry and Advanced Light Source at the Lawrence Berkeley National Laboratory, as well as UC Berkeley; and networking activities in the San Francisco Bay Area.



ACES CURRICULUM

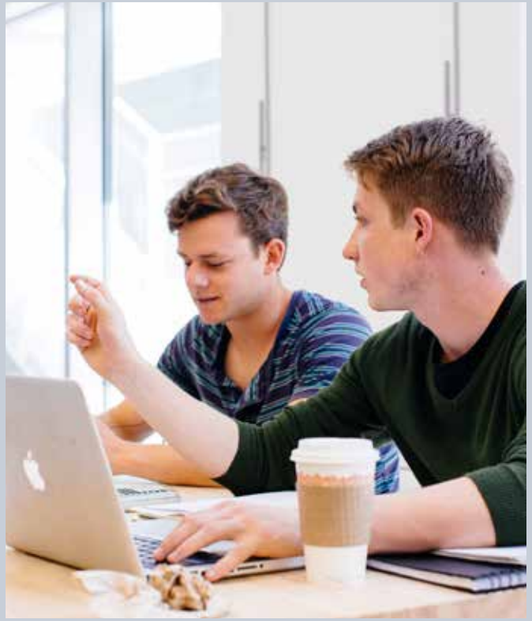
WEEK 1
Urban Atmospheric Chemistry

WEEK 2
Network Sensing, Data Science and Spatial Analysis

WEEK 3
Atmospheric Chemistry and Public Health

WEEK 4
Independent Research in Atmospheric Chemistry

WEEK 5
Project Presentations and Adjudication



ACES FACULTY

RON COHEN
ACES Program Director

Professor Cohen's research focuses on developing and applying new experimental and modeling strategies for understanding the chemical composition of the Earth's atmosphere. His team uses sensor networks, space-based remote sensing and ground based spectroscopy to observe composition of Earth's atmosphere. They couple observations with chemical weather models in studies that focus on greenhouse gas policy, human exposure and our understanding of chemical reactions in the atmosphere.

ALEXIS SHUSTERMAN
Network Sensing & Science Communication

Dr. Shusterman is a STEM educator and science communicator whose PhD research advanced the use of low-cost sensor technologies in enabling high-resolution network monitoring strategies for urban air pollution. She currently teaches general and organic chemistry in the UC Berkeley College of Chemistry.

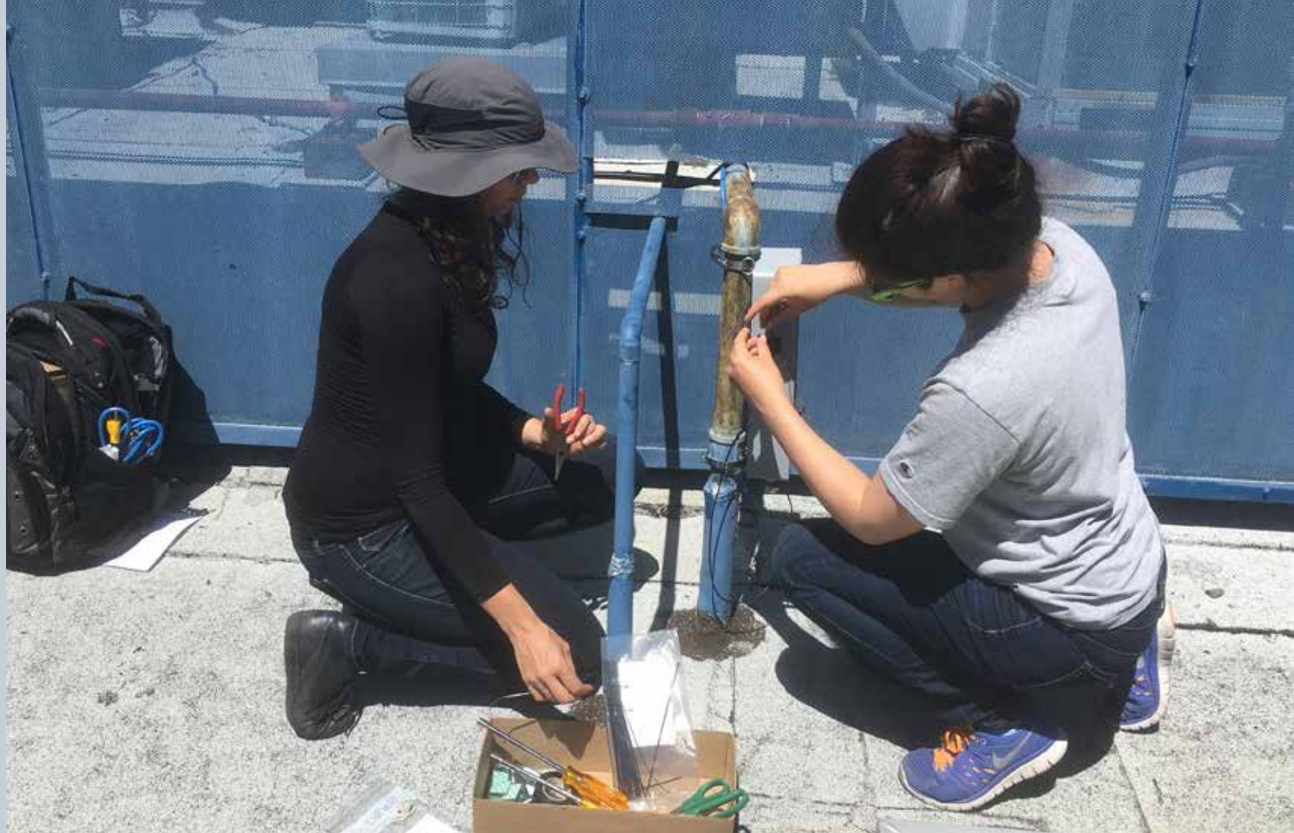
ELIGIBILITY AND APPLICATION PROCESS

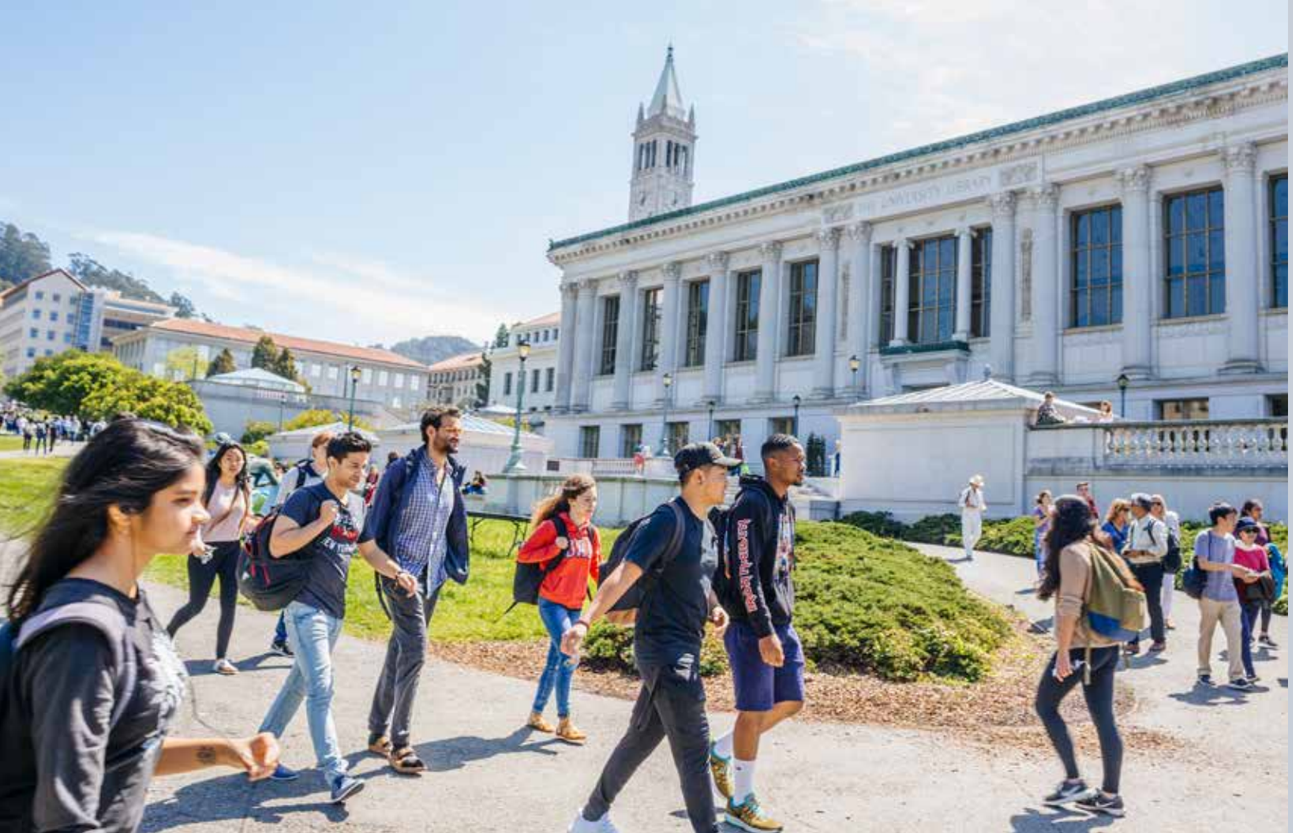
ACES accepts applications from undergraduate students attending a nationally accredited university or college studying a chemical, physical, or related science. Applicants will have successfully completed two years of undergraduate chemistry or other physical science. Some experience with computer programming desirable.

- 500 word statement of interest that includes why you are interested in atmospheric chemistry, what you hope to gain from the program, and what makes you the best candidate.
- A minimum 3.0 GPA on a 4.0 scale
- One letter of reference
- A minimum 79 TOEFL or 6.5 IELTS for international students

The **ACES** program dates are **July 6** — **August 7, 2020.**

Applications will be accepted until **May 31, 2020.**
Click here to apply online.





TUITION AND FEES

Tuition for the 5-week program is $12,000. This cost includes all instruction and classroom materials, laboratory materials and supplies, excursions, and airport transfer. The cost of traveling to and from UC Berkeley for the program, housing, visa fees, and any personal expenses during the program are not covered and are the responsibility of the student.

Students from under-represented and/or minority groups are encouraged to apply. ACES has a number of need-based scholarships that will pay for partial or full tuition, fees, housing and transportation costs to and from Berkeley. To submit a scholarship application, please download and upload the completed form within the application portal.

PROGRAM DATES

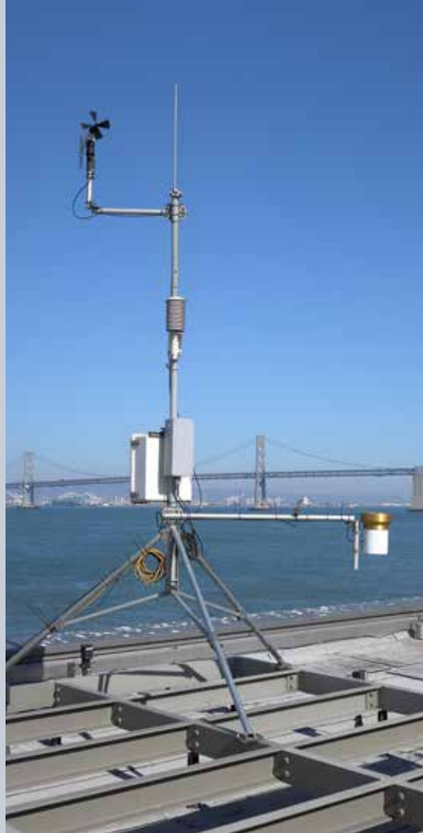
The dates for the 2020 **ACES** Program are **July 6 — August 7.**

CONTACT US

For additional information about **ACES** please contact:

Gold Programs
goldprograms@berkeley.edu

Suzanne Sutton
suttons@berkeley.edu



Atmospheric Chemistry | Data Science | Public Health

ACES

ATMOSPHERIC CHEMISTRY ELITE SCHOLARS

BERKELEY 150

College of Chemistry
79 Au GOLD 196.97
Guiding Outstanding Learners to Discover
UC Berkeley