

# Long-term Impacts of a One-week Professional Development Program for Undergraduate Students

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## NCAR's Undergraduate Leadership Workshop

The annual Undergraduate Leadership Workshop (ULW) at the National Center for Atmospheric Research (NCAR) connects about twenty undergraduates from around the nation with research scientists, engineers, educators, and leadership at NCAR in Boulder every year. This immersion experience was initially intended to provide students with exposure to careers in the atmospheric sciences and to encourage them to pursue graduate school. This program fulfills the recommendation in a 2014 report to the Directorate for Education and Human Resources at the National Science Foundation to provide student opportunities to build knowledge and capacity for workforce development in STEM fields.

This five-day gives college students a chance to explore **careers in the atmospheric sciences** and **develop their leadership potential**. Scientific areas of focus include weather, climate modeling, solar dynamics, and societal impacts of severe weather and climate change.



## Mentoring, Developing Career Skills, and Leadership Training

Participating students learn about:

- What does informal leadership look like
- How do leaders use values to guide their choices and actions
- Communicating professionally
- Résumé-writing and mock interviewing
- Talking with mentors about life in the atmospheric sciences
- Interacting with career panelists from the private sector and academia
- Working with peers on activities and projects to develop teamwork skills

Day	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Leave	June 8, 2015	June 9, 2015	June 10, 2015	June 11, 2015	June 12, 2015	June 13, 2015	
Location	Mesa Lab - Summit Room	Mesa Lab - Summit Room	Mesa Lab - Summit Room	Foothills Lab (2002)	Foothills Lab (2002)	Foothills Lab (2002)	Foothills Lab (2002)
7:30 AM	Bus to Mesa Lab	Breakfast on own	Breakfast on own	Breakfast on own	Breakfast on own	Breakfast on own	
8:00 AM	Evaluation criteria	Bus to Mesa Lab	Bus to Foothills Lab	Bus to Foothills Lab	Bus to Foothills Lab	Bus to Foothills Lab	
8:30 AM	Introduction to the ULW - Val & Tim	Climate Modeling by J.F. Lattague, Will Weider	What's Weather Research? with Jen Henderson	Societal Impacts of Climate Change with Jen Henderson	Coffee with staff		
9:30 AM	Meet with Jim Harrell NCAR Group photo with Carlyn	Careers in the Atmospheric Sciences Project	Careers in the Atmospheric Sciences Project	Careers in the Atmospheric Sciences Project	Final video presentations	Travel to Denver and Airport	Return home
10:30 AM	Travel to Denver & shuttle to Boulder	Meet with Tom Baggett UCAR President					
11:00 AM	Leadership & diversity with Tom Winburn, Ph.D.	Leadership Activity	Leadership Activity	Leadership Activity	Reflection & program evaluation		
12:00 PM	Meet your mentor, Lunch at the Mt. Trail Plaza with mentor - cuisinart sandwiches	Lunch FL2 cafeteria	Lunch FL2 cafeteria	Lunch FL2 cafeteria	Lunch FL2 cafeteria		
1:00 PM		Tour of Mesa Lab	Graduate School Panel	Careers in the Private Sector	Video interviews		
2:00 PM	Arrive in Boulder	Prof. development: Communicating professionally	Prof. development: Video mock interviews	Prof. development: Resume writing and Grad school applications	Prof. Development: Communication, budgets & managing	Research Aviation Facility (RAF) tour	
3:30 PM	Check in	Leadership Activity	Earth science walk behind NCAR	Group Time - Walk Outside	Tour labs at Foothills Lab	Eldorado Springs hike	
5:00 PM	Meet up	Bus back to Bear Creek	Bus back to Bear Creek	Bus back to Bear Creek	Bus back to Bear Creek	Bus back to Bear Creek	
Evening	Welcome dinner	Free time & sleep for breakfast food	Student Potluck dinner at Bear Creek Apts	Evening Free	Student Potluck dinner	Evening Free	



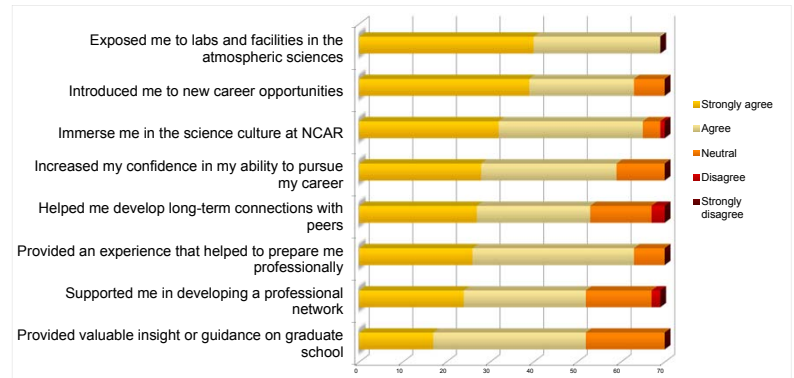
## Alumni Survey and Focus Groups

A long term evaluation of the program, which is now in its 14th year, is yielding insights into the aspects of the program that ULW alumni have found to be most valuable. The evaluation has utilized focus groups, surveys, and interviews to assess the impact the program has had, both short term and long term over the course of the students' educational and professional careers. We sent out an online survey to 117 ULW alumni in November of 2015, and had 71 responses to rating (Likert) scaled questions and written comments. At the 2015 AMS conference, we held three focus groups of ULW alumni including 35 people in total.

## Impacts of the ULW on Alumni

ULW Alumni were asked to rate their agreement with the following statements.

"The ULW . . ."



The **main themes** that are emerging are an appreciation for having been introduced to a whole new suite of careers in science, and for the close peer group that provides long-term support. **Results suggest** that the overall value of short but intense programs with opportunities for exposure to careers, professional development, mentoring, and peer-relationship-building have a significant positive impact without the effort or cost of a full-fledged internship.



## Nominating a Student to the NCAR ULW

To attend the ULW, a student needs to:

Be nominated by a faculty member in a department that is a UCAR member university or college (one nomination per school)

Be a junior at the time of application (generally)

Deadline is March 14<sup>th</sup>

Visit the ULW Website at: <https://scied.ucar.edu/undergraduate-leadership-workshop>

For more information, contact Val Sloan at [vsloan@ucar.edu](mailto:vsloan@ucar.edu)

