

Utah State University

DigitalCommons@USU

Physics Student Research

Physics Student Research

12-2014

The National Science Foundation's Coupling, Energetics and Dynamics of Atmospheric Regions (CEDAR) Student Community

Leda Sox
Utah State University

Timothy Duly

Barbara Emery

Follow this and additional works at: https://digitalcommons.usu.edu/phys_stures



Part of the [Atmospheric Sciences Commons](#), and the [Science and Mathematics Education Commons](#)

Recommended Citation

Sox, Leda; Duly, Timothy; and Emery, Barbara, "The National Science Foundation's Coupling, Energetics and Dynamics of Atmospheric Regions (CEDAR) Student Community" (2014). *Physics Student Research*. Paper 15.

https://digitalcommons.usu.edu/phys_stures/15

This Poster is brought to you for free and open access by the Physics Student Research at DigitalCommons@USU. It has been accepted for inclusion in Physics Student Research by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.





Utah State University

From the SelectedWorks of Leda Sox

December 2014

The National Science Foundation's Coupling, Energetics and Dynamics of Atmospheric Regions (CEDAR) Student Community

Contact
Author

Start Your Own
SelectedWorks

Notify Me
of New Work



Available at: http://works.bepress.com/leda_sox/27



The National Science Foundation's Coupling, Energetics and Dynamics of Atmospheric Regions (CEDAR) Student Community

Leda Sox¹, Timothy Duly², and Barbara Emery³

¹ Department of Physics and Center for Atmospheric and Space Sciences, Utah State University, Logan, Utah;

² University of Illinois at Urbana Champaign, Urbana, Illinois; ³ High Altitude Observatory National Center for Atmospheric Research, Boulder, CO, United States

The Coupling, Energetics and Dynamics of Atmospheric Regions (CEDAR) Community

The Coupling, Energetics and Dynamics of Atmospheric Regions (CEDAR) research program is a successful grass-roots community initiated group of scientists and engineers whose research focus is the Earth's upper atmosphere. Along with CEDAR funding opportunities¹, the National Science Foundation (NSF) also sponsors a week-long CEDAR Workshop² each summer.

The goal of these workshops is to better understand the behavior of atmospheric regions, from the neutral middle and upper atmosphere (stratosphere, mesosphere, thermosphere), through the ionosphere, to the exosphere. The behavior of these regions is explored through modeling and observations of chemical, energetic and dynamical processes on regional and

global scales. Although there is no formal student group within the CEDAR community, the workshops are very student-focused. The Workshops include a student session prior to the meeting, which aims to give students basic tutorials on the research topics they will encounter at the meeting. Roughly 40% of the participants at the CEDAR Workshops are students.

1. Student Experience Before the Workshop

The CEDAR Workshop immerses both undergraduate and graduate students in the scientific conference environment. At the workshop, student have ample opportunity to attend workshops, network with their peers and senior scientists and present their research, in either poster or oral presentation format. As a primer for the conference, a Student Workshop session is planned for the Sunday preceding each CEDAR Workshop. These Student Workshops are conceived, organized and moderated by the two Student Representatives on the CEDAR Science Steering Committee. Freedom is given to the Student Representatives to plan and organize the session however they best see fit. In general, however, these student-focused sessions contain 6-8 tutorial-style talks on a chosen theme within the CEDAR science field. Table 1 gives examples of past Student Workshop themes. These tutorials are supposed get students up-to-speed on basic CEDAR science and/or engineering topics in order to prepare them for the more in-depth talks and discussions they will attend during the main CEDAR Workshop. Figure 1 shows attendants at the 2007 Student Workshop listening to presenter Dr. Jeff Forbes' tutorial talk.

In addition to the tutorial talks, there is usually a career advice panel at the end of the student session. The panels have included professors, research scientists, post-docs and senior graduate students. The advice these panelists give ranges from how to successfully complete and defend your dissertation, to landing a post-doc, to how to maintain your career in the long-term.

To break up the day-long student session, a lunch is provided for the students and for a break at the end of the day, students take part in a soccer game, which has become an annual tradition. Figure 2 gives an example schedule of the Student Workshop (from 2014).

Year	Student Workshop Theme
2014	Aeronomy Instrumentation: Where Does the Data Come From?
2013	Ionospheric Modeling
2012	Waves and Tides
2011	Magnetosphere-Ionosphere (MI) Coupling
2010	Equatorial Aeronomy: Phenomena and Outstanding Questions
2009	Instrumentation: How Can We Probe the Upper Atmosphere?
2008	Space Weather Influences on the Ionosphere

Figure 2. Schedule of the CEDAR Student Workshop from the 2014 CEDAR Workshop in on the campus of the University of Washington in Seattle, WA.

Table 1. Past CEDAR Student Workshop Themes



Figure 1. Attendants at the 2007 CEDAR Student Workshop listen to a tutorial given by Jeffery Forbes.

2. Student Experience During the Workshop

Students participate at the main CEDAR Workshop by attending the individual workshop sessions, giving talks at these sessions or presenting posters at the poster sessions and going to any of the social/networking events throughout the week. At the CEDAR Workshop, the poster session is split between two days, based on which region of the upper atmosphere the research focuses on: Ionosphere-Thermosphere (IT) or Mesosphere Lower-Thermosphere (MLT). Students are encouraged to participate in the Student Poster competition, which is judged by non-students, and awards first and second prizes for graduate students and honorable mentions for graduate and undergraduate students. All students who participate in the competition are given feedback on their poster presentations. In Figure 3, graduate students can be seen explaining their posters to senior scientists during the 2014 IT (a) and MLT (b) Poster Sessions.

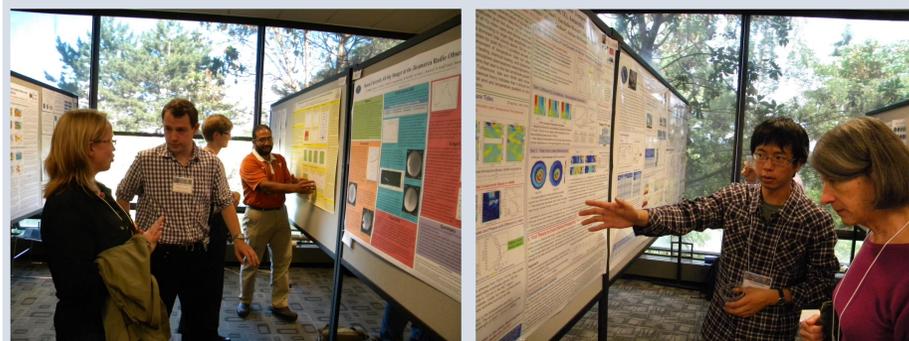


Figure 3. Graduate students participate in the student poster competitions, explaining their posters to senior scientists during the IT (a) and MLT (b) sessions.

3. Student Experience After the Workshop

After having met at the CEDAR Workshop, students continue to stay in touch through social networking such as the CEDAR Students Facebook page (seen in Figure 4). The Facebook page was created by past CSSC Student Representative, Tim Duly, and is maintained by current Student Representative, Lindsay Goodwin.

CEDAR Students also meet up at other conferences and work together at summer schools like the NSF Incoherent Scatter Radar³ and Heliophysics Summer School⁴.



Figure 4. CEDAR Student Facebook page. Photo courtesy of Lindsay Goodwin.

4. The Student Representative Experience

Two Student Representatives are members on the CEDAR Science Steering Committee (CSSC) each year. They are nominated by themselves, their peers, or are nominated by members of the CSSC and then chosen for the position by an NSF representative. They are tasked with planning, organizing and executing the Student Workshops. The Student Representatives also advocate for the student community at all of the CEDAR Workshop planning meetings including a business meeting in the fall at NSF headquarters, a spring teleconference and meetings during the Workshop.



Figure 5. Past CSSC Student Representatives, Dr. Katelynn Greer and Dr. Timothy Duly, attend a CSSC planning dinner during the 2013 CEDAR Workshop with senior CSSC members.

References

- ¹ National Science Foundation CEDAR Funding Program: http://www.nsf.gov/funding/pgm_summ.jsp?pins_id=5503
- ² National Science Foundation CEDAR Workshop: http://cedarweb.hao.ucar.edu/wiki/index.php/Main_Page
- ³ National Science Foundation Incoherent Radar Summer School: <http://amisr.com/workshop>
- ⁴ UCAR/NASA Heliophysics Summer School: <http://www.vsp.ucar.edu/Heliophysics/summer-about-over.shtml>

Acknowledgments

The authors would like to acknowledge the support for the CEDAR Workshops from the National Science Foundation and all of the work that goes into planning the meetings by the CEDAR Science Steering Committee. Special thanks goes to all of the students and scientists who attend the CEDAR Workshops.