



## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### Central New Mexico Local Section

#### *Climate Science Program (CNMCSP)*

Members of the Central New Mexico ACS Local Section will increase their involvement in outreach by training to become climate science communicators to K-12 and public audiences. Their impact will be reinforced using demonstration kits developed collaboratively with *Explora* (an interactive science center) that will extend outreach beyond the grant period. State-based experts will help engage outreach audiences by connecting the concepts in the ACS Climate Science Toolkit to the real world (New Mexico forests and changes in the Arctic, for example).

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## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### Dallas-Ft. Worth Local Section

#### *Climate Science Is the Answer, but What are the Questions?*

A grant designed to address this issue has just been awarded the Dallas–Fort Worth Section of the American Chemical Society (ACS). The grant is one of 11 made by the national ACS in a competition among its local Sections, to facilitate public use of the newly created ACS Climate Science Toolkit. Led by Dr. Bob Landolt at Texas Wesleyan University, a team of North Texas scientists will collaborate with Dallas and Tarrant County Community College Faculty to bring climate-change science concepts into their classrooms. The DFW effort also will make use of a hands-on Energy Simulator developed at the United States Air Force Academy (USAFA).

It is crucial for the public to understand of how energy use impacts the atmosphere and oceans in both the short and long term. The ACS Toolkit is designed to integrate the fundamental science that determines Earth’s climate, and the USAFA Energy Simulator focuses on evaluating the pros and cons of using alternative energy sources. An excellent local team, including consultants, has been assembled to carry out activities to kick-off with a pilot study in the summer of 2013, to be followed by a Climate Science Colloquium for DFW science faculty in 2014. The network of community college faculty in Texas is highly experienced, so this should result in a productive and successful collaboration.

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## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### Illinois Heartland Local Section

The Illinois Heartland ACS Local Section will present a series of workshops for middle, high school, and community college teachers emphasizing bringing climate science into the classroom. Another series will prepare students from the Section's ACS Student Chapters to conduct climate science outreach events with illustrative demonstrations. To facilitate outreach, a Climate Change Speakers Bureau, emphasizing local impacts to extend the concepts in the ACS Climate Science Toolkit, will be organized and publicized.

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## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### Iowa Local Section

The Iowa ACS Local Section will establish a team of climate change science experts drawn from within the Section area to communicate the scientific principles of climate with the public. A one-day workshop will mark the start of the event. The experts will also provide guidance to high school and college students to develop demonstrations and activities they can present at outreach events such as county fairs and farmers' markets. The outreach, combining the science of global climate change in the ACS Climate Science Toolkit with local climate changing effects, will be engaging and powerful.

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## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### Kalamazoo Local Section

The Kalamazoo Section of the American Chemical Society (KACS) will collaborate with the Western Michigan University Climate Change Study Group to reach out to diverse audiences, with funding received in a recent American Chemical Society (ACS) grant. They will use concepts from the ACS's "Climate Science Toolkit" to provide outreach and training to community leaders such as middle school, high school, and faith-based educators and scout group leaders. The project goal is to facilitate discussions of climate change by providing support and resources to leaders in these communities.

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## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### Maine Local Section

#### *Gases and Infrared Radiation: An Inquiry-Based Introductory Chemistry Experiment and Science Café*

A team of educators in the chemistry department at the University of Maine, in cooperation with the Maine ACS Local Section, is developing an inquiry-based introductory chemistry experiment on gases and infrared radiation. In the lab, students obtain FTIR spectra and use infrared sensors to generate parallel streams of data in an inquiry into the phenomena of how carbon dioxide and nitrogen interact with infrared light. Students also investigate a PhET simulation (<http://phet.colorado.edu>) and use the ACS Climate Science Toolkit ([portal.acs.org/portal/PublicWebSite/climatescience/](http://portal.acs.org/portal/PublicWebSite/climatescience/)) to provide insight into the experimental data. Teams of students then construct claims using their data to answer a broader scientific question about the impact of increasing the concentration of carbon dioxide in the atmosphere. Each student group presents their evidence, reasoning, and conclusions to other student groups in a poster. Plans for this project include student piloting and refinement over several semesters, and subsequently making the lab available to other colleges and high schools. A Science Café on greenhouse gases organized by the Maine Section is also planned in order to engage the public and be a vehicle for teachers and students to share what they have learned from the experiment.

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## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### New York Local Section

The New York ACS Local Section has a rich variety of resources available for collaboration to communicate the climate change science concepts in the ACS Climate Science Toolkit. The Section will use these partners, its own expertise, and high school teacher leaders to develop interactive and engaging slideshow-demonstration-discussion climate change curricular modules for classroom use. This core expertise will also be used in outreach activities in several venues, including the New York Hall of Science, Eastern Analytical Symposium, Science Cafes, and other museums and informal science centers.

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## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### North Carolina Local Section

#### ***NC Science Olympiad 'Green Generation' Program***

The North Carolina Section of the American Chemical Society will carry out a collaborative project with the NC Science Olympiad program to provide resources, volunteers, and expertise to develop and run their 'Green Generation' high school event covering topics on the human impacts on the environment and green chemistry initiatives. This topic will be included in NC Science Olympiad tournaments across the state of North Carolina, reaching more than 1000 high school students over a 2-year period. Students, teachers, coaches, and judges will use the resources provided on the ACS Climate Change Toolkit Website to explore Climate Change topics and understand the science behind in climate change and possible remediation techniques. Thus, the Climate Science Toolkit will provide a solid foundation for the knowledge development of this new generation of top-notch future scientists and engineers as well as their teachers and Science Olympiad coaches.

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## **CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS**

### **Northern West Virginia Local Section**

The Northern West Virginia ACS Local Section will carry out a collaborative project between the science and arts communities focused on the climate change science in the ACS Climate Science Toolkit. An art competition for depictions of some aspect of climate change will draw submissions from elementary school students to professional artists. The competition and exhibitions of the best art in a variety of venues that include scientific meetings will be a draw for artists at all levels to submit their work and demonstrate how art can communicate science.

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## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### Portland Local Section

As part of the American Chemical Society's (ACS) Presidential Climate Science Challenge, the Portland ACS Local Section has been awarded a grant for a project entitled "The Power of Partnerships: Educating Portland, Oregon in Climate Change." Through strategic partnerships among the Portland ACS Local Section, Portland institutions of higher learning and the Oregon Museum of Science and Industry (OMSI), the project participants seek to increase understanding and awareness of climate change and teach environmental responsibility. Students from Portland Community College (PCC), Portland State University (PSU), Reed College and the University of Portland (UP) will work with chemistry faculty to develop climate science activities and demonstrations to be presented at OMSI during National Chemistry Week (Oct. 20-26, 2013). In addition to guidance provided by their mentors, students will use the web-based ACS Climate Science Toolkit developed by the ACS. Students will also learn to communicate scientific concepts effectively in an informal learning environment through a workshop hosted by OMSI, a member of the "Portal to the Public" Network. Chemistry faculty participants are Professors Julie Fry (Reed), Angela Hoffman (UP), Jim Pankow (PSU), Tracey Scherban (PCC) and Carl Wamser (PSU). The Project Director may be contacted at [tracey.scherban15@pcc.edu](mailto:tracey.scherban15@pcc.edu) for more information.

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## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### **Puerto Rico Local Section**

The Puerto Rico ACS Local Section will use the content of the ACS Climate Science Toolkit supplemented with locally developed hands-on activities to train high school Chem Club students, college ACS Student Chapter members, and their teachers/faculty advisors as climate change science communicators. The students will use these activities to communicate with younger students and to present to the public via outreach events, including the Festival de Química, a part of Earth Day and National Chemistry Week celebrations.

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## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### **Puget Sound Local Section**

Many members of the Puget Sound ACS Local Section have volunteered to form a speakers bureau focused on communicating climate change science. Their preparation will include ACS Climate Science Toolkit concepts, local experts, a science communications expert, and development of a slideshow presentation. After being trained they will present at outreach events and mentor ACS Student Chapter members to devise, test, and present a pair of interactive climate change games to engage younger children and families in informal settings.

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## CLIMATE SCIENCE CHALLENGE GRANT RECIPIENTS

### Wakarusa Valley Local Section

***Empower the Messenger:***

***Training college students to constructively discuss climate science issues***

Members of the Wakarusa Valley ACS Local Section will create a multidisciplinary service-learning course at the University of Kansas (KU) entitled “Constructive Discussions on Climate Change.” The course curriculum will draw upon resources from the KU Departments of Chemistry and Chemical Engineering, Center for Environmentally Beneficial Catalysis (CEBC), Center for Sustainability, and others. Students will learn about the impact of climate change in Kansas and around the world by studying data collection methods, greenhouse gases, ocean acidity, climate modeling, and renewable energies. The course will employ resources from the ACS Climate Science Toolkit and other media. Local Section members have recruited several experts in informal science education who will model best practices in communicating technical content to non-scientists. The service learning component of this course will require students to choose venues to engage the non-scientific public in climate change discussions. Students will also participate in a half-day “Climate Change Workshop” on communication strategies that will be open to all members of the Wakarusa Valley Local Section. Additionally, the grant will support the development of hands-on climate science toolkits that students can use for climate-related demonstrations at outreach events.

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