SOUTHWEST REGIONAL SCIENCE SYMPOSIUM

UNIVERSITY OF COLORADO AND NATIONAL CENTER FOR ATMOSPHERIC RESEARCH
MAY 4-5, 2018
Welcome to the 2018 Southwest Regional Science Research Symposium. We are privileged to welcome you to the 3rd Annual Southwest Regional Science Research Symposium, held this year in Boulder, Colorado. The six regional symposia include students spanning from Puerto Rico to Alaska, representing more than half the states in the country. Our region is pleased to welcome students from New Mexico and Oklahoma, along with previously represented states of Colorado and Texas.

Students, teachers, and chaperones will be staying at the Millennium Harvest Hotel, located on the Boulder Creek at the edge of the campus of the University of Colorado-Boulder. We are very happy to welcome the 32 students and their teachers. And I would be remiss not to thank and applaud the great parents who support these young scientists.

Richard Wagner, Professor of Meteorology and GLOBE Partner
Center for Advanced STEM Education, Metropolitan State University of Denver

Hosts

CIRES Education Outreach is the engagement services support arm of the Cooperative Institute for Research in Environmental Sciences (CIRES) based at the University of Colorado Boulder. Their mission is to help people connect with CIRES to increase the use and understanding of science for a sustainable future. They help CIRES make contributions to education, training, learning resources, evaluation and community building.

NCAR/UCAR’s mission for Education and Outreach is to provide transformative STEM educational experiences to all learners. Their programs support the advancement of careers in the atmospheric and related sciences, and complement university and K-12 teaching.

Students, teachers, and chaperones will be staying at the Millennium Harvest House, located on the Boulder Creek at the edge of the campus of the University of Colorado-Boulder. The hotel is providing a group dining area for Saturday breakfast as part of the symposium, but individuals or groups can also dine there on Sunday at cost. Enjoy the outdoor pavilion and beautiful grounds.

Sponsors

GLOBE Program
Introducing young scientists to the joys of scientific observations since 1994.

NASA
Primary Sponsor for GLOBE, with assistance from NSF and NOAA.

MSU Denver Center for Advanced STEM Education (CASE)
Supports STEM Education from K-12 through university and integrates GLOBE into its MULTI STEM Summer institute and Saturday workshops for science teachers.
Thanks for Sharing Facilities

Mobile Earth and Space Observatory (MESO)
Introducing GLOBE to students across Colorado through a grant from the U.S. EPA

Stories from the Collection
The CU-Boulder Museum has the largest natural history collection in the Rocky Mountain region with nearly five million objects. Learn the stories behind some of the highlights of the collection in this hands-on, interactive exploration of the Museum.

Schedule of Events

Friday May 4th, 2018  Hosted by University Corporation for Atmospheric Research (UCAR)

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<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
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<tbody>
<tr>
<td>12:00 – 3:00 pm</td>
<td>Participants arrive in Boulder</td>
<td>Millennium Harvest House Hotel</td>
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<tr>
<td>3:00 - 4:00</td>
<td>Vans to National Center for Atmospheric Research, groups with own transport go when they wish</td>
<td>Hotel to NCAR Mesa Lab</td>
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<tr>
<td>3:15 – 4:30</td>
<td>Check in at Mesa Lab, Explore Exhibits, Mobile Earth and Space Observatory</td>
<td>NCAR Mesa Lab, Mesa Lab, Mesa Lab Parking Lot</td>
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<tr>
<td>4:30</td>
<td>Welcome and Expectations</td>
<td>NCAR Mesa Lab Main Seminar Room</td>
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<td></td>
<td><strong>Welcome to NCAR</strong></td>
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<td>John Ristvey, UCAR Center for Science Education</td>
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<td></td>
<td><strong>Video Remarks</strong></td>
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<td>Tony Murphy, GLOBE Director</td>
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<tr>
<td></td>
<td><strong>Expectations and Tips for Peer Review, Introductions</strong></td>
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<td>Richard Wagner, MSU Denver, Symposium Lead Organizer</td>
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<tr>
<td>5:00</td>
<td>Leslie Hartten, University of Colorado, NOAA</td>
<td>Main Seminar Room</td>
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<tr>
<td>5:15-5:30</td>
<td>Split into two groups and gather at designated locations</td>
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<td>Time</td>
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| 5:30         | Group 1 (8<sup>th</sup> and 9<sup>th</sup> grade students and their teachers)  
                Weather Trail and IR Thermometers  
                Group 2 (10<sup>th</sup> and 11<sup>th</sup> grade students and their teachers)  
                Dropsondes and Wind Tunnel | Weather Trail  
                Chapman Room | Chapman Room  

| 6:15         | Group 1 (8<sup>th</sup> and 9<sup>th</sup> grade students and their teachers)  
                Dropsondes and Wind Tunnel – Chapman Room  
                Group 2 (10<sup>th</sup> and 11<sup>th</sup> grade students and their teachers)  
                Weather Trail and IR Thermometers | Chapman Room  
                Weather Trail | NCAR Mesa Lab Cafeteria

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<tr>
<th>7:00</th>
<th>Dinner</th>
<th>NCAR Mesa Lab Cafeteria</th>
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<tr>
<td>7:30-9:30</td>
<td>Explore NCAR Exhibits</td>
<td>NCAR Mesa Lab</td>
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<tr>
<td>7:30-8:00</td>
<td>Mobile Earth and Space Observatory (attend one of three sessions)</td>
<td>Mesa Lab Parking Lot</td>
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<tr>
<td>8:00-8:30</td>
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<tr>
<td>8:30-9:00</td>
<td>Return to Hotel</td>
<td>Millennium Harvest House Hotel</td>
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**Saturday May 5<sup>th</sup>, 2018 Hosted by University of Colorado CIRES Education and Outreach**

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<th>Time</th>
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<tr>
<td>7:00 am</td>
<td>Breakfast</td>
<td>Millennium Harvest House Hotel</td>
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<tr>
<td>8:30</td>
<td>Walk to Poster Set-up Rooms</td>
<td>1.2 miles along Boulder Creek and University of Colorado Main Campus</td>
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| 9:00         | Welcome from Anne Gold, Director of CIRES Education and Outreach         | University Memorial Center  
                Introductions, and Logistics                                           |
| 9:15         | Set up Posters and Practice                                              | University of Colorado Main Campus                                      |
| 9:45         | Student Peer Evaluation                                                  | CIRES Fellows Room                                                       |
| 10:30-12:00  | Science Symposium Presentations to Reviewers                             | CIRES Reading Room                                                       |
| 9:45-11:45   | Professional Development for Teachers                                    | CIRES Fellows Room                                                       |
| 10:30-11:30  | GLOBE Partner Roundtable                                                 | CIRES Reading Room                                                       |
| 12:00 pm     | Lunch                                                                    | Aspen Rooms 285, 287, 289 or adjacent outside terrace                   |
| 12:45-1:45   | Reviewer Deliberations                                                   | Aspen Rooms 285, 287, 289                                                |
| 12:45-2:30   | Interactive Science Activities (students and teachers)                   | University of Colorado Museum of Natural History                         |
| 1:45-2:30    | Awards Ceremony                                                          | Aspen Rooms 285, 287, 289                                                |
| 2:30         | Adjourn, those staying another night return to hotel                     | Millennium Harvest House Hotel                                           |
POSTER SESSION (on display 10:00am to 2:00pm on Saturday)

Grade 5-8 Research Posters

1. Biodegradable “Plastic” and How it Affects Water Quality
   Simone Kirkevold, Kayla Barton, Lilah Ruiz, Bruno Gallegos Sanchez
   Westview Middle School – CO

Grade 9-12 Research Posters

2. How Climate Change affects our tribal water
   Kaelene Chino, Derald Begay
   Mescalero Apache School - NM

3. The Effects of the Dam on Water Quality of The Palestine City Lakes
   Thomas Willingham, Cobe Birdwell
   UT Tyler Palestine - TX

4. Analyzing Land Cover Type and Surface Temperature in McKittrick Canyon at Guadalupe Mountains National Park in Comparison to Chihuahuan Desert Landscape
   Aaron Gonzales, Gavin Barnett, Skyler Hill
   Carlsbad Early College High School - NM

5. An Investigation of Macroinvertebrates to Compare the Water Quality of Upper and Lower City Lakes
   Rebecca Rutledge, Natalie Cobble, Travis Lestig
   UT Tyler Palestine - TX

6. Can the type of soil influence weather patterns in a region?
   Issac Johnson, Elena Hollopeter, JayLynn Cross, Jessica Bacolod, Paulina Sierra
   Dove Science Academy - OK

7. Hydrosphere Investigation of the Upper/Lower Pecos River and McKittrick Canyon at Guadalupe Mountains National Park
   Eliza Bierle, Zenas Granger
   Carlsbad Early College High School - NM

8. Monitoring Nitrate Levels in Palestine City Lakes
   Grace Kiser, Amira Riley
   UT Tyler Palestine – TX

9. Investigation of New Mexican Soil: Characterization and Classification of Chihuahuan Desert and McKittrick Canyon at Guadalupe Mountains National Park
   Aidan Brunemann, Estevan Soto, Stephen Hollis, Ethan Nikkel
   Carlsbad Early College High School – NM

10. Fish + Food = Science of Aquaphonic
    Shylo Klinekole, Cora Breuninger
    Mescalero Apache School – NM

11. The Effects of Time on Water Sources
    Baker Wynne, Kennie Adams, David Huntsberger
    UT Tyler - TX
THANK YOU FOR THE ASSISTANCE FROM:

Teachers
Jayme Margolin-Sneider  Westview Middle School
Monica Martinez  Westview Middle School
Ben Moran  UT-Tyler Palestine Campus
Emily Wood  UT-Tyler Tyler Campus
Catalina Vizueth  Dove Science Academy
Hannah VanScotter  Carlsbad Early College High School
Nate Raynor  Mescalero Apache School

GLOBE Partners & GLOBE Personnel
Rich Wagner  MSU Denver
Michael Odell  University of Texas - Tyler
Teresa Kennedy  University of Texas - Tyler
Jennifer Taylor  University of Colorado – CIRES
Kiley Remiszenski  University of New Hampshire (UNH)
Jennifer Bourgeault  UNH
Jorge Arias  GLOBE Implementation Office
John Ristvey  UCAR Education and Outreach
Deanna TeBockhorst  UCAR Education and Outreach
Jamila Rockette  GLOBE Implementation Office
Christy Wall  New Mexico Wildlife Center

Reviewers
Diann Cullen  Boulder Labs Library
Wyatt Merrill  NOAA
Janelle Johnson  MSU Denver
Cassie Hayter  MSU Denver
RoseAnn Vik  MSU Denver
Clara Draper  NOAA, ESRL, PSU/ CU-Boulder, CIRES
Leslie Hartten  CU-Boulder, NOAA/ESRL

Videographer
Keah Schuenemann  MSU Denver

Conference Staff
Rich Wagner  MSU Denver
RoseAnn Vik  MSU Denver
John Ristvey  UCAR Education and Outreach
Deanna TeBockhorst  UCAR Education and Outreach
Jamila Rockette  GLOBE Implementation Office
Jennifer Taylor  University of Colorado – CIRES
Amanda Morton  University of Colorado – CIRES