GLOBE History

Announced in 1994 and launched in 1995, the Global Learning and Observations to Benefit the Environment (GLOBE) Program has been a leader as an international science and education program that creates a network of students, teachers, and scientists to better understand, sustain, and improve Earth’s environment at local, regional, and global scales.

More than 222 million measurements have been contributed to the GLOBE science database, creating useful, standardized, research-quality data that support informal and professional scientific exploration.

Generations of students and teachers in more than 125 countries have moved through and beyond the GLOBE program. Widely available information technology and tools have enabled citizen scientists to participate in GLOBE anywhere and anytime. By motivating and supporting citizen science with authentic learning of Earth Systems Science (ESS), GLOBE serves learners of all ages who are enthusiastic about scientific discovery locally and globally.

The GLOBE Vision

A worldwide community of students, teachers, scientists, and citizens working together to better understand, sustain, and improve Earth’s environment at local, regional, and global scales.

The GLOBE Mission

To promote the teaching and learning of science, enhance environmental literacy and stewardship, and promote scientific discovery.

For more information, we invite you to visit www.globe.gov.
About GLOBE Partnerships

GLOBE partners facilitate the implementation of GLOBE within a service area. Partners recruit, train, and mentor new GLOBE teachers and facilitators to promote the teaching and learning of science, enhance environmental literacy and stewardship, and promote scientific discovery.

These organizations are invited to become U.S. GLOBE partners:

- **Nonprofit or governmental organizations** who support student inquiry and research about the environment

- **Businesses and organizations** whose corporate mission is to invest in successful educational outcomes of students and the community at large

Each U.S. GLOBE partner must have a formal affiliation with an institution of higher education, a school district, a state department of education, or a recognized informal education organization (501c3) such as STEM learning centers, museums, and foundations that can sustain the implementation of GLOBE in their communities.

New and prospective GLOBE partners must demonstrate the capacity to recruit, train, and mentor teachers in the identified service area(s). Their efforts must focus on capacity-building, program sustainability, and student inquiry and research.

View a list of current GLOBE U.S. partners at [https://www.globe.gov/web/united-states-of-america/home/resources](https://www.globe.gov/web/united-states-of-america/home/resources). If you would like information about becoming a GLOBE partner, please contact the Community Support Team at globehelp@ucar.edu.
GLOBE U.S. Coordination Office

The GLOBE U.S. Coordination Office (“The Office”) is supported through a sub-award from the GLOBE Implementation Office. Headquartered at the Leitzel Center at the University of New Hampshire, The Office is managed by Jennifer Bourgeault, United States Country Coordinator, Haley Wicklein, Assistant Country Coordinator, and Alicia Carlson, Outreach Lead.

The Office supports a diverse group of 126 fully-engaged GLOBE partners to create a strong, self-sustainable framework for training and responsive personal support for every GLOBE member in the country. The Office works with the U.S. Partner Forum to contact and provide support for every partner in the country on a personal basis and through a regional model.

GLOBE Program Highlights

- The Office hosts regular webinars on topics such as GLOBE website troubleshooting, funding and educational opportunities, and other topics as suggested by the partners. These webinars, called Partner Watercoolers, model the idea that informal gatherings around watercoolers at work can lead to valuable exchanges of information and new collaborations.

- The Office publishes, and encourages partners to publish stories on U.S. GLOBE students, teachers, partners, and organizational accomplishments, featured on the GLOBE website and U.S. GLOBE social media accounts (@US_GLOBE and https://www.facebook.com/groups/US.GLOBE.Educators/).

- The Office coordinates six annual in-person Student Research Symposia (SRS) for teacher/student teams supported with funding from NASA (grant 80NSSC18K0135) and Youth Learning As Citizen Environmental Scientists (YLACES), along with strengthening the local scientist network and GLOBE alumni on a regional level and engaging these groups in GLOBE events.
# United States GLOBE Partnerships

<table>
<thead>
<tr>
<th>STATE/TERRITORY</th>
<th>PARTNERSHIP</th>
<th>CONTACT</th>
<th>PARTNER WEBPAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALABAMA</strong></td>
<td>AMSTI</td>
<td>Jackie DeJarnett <a href="mailto:jackie.dejarnett@alsde.edu">jackie.dejarnett@alsde.edu</a></td>
<td><a href="http://www.globe.gov/web/amsti-globe">www.globe.gov/web/amsti-globe</a></td>
</tr>
<tr>
<td></td>
<td>NASA Marshall Space Flight Center</td>
<td>Dr. Susan Currie <a href="mailto:susan.currie@nasa.gov">susan.currie@nasa.gov</a> (256) 544-3629</td>
<td><a href="http://www.globe.gov/web/nasa-marshall-space-flight-center-partnership">www.globe.gov/web/nasa-marshall-space-flight-center-partnership</a></td>
</tr>
<tr>
<td><strong>ALASKA</strong></td>
<td>University of Alaska Fairbanks <em>(pg. 21)</em></td>
<td>Dr. Elena Sparrow <a href="mailto:ebsparrow@alaska.edu">ebsparrow@alaska.edu</a> (907) 474-7966</td>
<td><a href="http://www.globe.gov/web/university-of-alaska-fairbanks">www.globe.gov/web/university-of-alaska-fairbanks</a></td>
</tr>
<tr>
<td><strong>ARIZONA</strong></td>
<td>Arizona State University</td>
<td>Molina Walters <a href="mailto:Molina.walters@asu.edu">Molina.walters@asu.edu</a> (480) 727-1510</td>
<td><a href="http://www.globe.gov/web/arizona-state-university-globe-partner">www.globe.gov/web/arizona-state-university-globe-partner</a></td>
</tr>
<tr>
<td></td>
<td>Biosphere 2</td>
<td>Kevin Bonine <a href="mailto:kebonine@email.arizona.edu">kebonine@email.arizona.edu</a> (520) 621-0232</td>
<td><a href="http://www.globe.gov/web/biosphere-2">www.globe.gov/web/biosphere-2</a></td>
</tr>
<tr>
<td></td>
<td>Northern Arizona University</td>
<td>Mansel A. Nelson <a href="mailto:mansel.nelson@nau.edu">mansel.nelson@nau.edu</a> (928) 523-1275</td>
<td><a href="http://www.globe.gov/web/northern-arizona-university">www.globe.gov/web/northern-arizona-university</a></td>
</tr>
<tr>
<td><strong>ARKANSAS</strong></td>
<td>Arkansas Partnership for STEM Education</td>
<td>Keith Harris <a href="mailto:krharris@ualr.edu">krharris@ualr.edu</a> (501) 569-8149</td>
<td><a href="http://www.globe.gov/web/arkansas-partnership-for-stem-education">www.globe.gov/web/arkansas-partnership-for-stem-education</a></td>
</tr>
<tr>
<td></td>
<td>Delta STEM Education Center</td>
<td>Cynthia Miller <a href="mailto:camiller@astate.edu">camiller@astate.edu</a> (870) 897-5124</td>
<td><a href="http://www.globe.gov/web/delta-stem-education-center">www.globe.gov/web/delta-stem-education-center</a></td>
</tr>
<tr>
<td></td>
<td>University of Arkansas <em>(pg. 22)</em></td>
<td>Lynne H. Hehr <a href="mailto:lhehr@uark.edu">lhehr@uark.edu</a> (479) 575-3875</td>
<td><a href="http://www.globe.gov/web/university-of-arkansas">www.globe.gov/web/university-of-arkansas</a></td>
</tr>
</tbody>
</table>
## United States GLOBE Partnerships continued

<table>
<thead>
<tr>
<th>STATE/TERRITORY</th>
<th>PARTNERSHIP</th>
<th>CONTACT</th>
<th>PARTNER WEBPAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALIFORNIA</td>
<td>AERO Institute</td>
<td>Shaun Smith  &lt;br&gt; <a href="mailto:shaun.smith@nasa.gov">shaun.smith@nasa.gov</a></td>
<td><a href="http://www.globe.gov/web/aero-institute">www.globe.gov/web/aero-institute</a></td>
</tr>
<tr>
<td></td>
<td>California Academy of Sciences/ Science Action Club (pg. 23)</td>
<td>Rachael Van Schoik  &lt;br&gt; <a href="mailto:rvanschoik@calacademy.org">rvanschoik@calacademy.org</a></td>
<td><a href="http://www.globe.gov/web/26109314">www.globe.gov/web/26109314</a></td>
</tr>
<tr>
<td></td>
<td>Central San Joaquin Valley (pg. 24)</td>
<td>Leigh-Ann Olsen  &lt;br&gt; <a href="mailto:lolsen@kingsburghigh.com">lolsen@kingsburghigh.com</a>  &lt;br&gt; (559) 897-5156</td>
<td><a href="http://www.globe.gov/web/central-san-joaquin-valley-partnership">www.globe.gov/web/central-san-joaquin-valley-partnership</a></td>
</tr>
<tr>
<td></td>
<td>Elkhorn Slough National Estuarine Research Reserve</td>
<td>Peggy Foletta  &lt;br&gt; <a href="mailto:peggy.foletta@wildlife.ca.gov">peggy.foletta@wildlife.ca.gov</a>  &lt;br&gt; (559) 970-9467</td>
<td><a href="http://www.globe.gov/web/elkhorn-slough-national-estuarine-research-reserve">www.globe.gov/web/elkhorn-slough-national-estuarine-research-reserve</a></td>
</tr>
<tr>
<td></td>
<td>Endeavour Center, NASA Educator Resource Center</td>
<td>Edmund Burke  &lt;br&gt; <a href="mailto:Edmund.burke@spaceinformation-labs.com">Edmund.burke@spaceinformation-labs.com</a>  &lt;br&gt; (805) 925-9010</td>
<td><a href="http://www.globe.gov/web/endavour-center-nasa-educator-resource-center">www.globe.gov/web/endavour-center-nasa-educator-resource-center</a></td>
</tr>
<tr>
<td></td>
<td>Los Angeles Unified School District</td>
<td>Henry Ortiz  &lt;br&gt; <a href="mailto:Henry.Ortiz@sbcglobal.net">Henry.Ortiz@sbcglobal.net</a>  &lt;br&gt; (818) 416-9506</td>
<td><a href="http://www.globe.gov/web/los-angeles-unified-school-district">www.globe.gov/web/los-angeles-unified-school-district</a></td>
</tr>
<tr>
<td></td>
<td>Los Angeles Public Library</td>
<td>Vivienne Bird  &lt;br&gt; <a href="mailto:vbyrd@lapl.org">vbyrd@lapl.org</a>  &lt;br&gt; (213) 228-7552</td>
<td><a href="http://www.globe.gov/web/los-angeles-public-library">www.globe.gov/web/los-angeles-public-library</a></td>
</tr>
<tr>
<td></td>
<td>NASA Jet Propulsion Laboratory</td>
<td>Peter Falcon  &lt;br&gt; <a href="mailto:pcfalcon@jpl.nasa.gov">pcfalcon@jpl.nasa.gov</a>  &lt;br&gt; (818) 393-0729</td>
<td><a href="http://www.globe.gov/web/jet-propulsion-laboratory">www.globe.gov/web/jet-propulsion-laboratory</a></td>
</tr>
<tr>
<td></td>
<td>New Education Options</td>
<td>Bo Lebo  &lt;br&gt; <a href="mailto:bo_lebo@hotmail.com">bo_lebo@hotmail.com</a></td>
<td><a href="http://www.globe.gov/web/new-education-options">www.globe.gov/web/new-education-options</a></td>
</tr>
<tr>
<td></td>
<td>San Joaquin County Office of Education</td>
<td>Conni Bock  &lt;br&gt; <a href="mailto:cbock@sjcoe.net">cbock@sjcoe.net</a>  &lt;br&gt; (209) 468-9223</td>
<td><a href="http://www.globe.gov/web/san-joaquin-county-office-of-education">www.globe.gov/web/san-joaquin-county-office-of-education</a></td>
</tr>
<tr>
<td></td>
<td>Science@OC</td>
<td>Laurie Smith  &lt;br&gt; <a href="mailto:laurie.smith@scienceoc.org">laurie.smith@scienceoc.org</a>  &lt;br&gt; (714) 541-5300</td>
<td><a href="http://www.globe.gov/web/science-oc-partnership">www.globe.gov/web/science-oc-partnership</a></td>
</tr>
<tr>
<td></td>
<td>WestED and CCASN at UC Berkeley (pg. 25)</td>
<td>Tracy Ostrom  &lt;br&gt; <a href="mailto:tostrom@berkeley.edu">tostrom@berkeley.edu</a>  &lt;br&gt; (510) 219-0538</td>
<td><a href="http://www.globe.gov/web/wested-and-casn-at-uc-berkeley">www.globe.gov/web/wested-and-casn-at-uc-berkeley</a></td>
</tr>
</tbody>
</table>
### United States GLOBE Partnerships continued

<table>
<thead>
<tr>
<th>STATE/TERRITORY</th>
<th>PARTNERSHIP</th>
<th>CONTACT</th>
<th>PARTNER WEBPAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLORADO</td>
<td>Cires Education Outreach (pg. 26)</td>
<td>Jonathan Griffith <a href="mailto:Jonathan.Griffith@colorado.edu">Jonathan.Griffith@colorado.edu</a></td>
<td><a href="http://www.globe.gov/web/cires-education-outreach">www.globe.gov/web/cires-education-outreach</a></td>
</tr>
<tr>
<td></td>
<td>Metropolitan State University of Denver</td>
<td>Janelle Johnson <a href="mailto:jjohn428@msudenver.edu">jjohn428@msudenver.edu</a> (303) 556-3166</td>
<td><a href="http://www.globe.gov/web/metropolitan-state-university-of-denver">www.globe.gov/web/metropolitan-state-university-of-denver</a></td>
</tr>
<tr>
<td></td>
<td>Roaring Fork Conservancy</td>
<td>Christina Medved <a href="mailto:christina@roaringfork.org">christina@roaringfork.org</a></td>
<td><a href="http://www.globe.gov/web/roaring-fork-conservancy">www.globe.gov/web/roaring-fork-conservancy</a></td>
</tr>
<tr>
<td></td>
<td>UCAR Center for Science Education (pg. 27)</td>
<td>John Ristvey <a href="mailto:jristvey@ucar.edu">jristvey@ucar.edu</a> (303) 497-2591</td>
<td><a href="http://www.globe.gov/web/ucar-center-for-science-education">www.globe.gov/web/ucar-center-for-science-education</a></td>
</tr>
<tr>
<td>CONNECTICUT</td>
<td>Southern Connecticut State University</td>
<td>Dr. Scott Michael Graves <a href="mailto:GravesS1@SouthernCT.edu">GravesS1@SouthernCT.edu</a> (203) 392-6604</td>
<td><a href="http://www.globe.gov/web/southern-connecticut-state-university">www.globe.gov/web/southern-connecticut-state-university</a></td>
</tr>
<tr>
<td></td>
<td>Talcott Mountain Science Center</td>
<td>Jonathan Craig <a href="mailto:jcraig@tmsc.org">jcraig@tmsc.org</a> (860) 677-8571</td>
<td><a href="http://www.globe.gov/web/talcott-mountain-science-center">www.globe.gov/web/talcott-mountain-science-center</a></td>
</tr>
<tr>
<td>FLORIDA</td>
<td>Florida Agricultural and Mechanical University</td>
<td>Dr. Katherine Milla <a href="mailto:Katherine.milla@famu.edu">Katherine.milla@famu.edu</a> (850) 412-7004</td>
<td><a href="http://www.globe.gov/web/florida-agricultural-and-mechanical-university">www.globe.gov/web/florida-agricultural-and-mechanical-university</a></td>
</tr>
<tr>
<td></td>
<td>University of South Florida</td>
<td>Teresa Greely Greely.usf.edu (727) 553-3921</td>
<td><a href="http://www.globe.gov/web/university-of-south-florida">www.globe.gov/web/university-of-south-florida</a></td>
</tr>
<tr>
<td>GEORGIA</td>
<td>Center for Sustainable Communities</td>
<td>Garry Harris <a href="mailto:gharris@htsenterprise.com">gharris@htsenterprise.com</a></td>
<td><a href="http://www.globe.gov/web/center-for-sustainable-communities">www.globe.gov/web/center-for-sustainable-communities</a></td>
</tr>
<tr>
<td></td>
<td>SOSSI – Saving Our Sons &amp; Sisters International LLC</td>
<td>Chuck Barlow Jr <a href="mailto:info@iamsossi.org">info@iamsossi.org</a></td>
<td><a href="http://www.globe.gov/web/sossi-saving-our-sons-sisters-international-llc">www.globe.gov/web/sossi-saving-our-sons-sisters-international-llc</a></td>
</tr>
<tr>
<td></td>
<td>University of West Georgia</td>
<td>Randa Harris <a href="mailto:rharris@westga.edu">rharris@westga.edu</a> (678) 839-4056</td>
<td><a href="http://www.globe.gov/web/state-university-of-west-georgia">www.globe.gov/web/state-university-of-west-georgia</a></td>
</tr>
</tbody>
</table>
## United States GLOBE Partnerships continued

<table>
<thead>
<tr>
<th>STATE/TERRITORY</th>
<th>PARTNERSHIP</th>
<th>CONTACT</th>
<th>PARTNER WEBPAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAWAII</td>
<td>Pacific Resources for Education and Learning</td>
<td>Ethan Allen <a href="mailto:allene@prel.org">allene@prel.org</a> (808) 441-1392</td>
<td><a href="http://www.globe.gov/web/pacific-resources-for-education-and-learning">www.globe.gov/web/pacific-resources-for-education-and-learning</a></td>
</tr>
<tr>
<td>ILLINOIS</td>
<td>Illinois State University</td>
<td>Do-Yong Park <a href="mailto:dpark@ilstu.edu">dpark@ilstu.edu</a> (309) 438-5050</td>
<td><a href="http://www.globe.gov/web/illinois-state-university">www.globe.gov/web/illinois-state-university</a></td>
</tr>
<tr>
<td></td>
<td>Western Illinois University</td>
<td>Dr. Redina Herman <a href="mailto:Rl-herman@wiu.edu">Rl-herman@wiu.edu</a> (309) 298-1764</td>
<td><a href="http://www.globe.gov/web/western-illinois-university">www.globe.gov/web/western-illinois-university</a></td>
</tr>
<tr>
<td>INDIANA</td>
<td>Purdue University</td>
<td>Steven Smith <a href="mailto:mrsmith@purdue.edu">mrsmith@purdue.edu</a></td>
<td><a href="http://www.globe.gov/web/purdue-university">www.globe.gov/web/purdue-university</a></td>
</tr>
<tr>
<td>IOWA</td>
<td>Iowa Academy of Science</td>
<td>Craig Johnson <a href="mailto:craig.johnson@uni.edu">craig.johnson@uni.edu</a> (319) 273-2021</td>
<td><a href="http://www.globe.gov/web/the-iowa-academy-of-science">www.globe.gov/web/the-iowa-academy-of-science</a></td>
</tr>
<tr>
<td>KANSAS</td>
<td>Fort Hays State University</td>
<td>Paul Adams <a href="mailto:padams@fhsu.edu">padams@fhsu.edu</a> (785) 628-5344</td>
<td><a href="http://www.globe.gov/web/fort-hays-state-university">www.globe.gov/web/fort-hays-state-university</a></td>
</tr>
<tr>
<td></td>
<td>Kansas University</td>
<td>Kimberly Staples <a href="mailto:Kstaples@ksu.edu">Kstaples@ksu.edu</a> (785) 532-5556</td>
<td><a href="http://www.globe.gov/web/kansas-state-university">www.globe.gov/web/kansas-state-university</a></td>
</tr>
<tr>
<td>LOUISIANA</td>
<td>College of Education, University of New Orleans</td>
<td>Ivan Gill <a href="mailto:igill@uno.edu">igill@uno.edu</a> (504) 280-1278</td>
<td><a href="http://www.globe.gov/web/college-of-education-university-of-new-orleans">www.globe.gov/web/college-of-education-university-of-new-orleans</a></td>
</tr>
<tr>
<td></td>
<td>Sci-Port: LOUISIANA’S Science Center</td>
<td>Catherine Williamson <a href="mailto:cwilliamson@sciport.org">cwilliamson@sciport.org</a> (318) 424-8706</td>
<td><a href="http://www.globe.gov/web/18553">www.globe.gov/web/18553</a></td>
</tr>
<tr>
<td></td>
<td>Xavier College of Louisiana</td>
<td>Rosalind Pijeaux Hale <a href="mailto:rhale@xula.edu">rhale@xula.edu</a></td>
<td><a href="http://www.globe.gov/web/xavier-university-of-louisiana">www.globe.gov/web/xavier-university-of-louisiana</a></td>
</tr>
<tr>
<td>STATE/TERRITORY</td>
<td>PARTNERSHIP</td>
<td>CONTACT</td>
<td>PARTNER WEBPAGE</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
<td>---------</td>
<td>----------------</td>
</tr>
<tr>
<td>MAINE</td>
<td>Gulf of Maine Research Institute Partner</td>
<td>Leigh Peake <a href="mailto:lpeake@gmri.org">lpeake@gmri.org</a> (207) 772-2321</td>
<td><a href="http://www.globe.gov/web/gulf-of-maine-research-institute-partner">www.globe.gov/web/gulf-of-maine-research-institute-partner</a></td>
</tr>
<tr>
<td>MARYLAND</td>
<td>Arlington Echo Outdoor Education Center</td>
<td>Eoin O’Neill <a href="mailto:eoneill@aacps.org">eoneill@aacps.org</a> (410) 222-3822</td>
<td><a href="http://www.globe.gov/web/arlington-echo-outdoor-education-center-partner">www.globe.gov/web/arlington-echo-outdoor-education-center-partner</a></td>
</tr>
<tr>
<td></td>
<td>Earth Networks</td>
<td>Anuj Agrawal <a href="mailto:aagrawal@earthnetworks.com">aagrawal@earthnetworks.com</a> (301) 250-4000</td>
<td><a href="http://www.globe.gov/web/earth-networks">www.globe.gov/web/earth-networks</a></td>
</tr>
<tr>
<td></td>
<td>NASA Goddard Space Flight Center (pg. 28)</td>
<td>Todd Toth <a href="mailto:Todd.e.toth@nasa.gov">Todd.e.toth@nasa.gov</a> (301) 286-2774</td>
<td><a href="http://www.globe.gov/web/nasa-goddard-space-flight-center">www.globe.gov/web/nasa-goddard-space-flight-center</a></td>
</tr>
<tr>
<td>MASSACHUSETTS</td>
<td>Boston University School of Education (pg. 29)</td>
<td>Peter Garik <a href="mailto:garik@bu.edu">garik@bu.edu</a> (617) 353-4735</td>
<td><a href="http://www.globe.gov/web/boston-university-school-of-education1">www.globe.gov/web/boston-university-school-of-education1</a></td>
</tr>
<tr>
<td></td>
<td>Global STEM Education Center, Inc. (pg. 30)</td>
<td>Larisa Schelkin <a href="mailto:larisa.schelkin@globalstemcenter.org">larisa.schelkin@globalstemcenter.org</a> (508) 395-0676</td>
<td><a href="http://www.globe.gov/web/global_stem_education_center">www.globe.gov/web/global_stem_education_center</a></td>
</tr>
<tr>
<td>MICHIGAN</td>
<td>Grand Valley State University (pg. 32)</td>
<td>Janet Vail <a href="mailto:vailj@gvsu.edu">vailj@gvsu.edu</a> (616) 331-3048</td>
<td><a href="http://www.globe.gov/web/grand-valley-state-university">www.globe.gov/web/grand-valley-state-university</a></td>
</tr>
<tr>
<td></td>
<td>Northern Michigan University (pg. 33)</td>
<td>Mitchell Klett <a href="mailto:mklett@nmu.edu">mklett@nmu.edu</a> (906) 227-1641</td>
<td><a href="http://www.globe.gov/web/northern-michigan-university">www.globe.gov/web/northern-michigan-university</a></td>
</tr>
<tr>
<td></td>
<td>Wayne RESA</td>
<td>David Bydrowski <a href="mailto:davidbydrowski@me.com">davidbydrowski@me.com</a> (734) 306-9508</td>
<td><a href="http://www.globe.gov/web/wayne-county-math-science-center-resa">www.globe.gov/web/wayne-county-math-science-center-resa</a></td>
</tr>
<tr>
<td>STATE/TERRITORY</td>
<td>PARTNERSHIP</td>
<td>CONTACT</td>
<td>PARTNER WEBPAGE</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
<td>---------</td>
<td>----------------</td>
</tr>
<tr>
<td>MINNESOTA</td>
<td>Concordia Language Villages</td>
<td>Denise Phillippe <a href="mailto:phillipp@cord.edu">phillipp@cord.edu</a> (218) 586-8727</td>
<td><a href="http://www.globe.gov/web/concordia-language-villages">www.globe.gov/web/concordia-language-villages</a></td>
</tr>
<tr>
<td></td>
<td>Gidakiimanaaniwigmig (Our Earth Lodge) - Nat’l Cntr for Earth-surface Dynamics</td>
<td>Holly Pellerin <a href="mailto:pel0078@umn.edu">pel0078@umn.edu</a> (218) 879-0757</td>
<td><a href="http://www.globe.gov/web/gidakiimanaaniwigmig-our-earth-lodge-nat-l-cntr-for-earth-surface-dynamics">www.globe.gov/web/gidakiimanaaniwigmig-our-earth-lodge-nat-l-cntr-for-earth-surface-dynamics</a></td>
</tr>
<tr>
<td></td>
<td>Hamline University</td>
<td>Dr. Brian Haskell <a href="mailto:haskell@umn.edu">haskell@umn.edu</a> (612) 378-3242</td>
<td><a href="http://www.globe.gov/web/hamline-university-prtmn112-">www.globe.gov/web/hamline-university-prtmn112-</a></td>
</tr>
<tr>
<td></td>
<td>Wilderness Inquiry</td>
<td>Mary Mallinger <a href="mailto:mary@wildernessinquiry.org">mary@wildernessinquiry.org</a></td>
<td><a href="http://www.globe.gov/web/wilderness-inquiry">www.globe.gov/web/wilderness-inquiry</a></td>
</tr>
<tr>
<td>MISSISSIPPI</td>
<td>Alcorn State University</td>
<td>Dr. Sam Aceil <a href="mailto:saceil@bellsouth.net">saceil@bellsouth.net</a> (601) 877-2343</td>
<td><a href="http://www.globe.gov/web/alcorn-state-university">www.globe.gov/web/alcorn-state-university</a></td>
</tr>
<tr>
<td></td>
<td>INFINITY Science Center</td>
<td>Donna Torres <a href="mailto:dtorres@visitinfinity.com">dtorres@visitinfinity.com</a></td>
<td><a href="http://www.globe.gov/web/infinity-science-center-partner">www.globe.gov/web/infinity-science-center-partner</a></td>
</tr>
<tr>
<td></td>
<td>University of Mississippi</td>
<td>Dr. Debby Chessin <a href="mailto:dchessin@olemiss.edu">dchessin@olemiss.edu</a> (662) 915-5878</td>
<td><a href="https://www.globe.gov/web/university-of-mississippi">https://www.globe.gov/web/university-of-mississippi</a></td>
</tr>
<tr>
<td></td>
<td>University of Southern Mississippi</td>
<td>Dr. Sherry Herron <a href="mailto:Sherry.herron@usm.edu">Sherry.herron@usm.edu</a> (601) 266-4739</td>
<td><a href="http://www.globe.gov/web/university-of-southern-mississippi">www.globe.gov/web/university-of-southern-mississippi</a></td>
</tr>
<tr>
<td>MISSOURI</td>
<td>University of Missouri, Kansas City</td>
<td>Patty Dailey <a href="mailto:pdailey@sciencepioneers.org">pdailey@sciencepioneers.org</a> (816) 460-2262</td>
<td><a href="http://www.globe.gov/web/university-of-missouri-kansas-city">www.globe.gov/web/university-of-missouri-kansas-city</a></td>
</tr>
</tbody>
</table>
### United States GLOBE Partnerships continued

<table>
<thead>
<tr>
<th>STATE/TERRITORY</th>
<th>PARTNERSHIP</th>
<th>CONTACT</th>
<th>PARTNER WEBPAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MONTANA</strong></td>
<td>Salish Kootenai College</td>
<td>Anthony Berthelote <a href="mailto:Anthony_berthelote@skc.org">Anthony_berthelote@skc.org</a> (406) 675-4800 x4205</td>
<td><a href="http://www.globe.gov/web/salish-kootenai-college">www.globe.gov/web/salish-kootenai-college</a></td>
</tr>
<tr>
<td></td>
<td>Southwest Montana Astronomical Society</td>
<td>Lynn Powers <a href="mailto:globe@smasweb.org">globe@smasweb.org</a> (406) 600-3637</td>
<td><a href="http://www.globe.gov/web/southwest-montana-astronomical-society">www.globe.gov/web/southwest-montana-astronomical-society</a></td>
</tr>
<tr>
<td></td>
<td>Stone Child College</td>
<td>Douglas Crebs <a href="mailto:Douglas_crebs@hotmail.com">Douglas_crebs@hotmail.com</a> (406) 385-4313</td>
<td><a href="http://www.globe.gov/web/stone-child-college">www.globe.gov/web/stone-child-college</a></td>
</tr>
<tr>
<td><strong>NEBRASKA</strong></td>
<td>STEM Education at Glacier Creek Preserve</td>
<td>Dr. Carol Engelmann <a href="mailto:cenglemann@unomaha.edu">cenglemann@unomaha.edu</a></td>
<td><a href="http://www.globe.gov/web/stem-education-at-glacier-creek-preserve">www.globe.gov/web/stem-education-at-glacier-creek-preserve</a></td>
</tr>
<tr>
<td><strong>NEVADA</strong></td>
<td>Nova77 STEM Workshop Partner</td>
<td>Ping Wang <a href="mailto:pingwang@nova77.org">pingwang@nova77.org</a> (702) 529-1567</td>
<td><a href="http://www.globe.gov/web/nova77-stem-workshop-partner">www.globe.gov/web/nova77-stem-workshop-partner</a></td>
</tr>
<tr>
<td></td>
<td>University of Nevada- Reno</td>
<td>Dr. David T. Crowther <a href="mailto:crowther@unr.edu">crowther@unr.edu</a> (775) 682-7532</td>
<td><a href="http://www.globe.gov/web/university-of-nevada-reno">www.globe.gov/web/university-of-nevada-reno</a></td>
</tr>
<tr>
<td><strong>NEW HAMPSHIRE</strong></td>
<td>Leitzel Center at the University of New Hampshire (pg. 34)</td>
<td>Jennifer Bourgeault <a href="mailto:usglobecc@gmail.com">usglobecc@gmail.com</a> (603) 862-2449</td>
<td><a href="https://www.globe.gov/web/leitzel-center">https://www.globe.gov/web/leitzel-center</a></td>
</tr>
<tr>
<td><strong>NEW JERSEY</strong></td>
<td>Institute for Earth Observations</td>
<td>John D. Moore <a href="mailto:mr.moore.john@gmail.com">mr.moore.john@gmail.com</a> (856) 829-1900 x1262</td>
<td><a href="http://www.globe.gov/web/palmyra-cove-nature-park">www.globe.gov/web/palmyra-cove-nature-park</a></td>
</tr>
<tr>
<td><strong>NEW MEXICO</strong></td>
<td>New Mexico Public Education Department</td>
<td>Shafiq Chaudhary <a href="mailto:shafiq.chaudhary@state.nm.us">shafiq.chaudhary@state.nm.us</a> (505) 827-6511</td>
<td><a href="http://www.globe.gov/web/new-mexico-public-education-department">www.globe.gov/web/new-mexico-public-education-department</a></td>
</tr>
<tr>
<td></td>
<td>New Mexico Wildlife Center</td>
<td>Dr. Christy Wall <a href="mailto:christy@newmexicowildlifecenter.org">christy@newmexicowildlifecenter.org</a></td>
<td><a href="http://www.globe.gov/web/new-mexico-wildlife-center">www.globe.gov/web/new-mexico-wildlife-center</a></td>
</tr>
</tbody>
</table>
## United States GLOBE Partnerships continued

<table>
<thead>
<tr>
<th>STATE/TERRITORY</th>
<th>PARTNERSHIP</th>
<th>CONTACT</th>
<th>PARTNER WEBPAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW YORK</td>
<td>Institute for Research in Science Teaching <em>(pg. 35)</em></td>
<td>Dr. Michael Jabot <a href="mailto:jabot@fredonia.edu">jabot@fredonia.edu</a> (716) 673-3639</td>
<td><a href="http://www.globe.gov/web/institute-for-research-in-science-teaching">www.globe.gov/web/institute-for-research-in-science-teaching</a></td>
</tr>
<tr>
<td></td>
<td>Queens College</td>
<td>Dr. Allan Ludman <a href="mailto:Allan.ludman@qc.cuny.edu">Allan.ludman@qc.cuny.edu</a> (718) 997-3324</td>
<td><a href="http://www.globe.gov/web/queens-college">www.globe.gov/web/queens-college</a></td>
</tr>
<tr>
<td>NORTHERN CAROLINA</td>
<td>Center for Marine Sciences and Technology</td>
<td>Dr. Patrick Curley <a href="mailto:pwcurley@ncsu.edu">pwcurley@ncsu.edu</a> (252) 222-6376</td>
<td><a href="http://www.globe.gov/web/center-for-marine-sciences-and-technology">www.globe.gov/web/center-for-marine-sciences-and-technology</a></td>
</tr>
<tr>
<td></td>
<td>Elizabeth City State University</td>
<td>Dr. Linda Hayden <a href="mailto:lbhayden@ecsu.edu">lbhayden@ecsu.edu</a></td>
<td><a href="http://www.globe.gov/web/elizabeth-city-state-university2">www.globe.gov/web/elizabeth-city-state-university2</a></td>
</tr>
<tr>
<td></td>
<td>Southwestern Community College</td>
<td>Matthew Cass <a href="mailto:mcass@southwesterncc.edu">mcass@southwesterncc.edu</a></td>
<td><a href="http://www.globe.gov/web/southwestern-community-college-partner">www.globe.gov/web/southwestern-community-college-partner</a></td>
</tr>
<tr>
<td></td>
<td>University of North Carolina at Charlotte</td>
<td>Alisa Wickliff <a href="mailto:abwickl@uncc.edu">abwickl@uncc.edu</a> (704) 687-8818</td>
<td><a href="http://www.globe.gov/web/university-of-north-carolina-at-charlotte">www.globe.gov/web/university-of-north-carolina-at-charlotte</a></td>
</tr>
<tr>
<td>NORTHERN DAKOTA</td>
<td>University of North Dakota</td>
<td>Dr. Matt Gilmore <a href="mailto:gilmore@atmos.und.edu">gilmore@atmos.und.edu</a> (701) 777-2184</td>
<td><a href="http://www.globe.gov/web/university-of-north-dakota">www.globe.gov/web/university-of-north-dakota</a></td>
</tr>
<tr>
<td>OHIO</td>
<td>Xcite Learning/BGSU-NWO/Toledo Zoo &amp; Aquarium <em>(pg. 36)</em></td>
<td>Dr. Jodi J. Haney <a href="mailto:jhaney@bgsu.edu">jhaney@bgsu.edu</a> (419) 350-8469</td>
<td><a href="http://www.globe.gov/web/bowing-green-state-university">www.globe.gov/web/bowing-green-state-university</a></td>
</tr>
<tr>
<td></td>
<td>NASA AESP Glenn Research Center</td>
<td>Susan Kohler <a href="mailto:Susan.m.kohler@nasa.gov">Susan.m.kohler@nasa.gov</a> (216) 433-5104</td>
<td><a href="http://www.globe.gov/web/nasa-aesp-glenn-research-center-ms-7-4">www.globe.gov/web/nasa-aesp-glenn-research-center-ms-7-4</a></td>
</tr>
<tr>
<td></td>
<td>The Nuhop Center for Experiential Learning</td>
<td>Susan James <a href="mailto:susan@nuhop.org">susan@nuhop.org</a> (419) 560-2567</td>
<td><a href="http://www.globe.gov/web/the-nuhop-center-for-experiential-learning">www.globe.gov/web/the-nuhop-center-for-experiential-learning</a></td>
</tr>
<tr>
<td></td>
<td>University of Toledo <em>(pg. 37)</em></td>
<td>Dr. Kevin Czajkowski <a href="mailto:kevin.czajkowski@utoledo.edu">kevin.czajkowski@utoledo.edu</a> (419) 530-4274</td>
<td><a href="http://www.globe.gov/web/university-of-toledo">www.globe.gov/web/university-of-toledo</a></td>
</tr>
</tbody>
</table>
## United States GLOBE Partnerships continued

<table>
<thead>
<tr>
<th>STATE/TERRITORY</th>
<th>PARTNERSHIP</th>
<th>CONTACT</th>
<th>PARTNER WEBPAGE</th>
</tr>
</thead>
</table>
| OKLAHOMA       | Southeastern Oklahoma State University | Margaret Avard mavard@se.edu  
(580) 745-2664 | www.globe.gov/web/southeastern-oklahoma-state-university |
|                | Southeastern Oklahoma State University-McCurtain County Campus | Dr. Cathy Stewart Lightsey clightsey@se.edu  
(580) 376-5209 | www.globe.gov/web/southeastern-oklahoma-state-university-mccurtain-county-campus |
|                | University of Tulsa | Dr. David Brown  
David-brown@utulsa.edu  
(918) 631-2719 | www.globe.gov/web/the-university-of-tulsa |
| OREGON         | Alder Creek Community Forest | Devin Hunt  
Devin.Hunt@susd.k12.or.us | www.globe.gov/web/alder-creek-community-forest-partnership |
|                | College of Earth, Ocean, Atmospheric Sciences (CEOAS) | Peder Nelson  
peder.nelson@oregonstato.edu  
(541) 737-8052 | www.globe.gov/web/college-of-earth-ocean-atmospheric-sciences-ceoas- |
|                | Lane Community College | Dr. Paul Ruscher  
ruscherp@lanecc.edu  
(541) 463-5446 | www.globe.gov/web/lane-community-college-partnership |
|                | Watershed Action Team (WAT) | Sidney Post  
watprofh2o@juno.com  
(541) 464-3361 | www.globe.gov/web/watershed-action-team-or |
| PENNSYLVANIA   | Advancing Science, Gettysburg College | Valerie Stone  
advancingscience@gettysburg.edu  
(717) 337-6150 | www.globe.gov/web/advancing-science-gettysburg-college |
|                | Berks Nature - The Nature Place (pg. 38) | Michael Griffith  
michael.griffith@berksnature.org  
|                | Immaculata University | Dr. Carl Pratt  
cpratt@immaculata.edu  
(610) 647-4400 | www.globe.gov/web/immaculata-university-globe-partner |
|                | Legacy Bridges STEM Academy, Inc. | Joi Spraggins  
drjoi@legacybridges.academy  
|                | SciStarter Science for Citizens, LLC | Hined Rafeh  
hined@scistarter.com  
(856) 366-9644 | www.globe.gov/web/scistarter-science-for-citizens-llc |
<table>
<thead>
<tr>
<th>STATE/TERRITORY</th>
<th>PARTNERSHIP</th>
<th>CONTACT</th>
<th>PARTNER WEBPAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUERTO RICO</td>
<td>University of Puerto Rico, Mayaguez Campus <em>(pg. 39)</em></td>
<td>Dr. Juan Lopez Garriga <a href="mailto:lopezj@uprm.edu">lopezj@uprm.edu</a> (787) 265-5453</td>
<td><a href="http://www.globe.gov/web/university-of-puerto-rico-mayaguez-campus">www.globe.gov/web/university-of-puerto-rico-mayaguez-campus</a></td>
</tr>
<tr>
<td></td>
<td>Clemson University</td>
<td>Dr. Cynthia Minchew Deaton <a href="mailto:cdeaton@clemson.edu">cdeaton@clemson.edu</a> (864) 656-5115</td>
<td><a href="http://www.globe.gov/web/clemson-university">www.globe.gov/web/clemson-university</a></td>
</tr>
<tr>
<td></td>
<td>Hilton Pond Center for Piedmont Natural History</td>
<td>Bill Hilton Jr. <a href="mailto:hilton@rubythroat.org">hilton@rubythroat.org</a> (803) 684-5852</td>
<td><a href="http://www.globe.gov/web/hilton-pond-center-for-piedmont-natural-history">www.globe.gov/web/hilton-pond-center-for-piedmont-natural-history</a></td>
</tr>
<tr>
<td>SOUTH DAKOTA</td>
<td>South Dakota Discovery Center <em>(pg. 40)</em></td>
<td>Anne Lewis <a href="mailto:annelewis@sd-discovery.org">annelewis@sd-discovery.org</a></td>
<td><a href="http://www.globe.gov/web/south-dakota-discovery-center1">www.globe.gov/web/south-dakota-discovery-center1</a></td>
</tr>
<tr>
<td>TennesSEE</td>
<td>Middle Tennessee State University</td>
<td>Dr. Kim Cleary Sadler <a href="mailto:kimsadler@mtsu.edu">kimsadler@mtsu.edu</a> (615) 904-8283</td>
<td><a href="http://www.globe.gov/web/middle-tennessee-state-university">www.globe.gov/web/middle-tennessee-state-university</a></td>
</tr>
<tr>
<td></td>
<td>Tennessee Environmental Education Association</td>
<td>Ramona Nelson <a href="mailto:Ramona.nelson@mycalions.com">Ramona.nelson@mycalions.com</a> (731) 695-8888</td>
<td><a href="http://www.globe.gov/web/tennessee-environmental-education-association-partner">www.globe.gov/web/tennessee-environmental-education-association-partner</a></td>
</tr>
<tr>
<td></td>
<td>Tennessee State University</td>
<td>Dr. David Padgett <a href="mailto:dpadgett@tnstate.edu">dpadgett@tnstate.edu</a> (615) 963-5508</td>
<td><a href="http://www.globe.gov/web/tennessee-state-university">www.globe.gov/web/tennessee-state-university</a></td>
</tr>
<tr>
<td></td>
<td>University of Tennessee at Chattanooga <em>(pg. 41)</em></td>
<td>Dr. Deborah McAllister <a href="mailto:deborah-mcallister@utc.edu">deborah-mcallister@utc.edu</a> (423) 425-5376</td>
<td><a href="http://www.globe.gov/web/university-of-tennessee-at-chattanooga-partner">www.globe.gov/web/university-of-tennessee-at-chattanooga-partner</a></td>
</tr>
<tr>
<td>TEXAS</td>
<td>Ellison Miles Geotechnology Institute at Brookhaven College - TRC</td>
<td>Melanie Gamble <a href="mailto:mcamble@dccc.edu">mcamble@dccc.edu</a> (972) 860-4269</td>
<td><a href="http://www.globe.gov/web/ellison-miles-geotechnology-institute-at-brookhaven-college-trc">www.globe.gov/web/ellison-miles-geotechnology-institute-at-brookhaven-college-trc</a></td>
</tr>
<tr>
<td></td>
<td>El Paso Community College</td>
<td>John Gilbert Olgin <a href="mailto:jolgin@epcc.edu">jolgin@epcc.edu</a></td>
<td><a href="http://www.globe.gov/web/el-paso-community-college1">www.globe.gov/web/el-paso-community-college1</a></td>
</tr>
<tr>
<td></td>
<td>ESC Region 05 - Silsbee Conference Center - TRC</td>
<td>Roxanne Minix-Wilkins <a href="mailto:rminix-wilkins@esc5.net">rminix-wilkins@esc5.net</a> (409) 923-5445</td>
<td><a href="http://www.globe.gov/web/esc-region-05-silsbee-conference-center-trc">www.globe.gov/web/esc-region-05-silsbee-conference-center-trc</a></td>
</tr>
<tr>
<td>STATE/TERRITORY</td>
<td>PARTNERSHIP</td>
<td>CONTACT</td>
<td>PARTNER WEBPAGE</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------------------------------</td>
<td>--------------------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>TEXAS continued</td>
<td>ESC Region 18 - TRC</td>
<td>Martha Alexander <a href="mailto:malexander@esc18.net">malexander@esc18.net</a> (432) 567-3274</td>
<td><a href="http://www.globe.gov/web/esc-region-18-trc">www.globe.gov/web/esc-region-18-trc</a></td>
</tr>
<tr>
<td></td>
<td>Our Lady of the Lake University - TRC</td>
<td>Peggy Carnahan <a href="mailto:carnp@ollusa.edu">carnp@ollusa.edu</a> (210) 434-6711 x8215</td>
<td><a href="http://www.globe.gov/web/our-lady-of-the-lake-university-trc">www.globe.gov/web/our-lady-of-the-lake-university-trc</a></td>
</tr>
<tr>
<td></td>
<td>Texas Southern University</td>
<td>Dr. Obot Ekwere <a href="mailto:ekwereoj@tsu.edu">ekwereoj@tsu.edu</a></td>
<td><a href="http://www.globe.gov/web/texas-southern-university">www.globe.gov/web/texas-southern-university</a></td>
</tr>
<tr>
<td></td>
<td>Texas STEM Coalition (pg. 42)</td>
<td>Michael Odell <a href="mailto:modell@uttyler.edu">modell@uttyler.edu</a> (903) 566-7149</td>
<td><a href="http://www.globe.gov/web/texas-stem-coalition">www.globe.gov/web/texas-stem-coalition</a></td>
</tr>
<tr>
<td></td>
<td>Texas Tech University-CISER – TRC</td>
<td>Susan Talkmitt <a href="mailto:susan.talkmitt@ttu.edu">susan.talkmitt@ttu.edu</a> (806)742-1997</td>
<td><a href="http://www.globe.gov/web/texas-tech-university-ciser-trc">www.globe.gov/web/texas-tech-university-ciser-trc</a></td>
</tr>
<tr>
<td></td>
<td>The University of Texas at Tyler (pg. 43)</td>
<td>Teresa Kennedy <a href="mailto:tkennedy@uttyler.edu">tkennedy@uttyler.edu</a> (903) 566-7448</td>
<td><a href="http://www.globe.gov/web/the-university-of-texas-at-tyler">www.globe.gov/web/the-university-of-texas-at-tyler</a></td>
</tr>
<tr>
<td></td>
<td>University of Texas at Brownsville &amp; Texas Southmost College- TRC</td>
<td>Dr. Reynaldo Ramirez Jr. <a href="mailto:reynaldo.ramirez@utb.edu">reynaldo.ramirez@utb.edu</a> (956) 882-7255</td>
<td><a href="http://www.globe.gov/web/18196">www.globe.gov/web/18196</a></td>
</tr>
<tr>
<td></td>
<td>University of Texas Medical Branch - Educational Outreach - TRC</td>
<td>Marguerite Sognier <a href="mailto:masognie@utmb.edu">masognie@utmb.edu</a> (832) 216-0001</td>
<td><a href="http://www.globe.gov/web/university-of-texas-medical-branch-educational-outreach-trc">www.globe.gov/web/university-of-texas-medical-branch-educational-outreach-trc</a></td>
</tr>
<tr>
<td>VERMONT</td>
<td>Shelburne Farms</td>
<td>Joan Haley <a href="mailto:jhaley@shelburnefarms.org">jhaley@shelburnefarms.org</a></td>
<td><a href="http://www.globe.gov/web/shelburne-farms-partner">www.globe.gov/web/shelburne-farms-partner</a></td>
</tr>
<tr>
<td>STATE/TERRITORY</td>
<td>PARTNERSHIP</td>
<td>CONTACT</td>
<td>PARTNER WEBPAGE</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>VIRGINIA</td>
<td>Hampton University</td>
<td>Dianne Q. Robinson</td>
<td><a href="http://www.globe.gov/web/hampton-university">www.globe.gov/web/hampton-university</a></td>
</tr>
<tr>
<td></td>
<td>Institute for Global Environmental Strategies (IGES)</td>
<td>Cassie Soeffing</td>
<td><a href="http://www.globe.gov/web/institute-for-global-environmental-strategies-iges-">www.globe.gov/web/institute-for-global-environmental-strategies-iges-</a></td>
</tr>
<tr>
<td></td>
<td>NASA Langley Research Center (pg. 44)</td>
<td>Jessica Taylor</td>
<td><a href="http://www.globe.gov/web/nasa-langley-research-center">www.globe.gov/web/nasa-langley-research-center</a></td>
</tr>
<tr>
<td></td>
<td>Virginia Museum of Natural History</td>
<td>Dr. Dennis Casey</td>
<td><a href="http://www.globe.gov/web/virginia-museum-of-natural-history">www.globe.gov/web/virginia-museum-of-natural-history</a></td>
</tr>
<tr>
<td></td>
<td>Virginia State University</td>
<td>Shobha Sriharan</td>
<td><a href="http://www.globe.gov/web/virginia-state-university">www.globe.gov/web/virginia-state-university</a></td>
</tr>
<tr>
<td></td>
<td>Wetlands Estonia Learning Center - Castlewood High School</td>
<td>Teresa (Terry) Vencil</td>
<td><a href="http://www.globe.gov/web/18594">www.globe.gov/web/18594</a></td>
</tr>
<tr>
<td>VIRGIN ISLANDS</td>
<td>St. Croix Foundation/ Virgin Islands Department of Labor</td>
<td>Dr. Michelle D. Peterson</td>
<td><a href="http://www.globe.gov/web/15893">www.globe.gov/web/15893</a></td>
</tr>
<tr>
<td>WASHINGTON</td>
<td>University of Washington Bothell</td>
<td>Blakely Tsurusaki</td>
<td><a href="http://www.globe.gov/web/university-of-washington-bothell-partner">www.globe.gov/web/university-of-washington-bothell-partner</a></td>
</tr>
<tr>
<td>WISCONSIN</td>
<td>University of Wisconsin-Madison (pg. 45)</td>
<td>Rosalyn A. Pertzborn</td>
<td><a href="http://www.globe.gov/web/space-science-and-engineering-center">www.globe.gov/web/space-science-and-engineering-center</a></td>
</tr>
<tr>
<td>AT LARGE</td>
<td>National Wildlife Federation - Eco-Schools USA</td>
<td>Jennifer Hammonds</td>
<td><a href="http://www.globe.gov/web/nwf">www.globe.gov/web/nwf</a></td>
</tr>
</tbody>
</table>
GLOBE 2021 NEWS SUMMARY

These news articles were posted on the GLOBE website in 2021. The full stories are available from the linked titles.

EDUCATION: STUDENT RESEARCH

Four Films Share SRS Experience Through the Eyes of Students. The GLOBE U.S. Coordination Office released four short films documenting what it’s like to attend a Student Research Symposium (SRS). Created with teacher and student audiences in mind, the films reveal the SRS experience through the eyes, and words, of students and teachers.

2021 GLOBE+ Virtual Student Symposium. The WestEd/UC Berkeley partnership teamed up with the California Strong Earth System Science collaborators to prepare for and host the 2021 GLOBE+ Virtual Student Symposium. The two-day event took place on 30 April and 1 May. GLOBE partners from Purdue University and SUNY Fredonia joined the event, bringing student teams focused on coding and engineering projects.

NH Elementary Students Explore the Ground Beneath Their Feet with the Soil Tent Program. Students from Moharimet Elementary School, Madbury, and Mast Way Elementary School, Lee, both in New Hampshire, got outside in fall 2021 to explore soils with the Soil Tent program. The Soil Tent is a traveling STEAM educational exhibit that combines hands-on GLOBE science activities centered around the pedosphere and a 10-by-10 pop-up tent with murals depicting students’ observations of their local soil ecosystems. The tent was developed by the New Hampshire GLOBE program, the USDA Forest Service, and the Northern Arts Alliance.

COMMUNITY PARTNERSHIPS

Over 30 GLOBE-related projects presented at the 2020 AGU Fall Meeting. More than a hundred authors representing 30-plus GLOBE-related projects presented at the 2020 AGU Fall meeting, held virtually in December. Authors included partners, community members, NASA and GIO, and GLOBE students (as part of the Bright Stars program).

A3Sat: To Observe the Earth and Visualize the Future. GLOBE partner John Moore described a new project that connects GLOBE protocols with remotely sensed data using the three tasks used by remote sensing scientists: acquire, analyze, and apply. The A3Sat Project introduces pre-college students to the importance and applications of the geosciences, engineering, and technology generally not found in K-12 classrooms. The project offers innovative, transformative experiences that develop proficiencies and explore STEM career pathways.
COMMUNITY PARTNERSHIPS continued

**NASA Goddard Trains Teachers to Use Coding Kits and Drones to Collect Atmospheric Data.** In the summer of 2020, Todd Toth from NASA Goddard worked with teachers in the Keystone STEM Education Alliance to learn how to code, fly, and gather atmospheric data using coding kits and a drone. The teachers also learned about the GLOBE program protocol and apps, how to analyze their atmospheric data, and send their data to GLOBE.

**Contemplate, Investigate, Communicate.** Heather Tabisola, a member of the GLOBE community since her high school years, has spent her life in and around the oceans of the world studying and observing marine life, but her current position—Research Coordinator at the Cooperative Institute for Climate, Ocean, and Ecosystem Studies at the University of Washington—makes perfect use of her skill in telling stories about scientists and their work to the people who want, and often need, to hear them. “I am a connector,” said Heather.

**South Dakota Discovery Center Uses Land Cover Protocol to Build Watershed Resilience.** The South Dakota Discovery Center used the GLOBE Observer Land Cover protocol as part of its watershed information and outreach efforts. The project collects information on shorelines and riparian areas that will help watershed managers understand the hydrology over time.

**NASA Goddard and Legacy Bridges STEM Academy, Inc. Team Up to Develop Pre-College to College STEM Pipeline.** The NASA Goddard GLOBE Partnership worked with Dr. Joi C. Spraggins, CEO of Legacy Bridges STEM Academy, Inc., to develop a Pennsylvania-based East Coast pre-college to college STEM pipeline and workforce, to meet the demands of the 21st century economy.

**Salish Kootenai College Uses GLOBE Data to Answer Questions About Place.** Dr. Wren Walker Robbins, of Mohawk descent, is part of the GLOBE partnership at Salish Kootenai College, located on the Flathead Reservation in Northwest Montana. As the chair of the department of secondary education, Dr. Walker Robbins helps lead the initiative for pervasive integration of language, culture, identity, and place into STEM instruction for an indigenous approach to STEM education.

**GLOBE Has Been a Continuing Tradition for 26 Years at Kingsburg High School.** Kingsburg High School in California is a model of how GLOBE can be a sustainable program that benefits both teachers and students. The school has been with GLOBE since the program began in 1995. Started by now-mentor trainer Peggy Foletta, the Kingsburg environmental science program gives students practice in GLOBE protocols and entering GLOBE data. Now, the GLOBE program at Kingsburg is headed by science teacher Leigh-Ann Olsen.
COMMUNITY PARTNERSHIPS continued

**MULTI STEM Institute Update.** From 2017-2019, the Metropolitan State University—Denver GLOBE Partnership hosted NSF-sponsored MULTI STEM Summer Institutes on the Auraria Campus in downtown Denver. These three to four-day events brought together Colorado teachers, scientists, and GLOBE partners from around the country. In June 2021, the team led a scaled-back institute with about fifteen participants at the Rocky Mountain Arsenal National Wildlife Refuge near Denver.

**Infinity Science Center Uses GLOBE to Engage Teachers and Students in Meaningful Watershed Educational Experiences.** The Infinity Science GLOBE Partnership completed its NOAA B-WET project entitled The ISC Watershed Education & Environmental Impact Program. The INFINITY Science Center received funding to facilitate a teacher and student multi-disciplinary, first-hand community environmental stewardship project centered around data collection and research about watersheds, scientific data collection, research procedures using the scientific method, and presentations to decision makers for community impact.

SCIENCE: CITIZEN SCIENCE

**Putting Citizen Science into Practice with CoCoRaHS.** Founded in 1998, CoCoRaHS (Community Collaborative Rain, Hail, and Snow Network) has been promoting citizen science nearly as long as GLOBE. The rain gauge and protocols used by the two programs are virtually identical, so those familiar with the GLOBE precipitation protocol can easily become a volunteer to submit data for CoCoRaHS.

**Move Ideas into Practice with the NASA Citizen Science Event Series.** 2020’s NASA Summer of Citizen Science event series, the online manifestation of the second annual NASA Citizen Science Community Workshop, hosted a conversation about important issues facing citizen science practice today. The series continued in 2021 with shorter sequences of events around themes.

**GLOBE Partners Elevate Citizen Science at CitSciVirtual and NASA CitSciCon.** In the spring of 2021, thirteen presentations were given by GLOBE partners at the CitSciVirtual conference and the NASA CitSciCon. The list of presentations and links to the conferences can be found at the link.
GLOBE Schools in Texas Plan Campus Nature Walk for Earth Day. Since 2000, Northside ISD in San Antonio, Texas, has used GLOBE as the structure for its environmental education goals. ACORN (Area Children Organized to Replant Natives) is the district’s designation for the flexible applications of environmental observation and measurement, planting projects, birding activities, educational gardens, bicycle clubs, and habitat restoration.

Campers will Collaborate, Connect, and Collect Data in “GLOBE Goes to Camp” Pilot. Members of the NASA Langley GLOBE Partnership made plans for spending the summer working with twelve summer camps in the “GLOBE Goes to Camp” pilot. Campers connected with NASA scientists as they took on the role of a citizen scientist collecting local environmental data.

GLOBE and the Natural Inquirer Crosswalk Project. The GLOBE U.S. Coordination Office is working with the USDA Forest Service to develop educational products highlighting connections between Natural Inquirer issues and GLOBE program protocols and activities. The project seeks in-service and pre-service teachers familiar with either program to highlight the connections between Natural Inquirer and GLOBE in a blog or social media post.

Allometry ... Not - a Llama Tree, Get it?. GLOBE Carbon Cycle project contributor Sarah Sallade describes the process of developing materials for the project. The goal was to create a more complete set of resources for teachers and students to understand the global carbon cycle with a focus on being able to assess carbon storage through direct measurements in their own environment.
The partnership supports schools, teams, and projects financially, providing GLOBE supplies or equipment needed and travel support as needed for in person-training or professional development. We also provide follow-up sessions for Meet-the Scientist, matching expertise with the subject matter focus/interest of the projects and the students, as well as Data Discovery sessions to help students make sense of the data.

The UAF GLOBE Partnership conducted nearly a dozen training workshops and courses for local and international audiences on topics such as Climate Change in My Community, culturally responsive curriculum and inquiry, frost tube usage, snow and land cover, air temperature and clouds, and the presence of GLOBE in Indigenous communities.

More activities and news stories are described at [https://www.globe.gov/web/university-of-alaska-fairbanks/home/activities](https://www.globe.gov/web/university-of-alaska-fairbanks/home/activities).

**Funding:** NASA Cooperative Agreement Award NNX16AC52A, Bonanza Creek Long Term Ecological Research Project NSF DEB -1636476, Winterberry Project NSF Award 1713156, Fresh Eyes on Ice National Science Foundation Award 1836523 and NASA Cooperative Agreement Award 180NSSC21K0858

**Areas of Expertise:** In-service professional development, programming for students, Elementary GLOBE, pre-service teachers, GLOBE in undergraduate classrooms, engineering, education research, science research, citizen science, informal science, culturally responsive climate change education

**Cooperating Organizations:** University of Alaska Fairbanks (UAF); Association of Interior Native Educators; Organizations at UAF: International Arctic Research Center, Bonanza Creek Long Term Ecological Research Project, College of Natural Science and Mathematics, Institute of Agriculture, Natural Resources and Extension, School of Education, Alaska Climate Research, Water and Environmental Research Center; 4-H - Alaska and Florida; Boys and Girls Club of Metlakatla; Renewable Energy Alaska Project; University of Montana School of Public and Community Health Sciences

**Publications:** [globe.gov/web/university-of-alaska-fairbanks/home/publications](https://globe.gov/web/university-of-alaska-fairbanks/home/publications)

**Coordinator**

Elena Sparrow  
ebsparrow@alaska.edu  
(907) 474-7699

**Team Members**

Christina Buffington  
cbuffington@alaska.edu  
(907) 474-2794

Katie Villano Spellman  
klspellman@alaska.edu  
(907) 474-1554
The Arkansas GLOBE Partnership at the University of Arkansas, Fayetteville through the STEM Center for Math and Science Education has been continuously active since its creation in 1996. The past two years of COVID have made face-to-face interaction with formal and informal educators nearly impossible. However, Zoom has created a mechanism to reach the community and promote and support citizen science. The GLOBE Observer has been a very useful tool for enhancing interest in data collection. GLOBE Mentor Trainer Lynne Hehr has been active in the Education Working Group as member and 2021 Vice Chair. GLOBE Trainer John Hehr has continued to be active with atmosphere presentations to the Northwest Arkansas Master Naturalists chapter, a group of over 400 members.

The Arkansas GLOBE Partnership plans to continue its community outreach efforts through citizen science with lifelong learners and the K-5 education community (school team support, educator workshops, equipment and material loans, and teacher mentoring) as it works with GLOBE U.S. and international partners.

**Areas of Expertise:** In-service professional development, programming for students, Elementary GLOBE, pre-service teachers, engineering, education research, science research, citizen science, informal science

**Presentations:**
- 2021 GLOBE International Annual Meeting
  K-4 GLOBE materials and resources
  Education Working Group 2021
- 2021-2022 GLOBE AMSTI Science Specialist Training, GLOBE Team Member
- Northwest Arkansas Master Naturalists in Training, Soils Presentation
- Northwest Arkansas Master Naturalists in Training, Climate Presentation
- Arkansas Environmental Education Association, Citizen Science, GLOBE Presentation
- Osher Lifelong Learning Institute, Citizen Science, GLOBE Presentation
CALIFORNIA ACADEMY OF SCIENCES/
SCIENCE ACTION CLUB

www.calacademy.org/sac

Designed for students in grades 5–8, Science Action Club (SAC) is a global out-of-school time program that inspires youth to explore and connect with nature while achieving essential science, technology, engineering, and math (STEM) learning goals. Through dynamic curricula that integrate high-energy games and hands-on activities with citizen science investigations, the program ignites curiosity, fosters workforce development skills, and builds STEM identity among the next generation of environmental stewards, in-person or virtually.

SAC’s Cloud Quest unit explores the impact of clouds on weather and climate. Through games and projects, youth investigate local sky conditions, document their discoveries with GLOBE Observer, explore environmental issues, and design strategies to protect our planet. More than 74,000 children and educators have participated since 2011.

SAC features staff training and science kits that make it easy for out-of-school educators to lead science experiences with confidence and skill. Each kit includes twelve activities and bonus resources; science tools and supplies; interactive, self-paced online training for program staff members; and options for customized training.

**Funding:** Pisces Foundation, Simons Foundation, Overdeck Foundation

**Areas of Expertise:** In-service professional development, programming for students, citizen science, informal science

**Cooperating Organization:** California School-Age Consortium

---

**Coordinator**
Rachael Van Schoik
rvanschoik@calacademy.org
(415) 379-5105

---

**Team Member**
Olivia Vandamme
ovandamme@calacademy.org
(415) 379-5274
The Central San Joaquin Valley GLOBE Partnership has been involved with GLOBE since the onset in 1995. Originally begun by Peggy Foletta, this partnership made great strides in facilitating training events and numerous data collections over the years. Several students have come through Kingsburg High School and many other schools in this partnership to do citizen science and move onto research and data collection in their higher education and careers.

Currently, Leigh-Ann Olsen, former GLOBE student of Peggy Foletta, is the GLOBE partner for this partnership. She is a science teacher at Kingsburg High School and would like to encourage other schools in the Central Valley to contact her if they are interested in a training or learning more about the program.

Coordinator
Leigh-Ann Olsen
Biology/AP Science Teacher
(559) 897-5156
lolsen@kingsburghigh.com

Training Point-of-Contact
Peggy Foletta
GLOBE Master Trainer
(559) 970-9467
peggyfoletta@gmail.com
Our programs continued to shift due to COVID in 2021. In January and September 2021, we offered professional learning opportunities for educators with easy-to-use GLOBE support tools and activities for their students. Support staff started visiting classrooms again in the fall. We continued to work with schools to incorporate local subject matter experts into classrooms virtually. Student toolkits that were assembled the previous summer were distributed to GLOBE Mission Earth classrooms in the fall for data collection.

In the summer of 2021, eleven rising seniors were selected as interns and given an opportunity to experience geoscience learning through the GLOBE Youth Geoscientists (GYG) Internship Program with partners from the Lawrence Hall of Science. This hybrid internship was held at UC Berkeley Botanical Gardens and culminated in four intern team presentations on their geoscience research at the botanical gardens. During the summer, WestEd/UCB staff partnered with Strategic Energy Innovations (SEI) to offer hydrology training to their participants for their watershed workshops, a part of a B-WET Grant from the local NOAA office.

The partnership took the lead in the California Strong Earth System Science Collaborative. This collaborative was formed with NASA JPL, San Francisco Bay National Estuarine Research Reserve, Elkhorn Slough National Estuarine Research Reserve and Los Angeles Unified School District Office of Outdoor Environmental Education. The collaborative’s vision is “to inspire and create knowledgeable and dedicated youth who take action and inspire others to be environmental stewards locally and globally.”

Funding: GLOBE Mission EARTH is funded by NASA Cooperative Agreement Notice (CAN) NNX16AC54A. The ECLIPSE Project is funded through the National Science Foundation grant #1713456. GLOBE Youth Geoscientists is funded by an NSF grant 2023038.

Areas of Expertise: Professional development/GLOBE training, STEM career development, educational research, data storytelling

Cooperating Organizations: University of Toledo, Boston University, Tennessee State University, Lawrence Hall of Science, Earth Team, Strategic Energy Innovations

Presentations:

- Bourgeault, J, Ostrom, T. (2021, April) AMSTI Alabama Training Workshop

News Stories: Science from the Rooftops; GME-West Partners with SEI; GYG Completes Internship; G+VSS

<table>
<thead>
<tr>
<th>Coordinators</th>
<th>Team Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracy Ostrom, UC Berkeley <a href="mailto:tostrom@berkeley.edu">tostrom@berkeley.edu</a> (510) 219-0538</td>
<td>Jon Boxerman <a href="mailto:jboxerman@wested.org">jboxerman@wested.org</a> (510) 302-4308</td>
</tr>
<tr>
<td>Svetlana Darche, WestEd <a href="mailto:sdarche@wested.org">sdarche@wested.org</a> (415) 203-4181</td>
<td>Matt Silbergliit <a href="mailto:msilberg@wested.org">msilberg@wested.org</a> (510) 302-4262</td>
</tr>
<tr>
<td>Burr Tyler <a href="mailto:btyler@wested.org">btyler@wested.org</a> (510) 684-6406</td>
<td>Robin Montoya <a href="mailto:montoy@wested.org">montoy@wested.org</a> (650) 544-3623</td>
</tr>
<tr>
<td>Melissa Rego <a href="mailto:mrego@wested.org">mrego@wested.org</a></td>
<td></td>
</tr>
</tbody>
</table>

[www.globe.gov/web/wested-and-uc-berkeley]
The Cooperative Institute for Research in Environmental Sciences (CIRES) is a NOAA Cooperative Institute at the University of Colorado Boulder. CIRES scientists conduct a wide range of Earth System Science (ESS) research.

CIRES Education & Outreach develops relationships between our scientists and the communities we serve. As a GLOBE partner, we provide outreach and engagement opportunities for formal and informal educators. GLOBE protocols are built into many of our projects, curricula, and professional development workshops. We are a member of the Colorado-based GLOBE ESS Collaborative, a team of regional GLOBE partners to promote and support the use of GLOBE in and out of the classroom.


Contacts
Anne Gold
anne.u.gold@colorado.edu

Jonathan Griffith
jonathan.griffith@colorado.edu
UCAR CENTER FOR SCIENCE EDUCATION

scied.ucar.edu/about; http://globeweathercurriculum.org

Updates:
- Becca Hatheway and Lisa Gardiner presented at the 2021 GLOBE Virtual Meeting
- We hosted three webinars for GLOBE/Earth System Science Collaborative Teams project

Funding: NASA/NSF

Areas of Expertise: Informal science, Programming for students, citizen science, educational resource development, GLOBE Weather professional development

Cooperating Organizations: Colorado ESS/GLOBE Collaborative: University of Colorado, Boulder CIRES, University of Colorado Fiske Planetarium, Colorado State University Natural Sciences Education & Outreach Center, College of Natural Sciences, Metropolitan State University, CoCoRaHS, St. Vrain Valley Schools

Publications: globe.gov/web/ucar-center-for-science-education/home/publications
Elementary GLOBE, GLOBE Weather, GLOBE Data Explorations


Coordinator
John Ristvey
jristvey@ucar.edu
(303) 497-2591

Team Members
Becca Hatheway
hatheway@ucar.edu

Emily Snod-Brenneman
emilysb@ucar.edu

Tim Barnes
tbarnes@ucar.edu

Melissa Rummel
mrummel@ucar.edu

Lisa Gardiner
lisagard@ucar.edu

Deanna TeBockhorst
tinydeanna@gmail.com
NASA GODDARD SPACE FLIGHT CENTER
globe.gov/web/nasa-goddard-space-flight-center/home

The Goddard GLOBE Partnership provides resources to schools and teachers in our eleven-state region. We offer program support to integrate GLOBE into school curricula, webinars to provide additional training, answers to specific problems via telecons and telephone calls, and, if possible, face-to-face in-school support. We offer an equipment loan program for new GLOBE schools and students preparing for a Student Research Symposia (SRS). NASA’s Goddard Space Flight Center in Greenbelt, Maryland, is home to the nation’s largest organization of scientists, engineers, and technologists who build spacecraft, instruments, and new technology to study the Earth, the sun, our solar system, and the universe.

2021 was again a challenging but busy year for our partnership with a wide variety of GLOBE events. The NASA Goddard GLOBE Partnership held local, regional, and international virtual training events throughout the year. The Maryland Association of Environmental & Outdoor Education virtual conference led us off to a good start. Additional training events occurred in Pennsylvania, Maryland, Virginia, New York, Washington D.C., and the new GLOBE country of Bhutan, which rounded out some fun and interesting GLOBE events. Our partnership is also involved in pilot testing new and innovative student built atmospheric sensors that one day may be used in GLOBE.

Funding: NASA

Areas of Expertise: In-service professional development, programming for students, Elementary GLOBE, pre-service teacher training, GLOBE in undergraduate classrooms, education research, science research, citizen science, informal science, individualized GLOBE training and implementation

Cooperating Organizations: NASA, NOAA, U.S. Department of State, National Wildlife Federation
The GLOBE partnership at Boston University’s Wheelock College of Education and Human Development promotes GLOBE activities to support science education in Massachusetts and Rhode Island.

BU GLOBE Mission Earth is a member of the GLOBE Mission Earth consortium supported by NASA Science Activation 2.0. We work with teachers in grades K-12 to engage their students in GLOBE outdoor investigations of their environment and in the use of GLOBE and NASA online data resources.

Each summer we offer a one-week GLOBE workshop for teachers to introduce teachers to GLOBE and for veterans to share their GLOBE practices, including which NGSS standards are supported by which activity, with new and veteran teachers. During the school year we provide quarterly professional development sessions focused on students’ research projects and support of teachers’ implementation of GLOBE activities.

The BU GLOBE Partnership invites individual teachers, youth serving organizations, or school districts to contact us. We can offer GLOBE training and support year-round, as well as integration into our current network of GLOBE schools and teachers.

Coordinator
Dr. Peter Garik
garik@bu.edu
(617) 353-4735

Team Members
Dr. Don DeRosa
donder@bu.edu
(617) 353-4052

Dr. Bruce Anderson
brucea@bu.edu
(617) 353-4807

Dr. Caleb Farny
farny@bu.edu
(419) 530-4120

Kathleen Johnson
kjohns12@bu.edu
(509) 846-5544
2021 was challenging for all students, families, and teachers but we have supported each other and kept going strong. The Center devoted its efforts to providing support and maintaining relationships with our partnership schools. We continued recruiting new schools despite this difficult time, making new connections, and presenting virtually to school committees, superintendents, and school principals:

- Massachusetts Association of Schools Superintendent (GS21 Committee)
- Massachusetts Association for Vocational Schools Administrators (“Connecting for Success”)
- BPA Massachusetts Student Association
- Instituto Neil Armstrong, San Nicolas de los Garza, Mexico, lead teacher Raziel Cázares
- Finham Park Two, Coventry, United Kingdom, headteacher Russell Plester

We continued developing an online teacher professional development resource on team-work skills based on 4D Systems and “How NASA Build Teams,” intercultural communication, environmental science diplomacy, and online teaching and learning. We hope to finalize this resource in 2022-2023 and share our experience with the GLOBE team. As part of our continued commitment to equitable high-quality education, diversity, and inclusion, we reached out to the vocational high schools and senior centers in Massachusetts, which are underrepresented in some national STEM initiatives. We increased our participation in the GLOBE virtual Watercoolers and participated in all GLOBE virtual meetings for the U.S. GLOBE Partners.

GLOBE protocols used included atmosphere (air temperature, precipitation, clouds and contrails, relative humidity, surface temperature) and biosphere (biometry, trees).

As a small 501(c)(3) nonprofit, we are committed to equity, STEM careers, global citizenship, diversity and inclusion, and assisting schools beyond the greater Boston area with underserved and underrepresented groups.

**Areas of Expertise:** In-service teacher professional development, informal science, citizen science, programming for students, after school programs

**Coordinators (GLOBE GSN, GLOBE SRS, GLOBE IVSS)**

Larisa Schelkin  
Larisa.schelkin@globalstemcenter.org  
(774) 388-7089

Donna Sroka  
donnasroka@outlook.com  
(413) 539-0306
U.S. GLOBE WATERCOOLERS

The U.S. GLOBE Watercoolers, virtual learning and networking opportunities for GLOBE teachers and partners, continued throughout 2021. Seventeen Watercoolers were held in 2021 with presentations by U.S. GLOBE community members. More than 115 unique users attended the Watercoolers, which averaged 16 participants a week. A wide range of topics included: My NASA Data, the Teen Science Café Network, STEM Education resources, Landsat-based Landscape Change Monitoring System, and informal networking opportunities. All past Watercoolers can be viewed from the U.S. GLOBE Watercooler YouTube Playlist.

NORTH AMERICAN GLOBE INTERNATIONAL STEM NETWORK MENTORSHIP

The 2021 North American Student Research Symposia (SRS) was canceled due to the COVID-19 pandemic. Program and evaluation activities shifted focus to the mentorship provided by U.S. members of the GLOBE International STEM Network (GISN) North America region. GLOBE is increasing its efforts to provide demographically aware representations of STEM professionals so that underrepresented minority students can better envision themselves as future scientists.

North American GISN members volunteered for this mentorship program by filling out a survey about the types of interactions they would like to have with students and other (optional) details to better match them with students, including research areas, life experiences, and demographic data. Thirty-seven members responded to the survey.

A pilot program was launched in the fall of 2021 with a registration survey for educators seeking to be matched with GISN U.S. STEM professionals that collected information about grades and subjects taught, learner populations, educator demographics, and expectations of the mentoring program. All educators who responded to the registration survey were matched with one or more GISN mentors.

The U.S. GLOBE Coordination Office looks forward to continuing this mentorship program in the future. Bridging this program with the SRS would provide students with added support as they conduct and communicate their GLOBE research projects. It will also allow SRS evaluation activities to investigate how mentorship influences students’ science interest and self-efficacy and how this relates to SRS outcomes for those who attend.

FALL NORTH AMERICAN REGIONAL MEETING

The 2021 North American Regional Meeting (NARM) was held virtually from 12 to 14 October. This year, the theme of NARM was “Adapting to a Changing GLOBE,” a continuation of the theme from the 2021 GLOBE Annual Meeting. Partners, sponsors, Regional Coordination Offices (RCOs), and GIO staff registered for this event from across the United States and Canada, with a total of seventy-one participants. The NARM featured eight unique sessions, including working sessions on Partnership Onboarding and Affinity Groups.
In 2021, the partnership focused on pre-service teachers at GVSU. GLOBE protocols were integrated into two courses. AWRI’s vessel-based education and informal classroom programs continue to use GLOBE protocols. GLOBE phenology was addressed in an in-service teacher workshop. We are active in the GLOBE Midwest Collaborative.

**Funding:** AWRI

**Areas of Expertise:** In-service professional development, pre-service teachers, GLOBE in undergraduate classrooms, informal science

**Cooperating Organizations:** GVSU Annis Water Resources Institute (AWRI), GVSU Geology Department

**Coordinator**  
Janet Vail  
vailj@gvsu.edu  
(616) 331-3749

**Team Members**  
Amanda Syers  
syersam@gvsu.edu  
(616) 331-3749

Kelly Heid  
heidke@gvsu.edu  
(616) 331-3749
NORTHERN MICHIGAN UNIVERSITY

www.globe.gov/web/northern-michigan-university

Northern Michigan University (NMU) is a four-year public school in Marquette, Michigan. NMU is classified as a master’s College and University (medium programs) by Carnegie Classification and its highest level of offering is a doctoral degree.

Representatives attended the 2021 GLOBE Annual Meeting. Two faculty members, one from Northern Michigan University and another from an elementary school, led a summer professional development workshop to help K-12 teachers engage their students in researching atmosphere protocols (clouds, air temperature, relative humidity, and precipitation). The Midwest ESS Collaborative held a virtual poster presentation entitled “Engaging College Students in GLOBE Through University Courses” at the GLOBE Annual Meeting in Boulder.

Northern Michigan University also worked together for a summer training workshop using the terra-rovers to study urban heat islands. Participating teachers spent the week-long workshop conducting observations of temperature and practicing using rovers to collect data. Data were entered on the GLOBE website.

Areas of Expertise: In-service professional development (limited), Elementary GLOBE, pre-service teachers, GLOBE in undergraduate classrooms, STEM education research, educational technology.

Selected Publications and Presentations:

- Klett, M., (July 2020). Presenter, GLOBE B-WET: Great Lakes Student Research Campaign: Engaging Students and Teachers in Authentic Watershed Studies. GLOBE training. Marquette, MI

Coordinator
Mitchell Klett, PhD
mklett@nmu.edu
(906) 236-3032
The Leitzel Center New Hampshire GLOBE Partnership works to build a training team of GLOBE teachers and university scientists and graduate students. We work primarily with schools and teachers in New Hampshire, but training and support are available to schools in Vermont and Maine as well. Among key activities this year:

- The NH GLOBE Partnership is a part of a group of UNH researchers that received a $3.5 million award from the U.S. Department of Education to develop a multi-tiered program that will support New Hampshire middle and high schoolers in learning topics related to STEM (December).
- Elizabeth Burakowski set up a soil frost and snow depth data collection site at a local elementary school (November/December).
- Jennifer Bourgeault led a workshop titled “Environmental Data Collection & Data Literacy through the GLOBE Program” at the Christa McAuliffe Transforming, Teaching, & Technology Conference (November).
- Haley Wicklein, Jennifer Bourgeault, and UNH graduate students Joy O’Brien and Nate Blais brought the Soil Tent programming to local elementary schools (October/November). The Soil Tent is a joint project by the USDA Forest Service, NH GLOBE, and the Northern Arts Alliance.
- Haley presented as part of the GLOBE Exchange at the GLOBE North American Regional Meeting (October).
- The NH Partnership began work with the USDA Forest Service in expanding the work around the GLOBE Soil Tent to include a Water Tent (September).
- Haley and Jen Co-facilitated a virtual workshop on the GLOBE Carbon Cycle protocols and activities at the GLOBE Annual Meeting (July).

Areas of Expertise: In-service professional development, Elementary GLOBE, education research, citizen science.

Cooperating Organizations: New Hampshire Project Learning Tree, Project WILD (New Hampshire Fish and Game), Project WET (New Hampshire Department of Environmental Services), the USDA Forest Service, and University of New Hampshire Cooperative Extension, facebook.com/BringingNHEETtoEducators

Coordinator
Jennifer Bourgeault
jennifer.bourgeault@unh.edu
(603) 862-2449

Team Members
Haley Wicklein
haley.wicklein@unh.edu

Dr. Elizabeth Burakowski
elizabeth.burakowski@gmail.com
INSTITUTE FOR RESEARCH IN SCIENCE TEACHING

www.globe.gov/es/web/institute-for-research-in-science-teaching

The Institute’s focus has been the infusion of GLOBE into classrooms across our region through our ongoing partnerships, which grows from the use of GLOBE in our pre-service teacher education program and having the trained pre-service teachers serve as ambassadors of GLOBE in classrooms.

In 2021, we worked on building preservice teachers’ understanding of the role of GLOBE in developing content knowledge and their knowledge of how to engage young scientists in their classrooms. The content portion of this work has led to a highly enrolled Earth System Science course built around GLOBE and the UN Sustainable Development Goals. With Larisa Schelkin of the Global STEM Education Center, we offered two sessions for the UNITAR Science Diplomacy Program based on the tenets of this course.

The expansion of GLOBE Observer helped teachers address the New York State Science Learning Standards and gave students experience in science research in a way that scientists would. We expanded our Regional Climate Network, providing GLOBE schools with snow and frost-tube protocols. We continue to partner around our NOAA B-WET grants. We have expanded the scope of our 2019 NOAA B-WET grant studies water quality in the tributaries of Lake Erie and Lake Ontario. We continue to partner with GLOBE Mission Earth on a Great Lakes B-WET grant, expanding previous work by comparing sites around Lake Erie with sites from Ohio and Michigan. In summer 2022, we will partner on two Chesapeake Bay Watershed NOAA B-WET grants, incorporating GLOBE protocols and geospatial technologies to assist GLOBE schools in studying the New York State portion of the Chesapeake Bay watershed. Several schools are planning to use the Student Research Symposium model with an SRS on our campus in Fall 2022, with hopes of students submitting to the IVSS and Regional SRS in Spring 2023.

Areas of Expertise: In-service professional development, Elementary GLOBE, pre-service teachers, GLOBE in undergraduate classrooms, engineering, education research, citizen science

Cooperating Organization: State University of New York at Fredonia

Collaborators: GLOBE Mission Earth, AREN Project, GLOBE Teams Project, GLOBE Satellites and Education Team, DataSpire Project, NOAA B-WET (two in Great Lakes Initiative and two in Chesapeake Bay initiatives)

Presentations: For a complete list of presentations, visit www.globe.gov/web/institute-for-research-in-science-teaching/home/publication

Coordinator
Michael Jabot
Michael.Jabot@fredonia.edu
www.twitter.com/mjabot
Our new collaborative Xcite Learning/Bowling Green State University (BGSU) Northwest Ohio Center for STEM Education (NWO), and The Toledo Zoo and Aquarium GLOBE Partnership engaged in preservice teacher professional development, K-12 student programming, pre-service teacher training, and collaborative federal grant activities to promote GLOBE in the region.

Throughout 2021, two Ohio STEM-designated schools in northwest Ohio participated in GLOBE student research projects made possible through funding from National Geographic and Youth Learning as Citizen Environmental Scientists (YLACES). Fifth and 6th-grade students from Hull Prairie Intermediate school in Perrysburg (led by teacher Amy Boros) and 4th grade students from Dorr Elementary School in Holland (led by teacher Kristy DiSalle) researched projects focused on surface, soil, and air temperature, soil moisture, and plant and animal diversity. Both schools have an outdoor school “PRAIRIE” installed by the Toledo Zoo. Our project, Project Prairie Pandemic, aimed at getting students hands-on inquiry experiences during the lockdown and subsequent hybrid periods of learning. Students took “STEM ON THE GO” backpacks home filled with science instruments to complete GLOBE protocols in their backyards. They practiced data collection there, and then again at the school prairie when back in session. Dr. Jodi Haney, GLOBE partner coordinator, met with students both face to face and via zoom to mentor students throughout the process. The student teams submitted 13 research presentations to the GLOBE International Virtual Science Symposium (IVSS) and to a local GLOBE Science Research Symposium (SRS).

During the fall semester of 2021, BGSU Early Childhood and Inclusive Education preservice teachers received GLOBE teacher certification for their engaged participation in course activities that integrated Elementary GLOBE and GLOBE atmosphere (clouds and contrails) and biosphere protocols (trees). A total of 32 preservice teachers earned GLOBE teacher certification as a result.

These undergraduate students later led GLOBE protocols at the first annual Bioblitz BG program taking place on September 27, 2021. Over 100 students from Crimm Elementary school in Bowling Green participated in GLOBE data collection (air, surface, and soil temperatures and Globe Observer cloud observations), an iNaturalist biodiversity Bioblitz, and a take home Mason Bee House activity. The event took place at the prairie in Wintergarden Park, Bowling Green, Ohio. Preservice teachers from BGSU worked one-on-one with young learners from the local elementary school to better understand and protect our local prairie environments.

News Story: https://bgindependentmedia.org/tag/bioblitz/

Funding: National Geographic, Youth Learning as Citizen Environmental Scientists (YLACES) - sponsored the Project Prairie Pandemic program, Northwest Ohio Center for Excellence in STEM Education (NWO) (sponsored the Bioblitz BG)

Cooperating Organizations: Xcite Learning, The Toledo Zoo, Wintergarden Park, NWO STEM Center of Excellence at BGSU

Areas of Expertise: In-service and pre-service professional development, programming for students, elementary GLOBE
UNIVERSITY OF TOLEDO


The University of Toledo (UT) has engaged more than 480 schools and organizations throughout its history of work with GLOBE. In the 2020-2021 school year, students from 20 schools entered data for 1,635 observations to the GLOBE website. UT leads the efforts of GLOBE Mission EARTH (GME), a collaborative of institutions whose mission is to increase involvement in the GLOBE program funded by NASA. Dr. Kevin Czajkowski is the lead scientist on the Urban Heat Island Effect-Surface Temperature Intensive Observation Period.

Activities that UT was involved in during 2021:

- As part of the Midwest Earth System Science Collaborative, UT partnered with Dr. Michael Notaro (University of Wisconsin-Madison) and David Bydlowski (Wayne RESA-AREN Project) to host the Midwest Earth System Science Virtual Student Research Symposium.
- Kids Club, an online afterschool interaction, engaged 16 students from grades 3–4 in learning about clouds, budbursts, and trees.
- UT expanded its reach to high school students in the STEM Enhancement in Earth Science (SEES) program and the Upward Bound program. Upward Bound students collected GLOBE water quality data on the Ottawa River and studied heat islands on UT’s campus.
- GME-UT teamed up with Mission Mosquito to present “Ouch Stop Biting Me!” Students learned about the Great Black Swamp and Lake Erie, and how to submit data to the Mission Mosquito Campaign for the Lake Erie Water Festival held virtually in May.
- The GME/BWET Google Classroom expanded with the addition of the TerraROVER (Remotely Operated Vehicles for Education and Research) materials from the AREN project.
- GME-UT is working with Dr. Vasco Mantas, University of Coimbra, Portugal, to study the urban heat islands of sports fields with artificial turf or natural grass during Landsat overpasses.

More details and links to news stories about these activities can be found at https://www.globe.gov/web/university-of-toledo/home/activities.

News Stories: GLOBE Mission EARTH news

Funding: NASA Cooperative Agreement Notice (CAN) #: NNX16AC54A & NOAA Bay Watershed Education and Training (B-WET) # NA20NOS4290013.

Areas of Expertise: Pre-service teachers, in-service professional development, Elementary GLOBE, STEM in GLOBE, GLOBE K-16 students & classrooms, engineering, science research, citizen science.

Cooperating Organizations: The University of Toledo; WestEd/University of California Berkeley; Boston University; Tennessee State University; NASA Langley Research Center; Institute for Earth Observations at Palmyra Cove; The Nuhop Center for Experiential Learning; State of New Mexico; Defiance College; Northern Michigan University; State University of New York (SUNY)-Fredonia.

Presentations and other resources: Urban Heat Island Effect/Surface Temperature Intensive Observation Period; STEM for All Video Showcase: GLOBE Mission EARTH: GLOBE in the time of Covid

Coordinator
Dr. Kevin Czajkowski
kevin.czajkowski@utoledo.edu

Janet Struble
janet.struble2@utoledo.edu

Sara Mierzwiak
sara.mierzwiak@rockets.utoledo.edu

Dr. Glenn Lipscomb
glenn.lipscomb@utoledo.edu

Team Members
Dr. Mark Templin
mark.templin@utoledo.edu

MD Ishfaq Ur Rahman
mdishfaq.ur.rahman@rockets.utoledo.edu

Olawale Oluwafemi
olawale.Oluwafemi@rockets.utoledo.edu

Shari Grayczyk
shari.grayczyk@utoledo.edu

Dr. Yitong Jiang
yitong.jiang@utoledo.edu

Dr. Farrokh Namjooyan
farrokh.namjooyan@gmail.com
www.globe.gov/web/berks-conservancy-environmental-exploration-center

In 2021 we held one GLOBE training for our citizen science volunteers. We normally hold more, but COVID limited our ability to do so. We used GLOBE during our programs for kids and families. We normally use it for field trips, but schools were not conducting field trips in 2021. We did not participate in the SRS this year. We had local events like the Science Research Institute, and we helped students with local projects about the environment.

**Funding:** Berks Nature

**Areas of Expertise:** In-service professional development, programming for students, Elementary GLOBE, pre-service teachers, education research, science research, citizen science, informal science

**Coordinator**
Michael Griffith
Michael.griffith@berksnature.org
(610) 372-4992, Ext. 108
The University of Puerto Rico, Mayaguez GLOBE Initiative aims to encourage highly qualified STEM majors to become teachers and enhance their STEM education experiences using GLOBE. Pre-service teachers’ STEM experiences require that each UPRM Noyce Scholar learn to use the GLOBE resources and website, and their supervising teacher will also learn about it. Thus, the process will facilitate STEM pre-service teachers with implementing GLOBE learning activities in local classrooms. The GLOBE website was introduced to the pre-service teachers in English and Spanish, showing them the program’s versatility and activities. An evaluation shows that the participants strongly agreed (4.0/4.0) to practice GLOBE and what they learned in their schools.

**Funding:** Funded in part by NSF under the proposal entitled “Preparing and Supporting Bilingual STEM Teachers in Puerto Rico.”

**Areas of Expertise:** In-service professional development, pre-service teachers, GLOBE in undergraduate classrooms, citizen science, informal science.

**Cooperating Organizations:** University of Puerto Rico, Mayaguez Campus

Coordinator
Juan Lopez-Garriga
juan.lopez16@upr.edu
(787) 464-5720
The highlight of GLOBE in 2021 was the funding from Well Rounded Education in the spring to conduct two Citizen Science for Educators workshops. The workshops introduced educators to GLOBE and iNaturalist and empowered them to use GLOBE protocols with their students by providing training and classroom equipment. The theme of the workshop was climate science and climate change. We used surface temperature, green up/green down, carbon cycle, air temperature, and precipitation protocols. For a deeper look into the class, you can sign up as a student to see the Google Classroom.

South Dakota GLOBE-trained teachers are eligible to apply for mini-grant funding to purchase a classroom set of supplies for their students.

**Funding:** South Dakota Department of Agriculture and Natural Resources with support from the South Dakota Space Grant Consortium and South Dakota Department of Education

**Areas of Expertise:** In-service professional development, programming for students, Elementary GLOBE, pre-service teachers, citizen science, informal science

**Coordinator**
Anne Lewis
anelewis@sd-discovery.org
(605) 224-8295
UNIVERSITY OF TENNESSEE AT CHATTANOOGA

www.globe.gov/web/university-of-tennessee-at-chattanooga-partner

Funding: Tennessee Space Grant Consortium

Areas of Expertise: In-service professional development, Elementary GLOBE, pre-service teachers, education research, mathematics education, science education

Coordinator
Dr. Deborah A. McAllister
Deborah-McAllister@utc.edu
(423) 425-5376

Team Members
Peggy Moyer
Dot Finch
The Texas STEM Coalition had two primary GLOBE activities in 2021. The coalition hosts the annual Texas STEM Conference where GLOBE was featured in two presentations. The conference provided a virtual exhibit space where materials and information on GLOBE could be accessed by teachers from across the state. Due to COVID, the conference was held virtually.

**Areas of Expertise:** In-service professional development, Elementary GLOBE, technical assistance to schools

**Cooperating Organization:** Austin ISD

**Coordinator**
Michael Odell, Ph.D.
mrlodell@gmail.com
(208) 301-0542
THE UNIVERSITY OF TEXAS AT TYLER

uttyler.edu/globe/

The University of Texas at Tyler is a GLOBE U.S. partner, responsible for recruiting, training, and mentoring teachers in GLOBE activities and facilitating student research in schools across East Texas. Students take GLOBE measurements at their schools on the UT Tyler campus. The partnership focuses on training pre-service and in-service teachers and facilitating student research at the UT Tyler University Academy Lab Schools in Tyler, Palestine, and Longview. In 2021, the partnership trained pre-service teachers enrolled in elementary and secondary science methods classes. Presentations were also provided at the annual Texas STEM Conference.

Areas of Expertise: In-service professional development, Elementary GLOBE, pre-service teachers, GLOBE in undergraduate classrooms, education research

Cooperating Organizations: The Ingenuity Center, University of Texas at Tyler University Academy Lab Schools; UT Tyler UTeach STEM Teacher Preparation Program

Publications and Presentations:

- Odell, M.R. L. & Kennedy, T.J. (2021). The GLOBE Program (Grades 5-12), Texas STEM Coalition Virtual Conference.

Co-Coordinators

Teresa Kennedy, Ph.D.
tkennedy@uttyler.edu
(903) 566-7132

Michael Odell, Ph.D.
modell@uttyler.edu
(208) 301-0542
2021 highlights included:

- Hampton City Schools, trained more than 60 third grade teachers in Elementary GLOBE through a collaboration with National Institute for Aerospace
- GLOBE Goes to Camp Pilot implementing GLOBE Clouds, Surface Temperature, and Trees
- Columbia Community College Pre-service GLOBE Surface Temperature Training in partnership with Camp Discovery in Blythewood, South Carolina
- ENGAGE Virtual Teacher Cohort, summer atmosphere training, monthly connections, and closing student showcase support for selected middle and high school teachers
- Virginia Master Naturalist, invited webinar on GLOBE Clouds and presentation at annual conference on GLOBE Observer
- AMS Project Atmospheres, cloud protocol training for teachers selected for the American Meteorological Society’s Project Atmospheres cohort
- Pacing Guides and Webinar Series supported by GLOBE Mission Earth and NESEC
- Langford Middle School, ZooBot Magnet Surface Temperature School-wide Investigation with grades 6-8 in partnership with Camp Discovery in Blythewood, South Carolina

Areas of Expertise: In-service professional development, Elementary GLOBE, pre-service teachers, science research, citizen Science, informal science

Cooperating Organization: GLOBE Mission Earth/NESEC

Coordinator
Tina Harte
tina.r.harte@nasa.gov
(757) 784-6083

Team Members
Jessica Taylor
Jessica.e.taylor@nasa.gov
757-864-6358

Marile Colon Robles
mariles.colonrobles@nasa.gov

Tina Rogerson
tina.m.rogerson@nasa.gov

Rosalba Giarratano
rosalba.giarratano@ssahiq.com

Angie Rizzi
angela.rizzi@nasa.gov
UNIVERSITY OF WISCONSIN-MADISON

www.globe.gov/web/space-science-and-engineering-center

Highlights of 2021

- Development of the Wisconsin Educational Leadership for Community Outreach and Mentoring for the Environment (WELCOME), supported by National Science Foundation GEOPATHs Program
- GLOBE educator professional development workshop in October 2021 at the Welty Environmental Center, Beloit for middle and high school teachers in the School District of Beloit, faculty from Beloit College, and Welty staff, focused on atmosphere, hydrosphere, and pedosphere protocols
- May 2021 GLOBE Midwest ESS Virtual Science Symposium (presentations from about a dozen K-12 schools)

Funding: NASA GEOPATHs, University of Wisconsin-Madison Baldwin Wisconsin Idea Grant

Areas of Expertise: In-service professional development, programming for students, Elementary GLOBE, pre-service teachers, GLOBE in undergraduate classrooms, engineering, education research, science research, citizen science, informal science

Cooperating Organizations: School District of Beloit, Welty Environmental Center, Beloit College, Achieving Collaborative Treatment

News Stories:

Nelson Institute Website, “UW-Madison partners with Beloit community to increase diversity within STEM,” 2021. nelson.wisc.edu/uw-madison-partners-with-beloit-community-to-increase-diversity-within-stem/


NASA Science website, “GLOBE research done in the time of COVID: Students showcase their work,” 2021. science.nasa.gov/learners/nuggets/globe-research-done-time-covid-students-showcase-their-work

Coordinator
Michael Notaro
mnotaro@wisc.edu
(608) 261-1503

Brenda Plakans
Brenda@weltycenter.org
(608) 362-6212

Tawnya Cary
caryt@beloit.edu
(608) 363-2371

Team Members
Aaron Wilson
aaron@weltycenter.org
(608) 362-6212

Kelly Grorud
kgrorude@sdb.k12.wi.us
(608) 361-4055

Darien Becker
darien@weltycenter.org
(608) 362-6212

Meredith Falkavage
mfalkavage@sdbk12.wi.us
(608) 361-4079
GLOBE AND EARTH SYSTEM SCIENCE (ESS) COLLABORATIVES

https://www.globe.gov/web/united-states-of-america/home/ess-collaborative

Purpose

In early 2020, teams of Earth System Science (ESS) Providers and GLOBE partners were recruited to develop and implement a plan for sustaining collaboratives in each of the six GLOBE regions with the potential for one or more teams to cross these regions. This work is based on a model from Colorado which has an Earth System Science Collaborative Network that brings together a variety of stakeholders from different sectors that work together to benefit ESS in Colorado. Six additional collaboratives were formed in the following regions: California, the Midwest, New York, New England, and two cross-regional teams in the Southeast.

Who Makes up the Collaborative Teams?

- Formal and informal providers in Earth System Science (ESS) from:
  - K-12 schools
  - Community colleges
  - Universities
  - Minority serving institutions
  - Informal science learning centers
  - Nonprofit education organizations
- Regional GLOBE representative
- Active GLOBE Partners in a region
The CA Strong team includes San Francisco Bay and Elkhorn Slough National Estuarine Research Reserves (NERR), WestEd/UC Berkeley, NASA Jet Propulsion Laboratory (JPL), and Los Angeles Unified School District Office of Outdoor Education (LAUSDOOE). In 2021 CA Strong successfully collaborated on a GLOBE+ Virtual Student Symposium hosting twenty-seven projects and seventy-six students. NASA JPL and Elkhorn Slough NERR also provided hydrosphere training for the Friends of LA River (an organization associated with LAUSDOOE.) Project goals for 2022 collaboration efforts include training for facilitators working at LAUSDOOE summer camps, microplastics pilot program, training for JPL Solar System Ambassadors, and collaboration between students in Slovakia and California schools.
Our vision is to expand and strengthen GLOBE interactions among citizens and schools/districts in the Midwest United States. Our organization provides opportunities for team-based, student-led GLOBE scientific research projects and collaborative events; employs a regional focus that fosters multi-school/locale interactions; increases the number/participation of GLOBE schools, teachers, citizens, and partnerships; and increases the input of quality GLOBE data.
The members of the New England Regional Earth System Science (NERESS) Collaborative are dedicated to supporting environmental stewardship through science education in schools and universities, and through promotion of science citizenship in urban and rural communities. This group places extra focus on the vitally important area of climate change. As a working group, NERESS will draw upon science education materials and subject matter experts from GLOBE, NASA, NOAA, and other federal and state agencies, such as the U.S. Forestry and Parks Service. We provide science resources for students, teachers, and citizens of all ages. Specifically, we support science education and science citizenship in communities of low economic standing to support their efforts in correcting systemic environmental inequities.

Our objectives are: share resources between the founding members of NERESS; incorporate and adapt GLOBE, NASA, NOAA, and other science and science education resources in an increased number of school districts and informal science education venues; and support community action by students and citizens in communities that are of low socioeconomic status to advocate for positive changes in the quality of their environment.

As a collaborative, we will recruit and welcome all regional organizations to assist us in our planning and outreach.
The New York State ESS Collaborative is focusing on ways that GLOBE and Earth System Science can be infused as a regional approach to science education. Our ESS Collaborative is built around strategic partnerships between higher education (SUNY Fredonia), career and technical education (E2CC BOCES); statewide STEM professional development (the New York State Master Teacher Program); and government agencies (the New York State Department of Environmental Conservation). In our work, these groups are coordinating teacher and student activities to take advantage of the unique strengths that these organizations have to offer.

As an example, our current focus is on the development of student understanding of the carbon cycle. In this, teachers across the region are being trained in the GLOBE Carbon Cycle protocols as the scaffold for future work. This work is built upon the NOAA B-WET funded work with the NYSDEC, the sustained professional development of teachers offered by the NYS Master Teacher Program, the development of STEM technologies with E2CC BOCES classrooms across the region, and the development of classroom-based pedagogies by preservice teachers at SUNY Fredonia.

Since each of the organizations also exist outside the Western New York region, the hope is that this model could scale across New York State and eventually serve as a model other states could use.
Partnership Areas of Expertise

IN-SERVICE PROFESSIONAL DEVELOPMENT
Berks Nature – The Nature Place – Pennsylvania (pg. 38)
Bowling Green State University – Ohio (pg. 36)
Global STEM Education Center – Massachusetts (pg. 30)
Grand Valley State University – Michigan (pg. 32)
Institute for Research in Science Teaching – New York (pg. 35)
Leitzel Center at the University of New Hampshire – New Hampshire (pg. 34)
NASA Goddard Space Flight Center – Maryland (pg. 28)
NASA Langley Research Center – Virginia (pg. 44)
Northern Michigan University – Michigan (pg. 33)
Science Action Club – National (pg. 23)
South Dakota Discovery Center – South Dakota (pg. 40)
Texas STEM Coalition – Texas (pg. 42)
The University of Texas at Tyler – Texas (pg. 43)
University of Alaska Fairbanks – Alaska (pg. 21)
University of Puerto Rico, Mayaguez Campus – Puerto Rico (pg. 39)
University of Arkansas, Fayetteville – Arkansas (pg. 22)
University of Tennessee at Chattanooga – Tennessee (pg. 41)
University of Wisconsin – Madison – Wisconsin (pg. 45)
University of Toledo – Ohio (pg. 37)
WestEd/UC Berkley – California (pg. 25)
Partnership Areas of Expertise continued

PROGRAMMING FOR STUDENTS

- Berks Nature – The Nature Place – Pennsylvania (pg. 38)
- Bowling Green State University – Ohio (pg. 36)
- Global STEM Education Center – Massachusetts (pg. 30)
- NASA Goddard Space Flight Center – Maryland (pg. 28)
- Science Action Club – National (pg. 23)
- South Dakota Discovery Center – South Dakota (pg. 40)
- UCAR Center for Science Education – Colorado (pg. 27)
- University of Alaska Fairbanks – Alaska (pg. 21)
- University of Arkansas, Fayetteville – Arkansas (pg. 22)
- University of Wisconsin – Madison – Wisconsin (pg. 45)

ELEMENTARY GLOBE

- Berks Nature – The Nature Place – Pennsylvania (pg. 38)
- Bowling Green State University – Ohio (pg. 36)
- Institute for Research in Science Teaching – New York (pg. 35)
- Leitzel Center at the University of New Hampshire – New Hampshire (pg. 34)
- NASA Goddard Space Flight Center – Maryland (pg. 28)
- NASA Langley Research Center – Virginia (pg. 44)
- Northern Michigan University – Michigan (pg. 33)
- South Dakota Discovery Center – South Dakota (pg. 40)
- Texas STEM Coalition – Texas (pg. 42)
- The University of Texas at Tyler – Texas (pg. 43)
- University of Alaska Fairbanks – Alaska (pg. 21)
- University of Arkansas, Fayetteville – Arkansas (pg. 22)
- University of Tennessee at Chattanooga – Tennessee (pg. 41)
- University of Toledo – Ohio (pg. 37)
- University of Wisconsin – Madison – Wisconsin (pg. 45)

PRE-SERVICE TEACHERS

- Berks Nature – The Nature Place – Pennsylvania (pg. 38)
- Bowling Green State University – Ohio (pg. 36)
- Grand Valley State University – Michigan (pg. 32)
- Institute for Research in Science Teaching – New York (pg. 35)
- NASA Goddard Space Flight Center – Maryland (pg. 28)
- NASA Langley Research Center – Virginia (pg. 44)
- Northern Michigan University – Michigan (pg. 33)
- South Dakota Discovery Center – South Dakota (pg. 40)
- The University of Texas at Tyler – Texas (pg. 43)
- University of Alaska Fairbanks – Alaska (pg. 21)
- University of Arkansas, Fayetteville – Arkansas (pg. 22)
Partnership Areas of Expertise continued

**PRE-SERVICE TEACHERS continued**
University of Puerto Rico, Mayaguez Campus – Puerto Rico (pg. 39)
University of Tennessee at Chattanooga – Tennessee (pg. 41)
University of Toledo – Ohio (pg. 37)
University of Wisconsin – Madison – Wisconsin (pg. 45)

**GLOBE IN UNDERGRADUATE CLASSROOMS**
Bowling Green State University – Ohio (pg. 36)
Grand Valley State University – Michigan (pg. 32)
Institute for Research in Science Teaching – New York (pg. 35)
NASA Goddard Space Flight Center – Maryland (pg. 28)
The University of Texas at Tyler – Texas (pg. 43)
University of Alaska Fairbanks – Alaska (pg. 21)
University of Puerto Rico, Mayaguez Campus – Puerto Rico (pg. 39)

**ENGINEERING**
Institute for Research in Science Teaching – New York (pg. 35)
University of Alaska Fairbanks – Alaska (pg. 21)
University of Arkansas, Fayetteville – Arkansas (pg. 22)
University of Toledo – Ohio (pg. 37)

**EDUCATION RESEARCH**
Berks Nature – The Nature Place – Pennsylvania (pg. 38)
Institute for Research in Science Teaching – New York (pg. 35)
Leitzel Center at the University of New Hampshire – New Hampshire (pg. 34)
NASA Goddard Space Flight Center – Maryland (pg. 28)
Northern Michigan University – Michigan (pg. 33)
The University of Texas at Tyler – Texas (pg. 43)
University of Alaska Fairbanks – Alaska (pg. 21)
University of Arkansas, Fayetteville – Arkansas (pg. 22)
University of Tennessee at Chattanooga – Tennessee (pg. 41)
WestEd/UC Berkley – California (pg. 25)

**SCIENCE RESEARCH**
Berks Nature – The Nature Place – Pennsylvania (pg. 38)
NASA Goddard Space Flight Center – Maryland (pg. 28)
NASA Langley Research Center – Virginia (pg. 44)
University of Alaska Fairbanks – Alaska (pg. 21)
University of Arkansas, Fayetteville – Arkansas (pg. 22)
University of Toledo – Ohio (pg. 37)
University of Wisconsin – Madison – Wisconsin (pg. 45)
PARTNERSHIP AREAS OF EXPERTISE

CITIZEN SCIENCE

Berks Nature – The Nature Place – Pennsylvania (pg. 38)
Global STEM Education Center – Massachusetts (pg. 30)
Institute for Research in Science Teaching – New York (pg. 35)
Leitzel Center at the University of New Hampshire – New Hampshire (pg. 34)
NASA Goddard Space Flight Center – Maryland (pg. 28)
NASA Langley Research Center – Virginia (pg. 44)
Science Action Club – National (pg. 23)
South Dakota Discovery Center – South Dakota (pg. 40)
UCAR Center for Science Education – Colorado (pg. 27)
University of Alaska Fairbanks – Alaska (pg. 21)
University of Arkansas, Fayetteville – Arkansas (pg. 22)
University of Puerto Rico, Mayaguez Campus – Puerto Rico (pg. 39)
University of Toledo – Ohio (pg. 37)
University of Wisconsin – Madison – Wisconsin (pg. 45)

INFORMAL SCIENCE

Berks Nature – The Nature Place – Pennsylvania (pg. 38)
Global STEM Education Center – Massachusetts (pg. 30)
Grand Valley State University – Michigan (pg. 32)
NASA Goddard Space Flight Center – Maryland (pg. 28)
NASA Langley Research Center – Virginia (pg. 44)
Science Action Club – National (pg. 23)
South Dakota Discovery Center – South Dakota (pg. 40)
UCAR Center for Science Education – Colorado (pg. 27)
University of Alaska Fairbanks – Alaska (pg. 21)
University of Arkansas, Fayetteville – Arkansas (pg. 22)
University of Puerto Rico, Mayaguez Campus – Puerto Rico (pg. 39)

OTHER

Culturally responsive climate change education — University of Alaska Fairbanks – Alaska (pg. 21)
STEM career development, Data storytelling — WestEd/UC Berkley – California (pg. 25)
Educational resource development, GLOBE weather — UCAR Center for Science Education – Colorado (pg. 27)
Individualized GLOBE training and implementation — NASA Goddard Space Flight Center – Maryland (pg. 28)
After school programs — Global STEM Education Center – Massachusetts (pg. 30)
Mathematics education — University of Tennessee at Chattanooga – Tennessee (pg. 41)
STEM in GLOBE, GLOBE K-16 students & classrooms — University of Toledo – Ohio (pg. 37)
Technical Assistance to Schools — Texas STEM Coalition – Texas (pg. 42)