



# Annual Meeting 2023: Schedule

(This schedule may be adjusted prior to the Annual Meeting. Check for the most up-to-date version at [GLOBE.gov](http://GLOBE.gov))

**Note:** The schedules for the GLOBE Regional Coordination Offices (RCO) meeting on 15 July and the GLOBE Working Groups (WG) meetings on 16 and 21 July are being developed separately and will be shared directly with those participating in those meetings.

Time (MST)	Activity
<b>Monday 17 July</b>	
8 a.m. - 9 a.m.	<b>Networking breakfast</b> - working breakfast provided All participants together in dining room
9 a.m. - 10 a.m.	<b>Opening session</b> PROFESSIONALLY RECORDED AND SHARED) All participants together in main meeting room <ol style="list-style-type: none"> <li>1) <i>Welcome remarks:</i> <ul style="list-style-type: none"> <li>• <i>Land acknowledgement (Simon Castro-Wooldridge, GIO)</i></li> <li>• <i>Meeting sponsor: National Science Foundation (NSF)</i></li> <li>• <i>GLOBE Program Office (GPO): Amy Chen, National Aeronautics and Space Administration (NASA)</i></li> <li>• <i>Supporters:</i> <ul style="list-style-type: none"> <li>○ <i>Department of State (DOS): Kia Henry</i></li> <li>○ <i>National Oceanic and Atmospheric Administration (NOAA): John McLaughlin</i></li> </ul> </li> <li>• <i>Co-host: Auraria Sustainable Campus Program (Rylee Mccone / Cassy Cadwallader) and MSU (Rich Wagner)</i></li> <li>• <i>GIO: John Ristvey,</i></li> <li>• <i>Social Media: Madeline Lane (GIO) - a brief about social media during the meeting</i></li> </ul> </li> <li>2) <i>Key logistics and safety brief</i> <ul style="list-style-type: none"> <li>• <i>Health and safety - Bob Wiley (UCAR)</i></li> <li>• <i>Logistics and identification of on-duty UCAR staff - Simon Castro-Wooldridge (GIO)</i></li> </ul> </li> <li>3) <i>How to join the GLOBE Observer (GO) team for the week: Kristen Weaver (GO) - taking local observations around the meeting sites</i></li> </ol>
10 a.m. - 10:30 a.m.	<b>Networking break</b> tea/coffee provided GLOBE 'Agents of Change' videos to be shown
10:30 a.m. - noon	<b>Program session #1:</b> All participants together in main meeting room

Meeting sponsored by:



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	<ol style="list-style-type: none"> <li>1) <i>Introduce theme and strands (Presenter TBC)</i></li> <li>2) <i>Strategic plan progress - Tony Murphy (GIO)</i></li> <li>3) <i>Introduce GLOBE Climate Campaign - Grace Crain-Wright (GIO)</i></li> <li>4) <i>DIS report-out - Dave Overoye (DIS)</i></li> </ol>
<p>12:30 p.m. - 1:30 p.m.</p>	<p><b>Keynote speaker #1</b> - working lunch provided  <b>PROFESSIONALLY RECORDED AND SHARED</b>  All participants together in dining room  Leila Farhadi (George Washington University) presentation with Q&amp;A after  Title of talk: <i>Utilizing Space-Based and Field Site Observations to Quantify and Characterize the Terrestrial Water Cycle</i></p>
<p>2 p.m. - 3:30 p.m.</p>	<p><b>Community presentations session #1</b>  Four concurrent sessions in smaller meeting rooms, per strand</p> <p><b><u>For reference - presentation types and acronyms</u></b>  <i>LT: Lightning talk (10 mins)</i>  <i>TP: Traditional presentation (20 mins)</i>  <i>PD: Panel discussion (40 mins)</i>  <i>MW: Mini-workshop (60 mins)</i></p> <p><b><u>Breakout room 1</u></b>  Strand 1: <i>In and Out of Classrooms (IBC)</i></p> <p><i>LT x 3 (30 mins):</i></p> <ul style="list-style-type: none"> <li>● <i>Tracey Ostrom: Using GLOBE Mission Earth Quick start guides to engage students with GLOBE and NASA assets</i></li> <li>● <i>Julie Houck: From the classroom to beyond: A GLOBE teacher's perspective</i></li> <li>● <i>Ngosse Fall: The positive impact of GLOBE in education</i></li> </ul> <p><i>TP x 3 (60 mins):</i></p> <ul style="list-style-type: none"> <li>● <i>Todd Toth: Measuring CO2 and your carbon footprint</i></li> <li>● <i>Beatrice Onyange: The little GLOBE voices - scientific inquiry</i></li> <li>● <i>Samornsri Kanphai: The extension of GLOBE research program to strengthen local wisdoms in rural areas of thailand</i></li> </ul> <p><b><u>Breakout room 2</u></b>  Strand 2: <i>Mobilizing beyond Borders (MBB)</i></p> <p><i>LT x 3 (30 mins):</i></p> <ul style="list-style-type: none"> <li>● <i>Claudia Romagnoli: Descriptive study of the changes produced throughout the seasons in tree species of Argentina and Spain</i></li> <li>● <i>Ana Prieto: "Trees within LAC" Campaign</i></li> <li>● <i>Allessandra Sutti: The Microplastics Monitoring Protocol Trial - crossing borders to make the invisible visible</i></li> </ul> <p><i>TP x 1 (20 mins):</i></p> <ul style="list-style-type: none"> <li>● <i>Mike Jabot: From local implementation to global impact: GLOBE's role in achieving SDGs through environmental science diplomacy at the UN General Assembly Science Summit</i></li> </ul>



	<p><i>PD x 1 (40 mins):</i></p> <ul style="list-style-type: none"> <li><i>Dixon Butler/Kia Henry/Lyn Wigbels: Catalyzing international GLOBE implementation through GLOBE Plus Post</i></li> </ul> <p><b>Breakout room 3</b>  <b>Strand 3: Mapping Beyond Dots (MBD)</b></p> <p><i>LT x 3 (30 mins):</i></p> <ul style="list-style-type: none"> <li><i>Lenka Kleger: Sharing student research stories</i></li> <li><i>Mullica Jaroensutasinee: Geographical variation in mosquito key breeding sites using GLOBE Observer Mosquito Habitat Mapper App Data</i></li> <li><i>Cassie Soeffing: Earth System Explorers virtual internship for high school students</i></li> </ul> <p><i>TP x 1 (20 mins):</i></p> <ul style="list-style-type: none"> <li><i>Svetlana Darche: Shared measures to monitor student learning through GLOBE projects</i></li> </ul> <p><i>PD x 1 (40 mins):</i></p> <ul style="list-style-type: none"> <li><i>Marile Colon Robles: Taking GLOBE data one step further with AI and ML</i></li> </ul> <p><b>Breakout room 4</b>  <b>Strand 4: Benefits for Environment and Society (BES)</b></p> <p><i>LT x 3 (30 mins):</i></p> <ul style="list-style-type: none"> <li><i>Nektaria Adaktilou: Exploring student STEM identity in the GLOBE Mission EARTH Program</i></li> <li><i>Bo Lebo: K12 student integration within Natural Environment using STEM, STEAM and Each Child Our Future with intergenerational coaching and real time data collection (transdisciplinary investigation)</i></li> <li><i>Shannon Conner: Expanding the accessibility of Hydrosphere protocols by supporting classroom teachers</i></li> </ul> <p><i>TP x 3 (60 mins):</i></p> <ul style="list-style-type: none"> <li><i>Jessica Taylor: Promoting environmental stewardship and equity through camp partners engaging communities in GLOBE informal learning investigations</i></li> <li><i>Matthijs Beigheyn: Validating NO2 satellite measurements by GLOBE students on the ground</i></li> <li><i>Kevin Czajkowski: Engaging learners in air quality studies using small sensors</i></li> </ul>
<p>3:30 p.m. - 4 p.m.</p>	<p><b>Networking break</b> - tea/coffee provided  GLOBE 'Agents of Change' videos to be shown</p>
<p>4 p.m. - 5 p.m.</p>	<p><b>Program session #2:</b>  <b>PROFESSIONALLY RECORDED AND SHARED</b>  <b>All participants together in main meeting room</b>  <i>Working Groups Report-out and WG@10 update</i>  <i>Led by Tony Murphy (GIO)</i></p> <p><i>At close: brief housekeeping announcement regarding poster session Monday evening, breakfast session Tuesday morning and student experience logistics</i></p>
<p>6 p.m. - 8 p.m.</p>	<p><b>Opening reception and poster presentation</b> - finger food provided  <b>Curtis Hotel Ballroom</b></p>



	<i>Display of posters submitted by attendees, including student IVSS and SRS winners In Curtis Hotel ballroom. Following the poster presentation session, posters will remain up for the remainder of the meeting. Finger food buffet served at the reception.</i>
<b>Tuesday 18 July</b>	
8 a.m. - 9 a.m.	<b>Breakfast discussion session #1</b> - working breakfast provided PROFESSIONALLY RECORDED AND SHARED All participants together in dining room GLOBE Program Sponsor Q&A - NASA, NSF, NOAA, DOS Attendees will have the option to drop questions in drop-boxes on meeting day 1, and those not attending will have an option to submit questions in advance for the panel  Facilitator: John Ristvey (GIO)
9 a.m. - 9:10 a.m.	<b>Announcements / reminders</b>
9:10 a.m. - 9:20 a.m.	<b>Walk or transport to Auraria campus fo a surprise activity</b> Transport provided, or 10 minute walk
9:20 a.m. - 9:45 a.m.	<b>Surprise activity Auraria campus</b> PROFESSIONALLY RECORDED AND SHARED
9:45 a.m. - 10 a.m.	<b>Attendees returning to attend the special session walk or take transport back to hotel</b>
9:45 a.m. - 4 p.m.	<b>Student experience day #1</b> Offsite (Auraria campus / Denver) Students will be transported around Denver for the day. Includes Denver Museum of Science and Nature (DMSN) and data collection at the MSU campus. Packed lunch for students Led by Grace Crain-Wright (GIO) and Peter Falcon (NASA)
10 a.m. - noon	<b>Learning about Protocols session #1</b> Auraria Campus Protocols: Surface temperature, air temperature, biometry (tree height), clouds, and soil temperature, (plus others as identified by the Education Working Group) Led by Lynne Hehr (Education WG Chair) and Rich Wagner (MSU)
10 a.m. - noon	<b>Special session - Open Science:</b> includes networking break - tea/coffee provided PROFESSIONALLY RECORDED AND SHARED Main meeting room 'Contextualizing GLOBE for tribal communities and students': panel discussion led by Teresa Newberry, also including Renalda Freeman, Al Kusalikis, Elena Sparrow and Victoria Metcalf
12:30 p.m. - 1:30 p.m.	<b>Keynote speaker #2</b> - working lunch provided PROFESSIONALLY RECORDED AND SHARED All participants together in dining room Scott McIntosh (NCAR Deputy Director) presentation with Q&A after Talk title: 'The Sun, the Moon & Us'

Meeting sponsored by:



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2 p.m. - 3:30  
p.m.

## Community presentations session #2

Four concurrent sessions in smaller meeting rooms, per strand

### Breakout room 1

Strand 1: In and Beyond Classrooms (IBC)

LT x 1 (10 mins):

- Janet Struble: Mobilizing Beyond Your GLOBE Partnership Borders

TP x 2 (40 mins):

- Lucrecia Tripp: Preparing preservice teachers to use GLOBE activities in the primary and elementary classroom
- Eleanor Jaffee: The U.S. GLOBE Regional and Local Student Research Symposia: Connecting young environmental science researchers within and across U.S. communities

PD x 1 (40 mins):

- Nektaria Adaktilou: Seven years of GLOBE Mission EARTH evaluation: lessons learned

### Breakout room 2

Strand 2: Mobilizing beyond Borders (MBB)

LT x 3 (30 mins):

- Myron Williams: The PanAfri-GLOBE Initiative
- Kevin Czajkowski: Urban heat Island intensive observation period: engagement of students through GLOBE
- Rafaela Babish: How cool is your school?: Urban heat island effect: Israel, Ireland and Malta collaboration

TP x 1 (20 mins):

- Mike Jabot: Building global citizenship through environmental science diplomacy: professional development opportunities for NASA GLOBE teachers

1 x TP feedback session (30 mins):

- Marile Colon Robles: Feedback requested on GLOBE clouds satellite matches

### Breakout room 3

Strand 1: In and Beyond Classrooms (IBC)

Symposia:

- Stuart Robottom / Sandro Sutti: Microplastics in surface waters - their discovery, a draft protocol, cross-continent GLOBE student and teacher experiences, next steps towards 2030 (90 mins)

### Breakout room 4

Strand 4: Benefits for Environment and Society (BES)

TP x 2 (40 mins)

- Virgil Lorenzo: Inclusion of low-income families into GLOBE Community
- Constantinos Cartalis: Open Science in support of the study of cities as urban ecosystems

Meeting sponsored by:



Supported by:



Implemented by:



	<p>PD x 1 (40 mins):</p> <ul style="list-style-type: none"> <li>Becky Boger: How does GLOBE help increase climate literacy, environmental literacy and build healthy communities?</li> </ul>
3:30 p.m. - 4 p.m.	<b>Networking break</b> - tea/coffee provided
4 p.m. - 5 p.m.	<p><b>Program session #3:</b> Main meeting room and breakout rooms</p> <p><u>Main meeting room</u> GLOBE Observer: the eclipse. Led by Kristen Weaver (GLOBE Observer Deputy Project Coordinator)</p> <p><u>Breakout room 1:</u> Updated e-training modules. To inform the GLOBE community on updated e-training protocols, to be followed by community Q&amp;A on this topic. Led by Grace Crain Wright, GIO Science Coordinator</p> <p><u>Breakout room 2:</u> Trainer / mentor trainers: process and practice. Led by Education Working Group</p> <p>At close: brief housekeeping announcement regarding breakfast session Wednesday morning and NCAR visit arrangements (Wednesday afternoon)</p>
5:15 p.m. - 6:45 p.m.	<p><b>US Partner and Country Coordinator meeting (joint)</b> All participants together in main meeting room</p> <p>Led by Lyn Wigbels (GIO International Coordinator) and Jen Borgeault (US CC)</p>
<b>Wednesday 19 July</b>	
8 a.m. - 9 a.m.	<p><b>Breakfast discussion session #2</b> - working breakfast provided All participants together in dining room Topic: Working Group re-visioning Led by Tony Murphy (GIO)</p>
9 a.m. - 9:15 a.m.	<b>Announcements / reminders</b>
9:15 a.m. - 4 p.m.	<p><b>Student experience day #2</b> Offsite (Boulder) Students will be transported to Boulder for the day. Includes NCAR tour and fieldwork around Boulder. Lunch for students provided at NCAR Mesa Lab Cafeteria Led by Grace Crain-Wright (GIO) and Peter Falcon (NASA)</p>
9:15 a.m. - noon	<p><b>Learning about Protocols session #2</b> (onsite)</p> <p><u>Breakout rooms 1 and 2</u> Protocols: carbon cycle, graminoid biomass and pedosphere. Led by Led by Lynne Hehr (Education WG Chair) and Rich Wagner (MSU)</p>





9:15 a.m. - noon	<p><b>Program session #4</b> - includes networking break, tea/coffee provided  Main meeting room and breakout rooms as needed</p> <p><u>Main meeting room:</u></p> <ul style="list-style-type: none"> <li>GLOBE Regional Coordination Offices (RCO) capacity building / data literacy initiatives <b>PROFESSIONALLY RECORDED AND SHARED</b>  Led by Lyn Wigbels (150 mins)</li> </ul> <p><u>Breakout room 3</u></p> <ul style="list-style-type: none"> <li>Using GLOBEs Advanced Data Access Tool (ADAT). Led by DIS (60 mins)</li> </ul> <p><u>Breakout room 4</u></p> <ul style="list-style-type: none"> <li>Evaluation community of practice. Led by: Eleanor Jaffee. (60 mins)</li> </ul>
Afternoon	<p><b>Free afternoon.</b>  No lunch provided at Curtis Hotel on Wednesday.</p>
12:30 p.m. - 5:15 p.m.	<p><b>Optional: NCAR tour</b>  NCAR Mesa Lab tour and nature walk (Boulder)  Transport provided hotel-NCAR-hotel</p> <p>Lunch available for purchase at the Mesa Lab cafeteria on arrival  Two tours arranged - 1) 230-330 pm; 2) 3-4 pm (max 30 pax per tour)  Afternoon tea/coffee and cake provided at Mesa Lab (3:45-4:15 pm), opportunity to connect with NCAR scientists</p>
5:30 p.m. - 6:30 p.m.	<p><b>Optional: GLOBE Gives Back</b>  Cherry Creek clean-up (with MSU students), 5 mins walk from the Curtis Hotel  Approximately 30 volunteer slots. There will be a sign-up onsite from Monday 17 July. Led by Auroria Sustainable Campus Program (ASUP). Participants will need to sign ASCP waiver</p>
<b>Thursday 20 July</b>	
8:45 a.m. - 9 a.m.	<p><b>Announcements / reminders</b></p>
9 a.m. - 10 a.m.	<p><b>Program session #5:</b>  Main meeting room and breakout rooms</p> <p><u>Main meeting room:</u>  Proposing a Protocol: Amy Chen (GPO), Tony Murphy (GIO), members of the science working group</p> <p><u>Breakout room 1:</u>  What does GLOBE's air temperature data say about global warming? Led by Dave Overoye &amp; Cornell Lewis (DIS)</p> <p><u>Breakout room 2:</u>  GLOBE Alumni networking: Led by Karl Clarke (GIO)</p>



10 a.m. - 10:30 a.m.	<b>Networking break</b> - tea/coffee provided
10:30 a.m. - noon	<p><b>Community Presentation session #3:</b> <b>Main meeting room and breakout rooms</b></p> <p><u>Main meeting room:</u> Strand 1: <i>In and Beyond Classrooms (IBC)</i></p> <p>1 x TP (20 mins):</p> <ul style="list-style-type: none"> <li>• Sara Mierzwiak: <i>GLOBE Mission EARTH &amp; Earth Heart Farms: 80 acre land conservation and GLOBE festivals</i></li> </ul> <p>1 x MW (60 mins):</p> <ul style="list-style-type: none"> <li>• Christina Buffington: <i>Build a frost tube</i></li> </ul> <p><u>Breakout room 1</u> Strand 1: <i>In and Beyond Classrooms (IBC)</i></p> <p>1 x TP (20 mins):</p> <ul style="list-style-type: none"> <li>• Olawale Oluwafemi: <i>Engaging directly with students via NASA SEES, Upward Bound, and the GLOBE Kids Club.</i></li> </ul> <p>1 x MW (60 mins):</p> <ul style="list-style-type: none"> <li>• Rosalba Giarrantano: <i>Developing science communication skills using GLOBE Nature Notes</i></li> </ul> <p><u>Breakout room 2</u> Strand 2: <i>Mobilizing Beyond Borders (MBB)</i></p> <p>1 x LT: (10 mins):</p> <ul style="list-style-type: none"> <li>• Dorian Janney: <i>Telling Your story</i></li> </ul> <p>2 x TP (40 mins):</p> <ul style="list-style-type: none"> <li>• Lenka Kleger: <i>GLOBE changes the urban environment</i></li> <li>• Hameed Sulaiman: <i>Bundle protocol as an integration tool towards a significant learning experience for GLOBE students and teachers</i></li> </ul> <p>Panel x 1 (40 mins):</p> <ul style="list-style-type: none"> <li>• John Moore: <i>A3Sat: using CubeSat emulators to broaden advanced international participation in EarthSTEM education</i></li> </ul> <p><u>Breakout room 3</u> Strand 1: <i>In and Beyond Classrooms (IBC)</i></p> <p>HOA x 1 (10 mins):</p> <ul style="list-style-type: none"> <li>• Kristen Weaver: <i>STELLA: A do-it-yourself handheld spectrometer</i></li> </ul> <p>TP x 1 (20 mins):</p> <ul style="list-style-type: none"> <li>• David Bydlowski: <i>AREN Project – A STEM model implementing open science</i></li> </ul>





	<p>MW x 1 (60 mins):</p> <ul style="list-style-type: none"> <li>• <i>Brian Campbell: Taking tree height observations with ICESat-2 comparisons</i></li> </ul> <p><b>Breakout room 4</b> Strand 4: Benefits for Environment and Society (BES)</p> <p>1 x LT (10 mins):</p> <ul style="list-style-type: none"> <li>• <i>Vivienne Byrd: Resources (library kits) that support GLOBE implementation in public libraries</i></li> </ul> <p>1 x MW (60 mins):</p> <ul style="list-style-type: none"> <li>• <i>Becca Hatheway / John Ristvey and the accessibility subcommittee : Exceptional Needs Workshop: Using Visual Impairment (VI) simulators with a GLOBE learning activity and science protocols</i></li> </ul> <p><b>Breakout room 5</b> Strand 1: In and Beyond Classrooms (IBC)</p> <p>TP x 1 (20 mins):</p> <ul style="list-style-type: none"> <li>• <i>Kunga Phuntsho: Favorable condition for the growth of orange trees</i></li> </ul> <p>1 x MW (60 mins):</p> <ul style="list-style-type: none"> <li>• <i>Claudia Caro: Learning activities linked with the GLOBE Regional Campaign: Trees within LAC (60 mins), new breakout room</i></li> </ul>
12:30 p.m. - 1:30 p.m.	<p><b>Keynote speaker #3</b> - working lunch provided PROFESSIONALLY RECORDED AND SHARED All participants together in dining room Speaker: <i>Victoria Metcalf (GLOBE New Zealand Country Coordinator), presentation and Q&amp;A</i> Title: <i>Education in Antarctica - Why relationships matter for global outcomes</i></p>
1:45 p.m. - 3 p.m.	<p><b>Program session #6:</b> All participants together in main meeting room <i>Students reporting back on the protocols sessions and the student experience, students at round tables presenting their work while adults attendees rotate</i></p>
3 p.m. - 3:30 p.m.	<p><b>Networking break</b> - tea/coffee provided</p>
3:30 p.m. - 5 p.m.	<p><b>Closing session</b> PROFESSIONALLY RECORDED AND SHARED All participants together in main meeting room</p> <ol style="list-style-type: none"> <li>1) <i>Next steps - Amy Chen (GPO), Sponsors, John Ristvey (GIO), Co-hosts (ASCP, MSU), Working Group chairs</i></li> <li>2) <i>Show 5-minute 'week in review' film</i></li> <li>3) <i>Acknowledgements - Simon Castro-Wooldridge, (GIO)</i></li> </ol>
6 p.m. - 10 p.m.	<p><b>Meeting banquet and official closing</b> - full dinner provided Curtis Hotel Ballroom</p>

