



# **2021 Earth Educators' Rendezvous Online Afternoon Workshop Leader Webinar**

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# Webinar Outline

Introduction

Workshop Design Best Practices

Utilizing the Web Tools

Evaluation Instruments

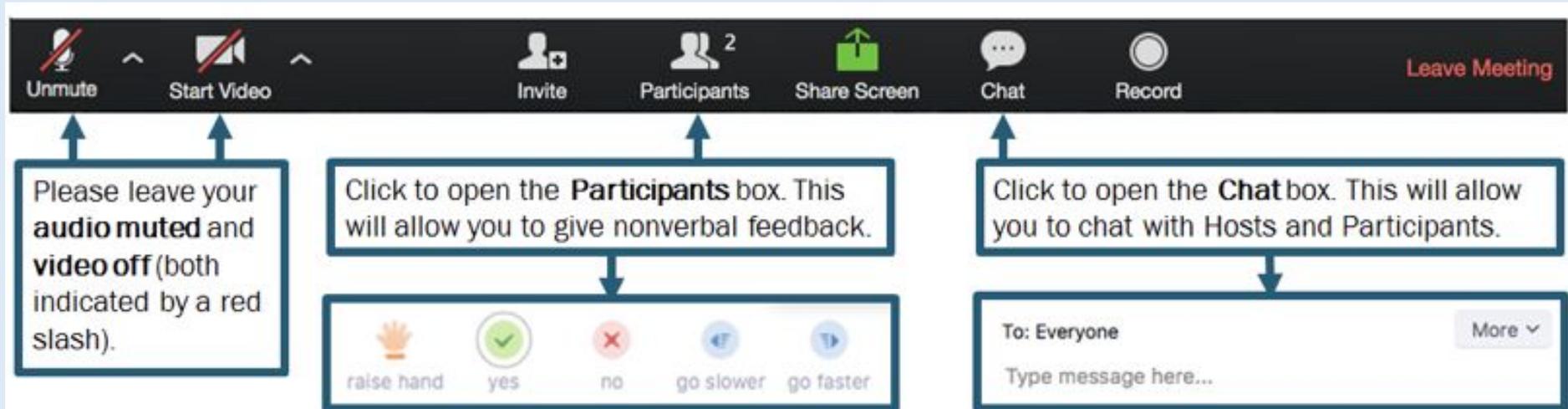
Code of Conduct

## Role of afternoon workshops at EER

- Address **more detailed topics of high interest** and build skills or an information base that is beneficial to the group and community.
- Workshops are **interactive**: participants learn from experts and from one another in formats that build on research-based pedagogies.
- Support the morning workshops with **focused activities**.
- See the full program at

[https://serc.carleton.edu/earth\\_rendezvous/2021/program/index.html](https://serc.carleton.edu/earth_rendezvous/2021/program/index.html)

## Let's get acquainted with Zoom's participant controls



The image shows a screenshot of the Zoom meeting control bar with three callout boxes explaining specific features:

- Unmute and Start Video:** A callout box points to the Unmute and Start Video buttons, which have red slashes over them. The text reads: "Please leave your **audio muted** and **video off** (both indicated by a red slash)." Below this callout is a separate box containing five icons: a hand (raise hand), a green checkmark (yes), a red X (no), a blue speech bubble (go slower), and a blue play button (go faster).
- Participants:** A callout box points to the Participants button, which shows a '2' next to it. The text reads: "Click to open the **Participants** box. This will allow you to give nonverbal feedback." Below this callout is a box containing the same five nonverbal feedback icons as above.
- Chat:** A callout box points to the Chat button. The text reads: "Click to open the **Chat** box. This will allow you to chat with Hosts and Participants." Below this callout is a box showing a chat interface with "To: Everyone" and a text input field "Type message here..." and a "More" dropdown menu.

## Before we begin – What are YOU thinking about your workshop?

What do you want participants to accomplish at your workshop?

- Write into the chat at least one goal.
- If you've thought this far, also write one thing you have thought about doing at the workshop to help participants meet that goal.

# Workshop Design and Best Practices

Think of it as a well-designed lesson

- What are your goals for the participants in your workshop?
- How will you assess if the participants successfully met your goals?
- What activities will allow you to achieve your goals for the workshop?

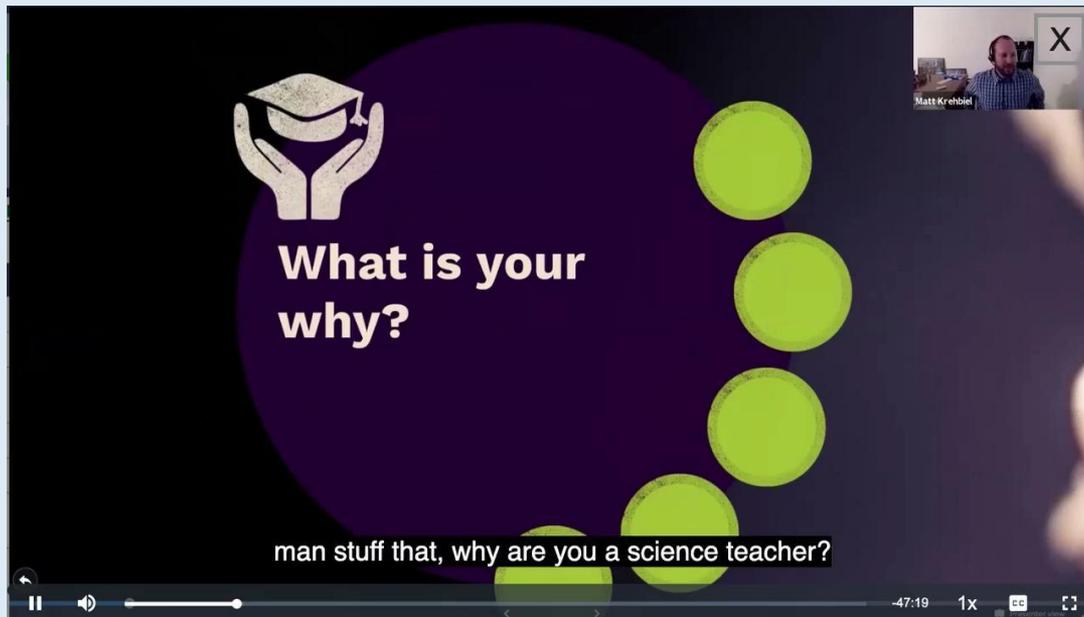


## Workshop Best Practices

**Engage:** Try to engage your participants from the very start. Throughout the webinar maximize potential participant activities.

What were some strategies this presenter used to engage participants? Use the Zoom Chat Box to answer.

Example from September 12, 2019: Using the NGSS to Change Worlds



The screenshot shows a Zoom webinar slide with a dark purple background. On the left, there is a white icon of a graduation cap held by two hands. To the right of the icon, the text "What is your why?" is displayed in white. Further to the right, there are four light green circles arranged vertically. At the bottom of the slide, a white text box contains the question "man stuff that, why are you a science teacher?". In the top right corner, there is a small video thumbnail of the presenter, Matt Krehbiel, with a name label below it. The Zoom player interface is visible at the bottom, showing a play button, a progress bar, and a timestamp of -47:19.

Presenter Matt Krehbiel

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Webinar 10/22 - Poll 2 in Progress 0:08

Attendees are now viewing questions 0 of 1 (0%) voted

1. In what direction is the ground moving? - SEAT

Northeast (0) 0%  
 Northwest (0) 0%  
 Southeast (0) 0%  
 Southwest (0) 0%  
 Not moving (0) 0%

2. In what direction is the ground moving? - PKRD

Northeast (0) 0%  
 Northwest (0) 0%  
 Southeast (0) 0%  
 Southwest (0) 0%  
 Not Moving (0) 0%

3. In what direction is the ground moving? - MAIR

Northeast (0) 0%  
 Northwest (0) 0%  
 Southeast (0) 0%  
 Southwest (0) 0%  
 Not Moving (0) 0%

End Polling

Submit

Example from October 22, 2019: Using GPS Data to Teach about the Earth in Introductory Undergraduate Courses: Plate Tectonics, Earthquakes, Water Cycle, and Ice Mass Change

Unit 1: Collecting GPS Data

Pick a GPS station (SEAT, PKRD, MAIR).  
In what direction is the ground moving?

Poll #2

North  
East  
Height

SEAT PKRD MAIR

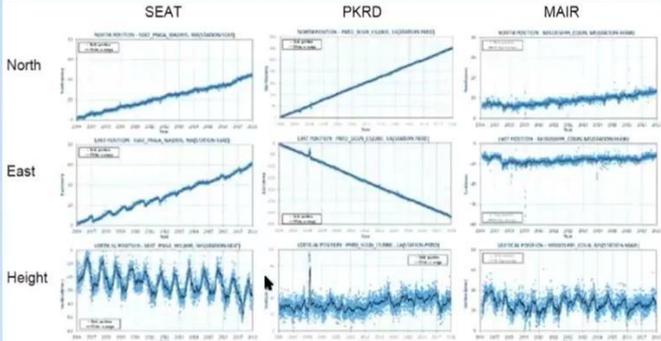


Figure 1. Graphs from UNAVCO's PBO Network Monitoring. The top graph shows north, the middle graph shows east, and the bottom graph shows height. The bottom (x) axis shows time from 2006 to 2018 for all graphs. Left (SEAT): Data from a GPS station in Seattle, Washington. Middle (PKRD): Data from a GPS station in Los Angeles, California. Right (MAIR): Data from a GPS station in Mississippi. Graphs from <https://www.unavco.org/instrumentation/networks/status/pbo>

GETSI  
Geodesy Tools for Societal Issues

UNAVCO SERC

## General Webinar/Workshop Design Principles

**Engage:** Try to engage your participants from the very start. Throughout the webinar maximize potential participant activities.

**Carefully balance your speaking time with participant engagement.**

**Learn:** Provide participants with relevant materials and explanation based on the stated objective of the webinar.

Repeat this cycle throughout the workshop

**Reflect/Apply:** Provide time for participants to reflect on the presented material and potentially apply it to their own goals for attending.

## Workshop Best Practices

- **Active engagement of participants during the workshop:** Nothing is deadlier or less effective than a workshop where participants do not participate. Give people an opportunity to participate actively in every session using a variety of techniques.
- **Model effective pedagogy:** The most successful workshops are those taught with good active pedagogy in mind and the least successful sessions are those where a presenter simply talks or reads from the slide.
- **Emphasize practical applications:** An emphasis on practical applications and strategies is an important aspect of effecting change in teaching practice.
- **Give participants time to interact and share experience/knowledge:** Participants bring valuable experience and ideas to webinars. Structured mechanisms for sharing experiences and expertise must be an integral part of every workshop program.

## Workshop Best Practices

- **Provide materials and examples:** Examples of how the webinar topics can be applied in the classroom and field are particularly valuable resources for participants.
- **Give participants time to make progress on a specific task that connects the workshop topic to their teaching:** Time to work individually during the workshop allows participants to reflect and to make progress on adapting webinar content to their own needs.
- **Make sure that participants leave the workshop with specific plans for future action:** Workshops can produce a wide variety of results ranging from changes in teaching practice and development of new learning resources to department-level planning and community-wide action. In all cases, workshop time devoted to planning next steps and feedback from peers is critical.

## Use your workshop webpage for participant resources

Participants will not be able to click on your presentation.

If you have online resources you want participants to explore have those links available to you or your co-presenter to paste into the chat.

Work with staff to have links or files available from the program website.

## Other Web Resources

Poll Everywhere  
Google Docs  
Kahoot

### Catherine Riihimaki's workshop from 2017:

#### Program

[Implicit Bias Presentation](#) (PowerPoint 2007 (.pptx) 32.5MB Mar5 18)

1:30 Welcome and Introductions

1:40 What is explicit bias? What is implicit bias?

- Definitions [5 min]
- In small groups, discuss examples from your own lives [15 min]
- Explore resources at [Project Implicit](#) [15 min]
- Discuss outcomes [10 min]

2:25 Discussion of problems caused by implicit bias

- Individually explore [geoscience career statistics](#) from AGI and this [interactive website](#) on gender in teaching evaluations [15 min]
- Report out observations in small groups [10 min]
- Summarize results as a large group [10 min]

3:00 Discussion of strategies to make classrooms, programs, and institutions more inclusive

- In small groups, read a recent [Science Magazine article](#) on implicit bias in publishing and funding, and then discuss strategies for addressing implicit bias across multiple scales of our professional lives. Include important metrics for monitoring implicit bias. [30 min]
- Work on action plans [15 min]
  - [Strategies for combatting implicit bias](#) (Acrobat (PDF) 27KB Jul20 17)

3:45 [End of Workshop Evaluation](#)

4:00 Adjourn

Be careful using other web resources. Online tools don't easily scale and can introduce confusion/frustration into your program

# Developing and Publishing the Workshop Program

- Drawing an Audience
- Creating a Successful Workshop
- Preparing a Lasting Record

## Cathy Manduca and Sharon Mosher's workshop from 2015:

### What does it mean to be a geoscientist? Is there a core curriculum?

Tuesday | 1:30pm-4:00pm | CIRES Fellows Room

Mini Workshop

#### Conveners



[Cathy Manduca](#), Carleton College



[Sharon Mosher](#), University of Texas at Austin, The

Geoscientists work in a very wide range of jobs from exploration geologist, to consulting hydrologist, to environmental regulator, to Earth science teacher and beyond. This workshop will explore what we mean when we say we are preparing geoscientists in our programs. What expertise is core to being a geoscientist? What are the learning outcomes that are common across geoscience programs? Is there a core curriculum that underpins geology and geoscience majors?

#### Goals

- Understand the current range of program level learning outcomes across workshop participants
- Learn about and discuss guidance on the central aspects of a geoscience degree coming from discussions among geoscience educators and with employers
- Reflect on the opportunities and challenges this guidance provides for geoscience programs of different types based on the experiences of the workshop participants
- Craft a summary of what we have learned as a foundation for future discussions

# Cathy Manduca and Sharon Mosher's workshop from 2015

## Program

1:30 Welcome and introductions

1:45–2:15 Core learning outcomes: what is your experience?

This activity will allow participants to share the learning outcomes they expect their graduates to achieve in their own program and compare them with those of other programs. We will leave the activity with an understanding of what is common or ubiquitous as well as ideas for unique new innovations, customizations for local situations, and potential gaps.

- *put each of your program's learning outcomes on a sticky note; - 5 minutes*
- *work in groups of five to organize into common themes - 10 minutes*
- [round robin report out and discussion](#)- 15 minutes

[Outcomes mapping](#) (PowerPoint 2007 (.pptx) 4.6MB Jul13 15)

2:15– 2:30 The nature of geoscience expertise: presentation and questions

This presentation by Cathy Manduca will present a view of what it means to be a geoscientist– what are the essential perspectives or habits of mind that cause one to be recognized as a geoscientist. [Geoscience Expertise](#) (PowerPoint 204kB Jul13 15)

2:30–2:50 Small group discussion of geoscience expertise, how it is encoded in our program level learning outcomes, and the opportunities and challenges afforded by this perspective

2:50–3:00 [Round robin reporting and synthesis](#)

3:00–3:15 break

3:15–3:30 Workforce needs: presentation and questions

This presentation by Sharon Mosher will present a summary of discussions of workforce needs including characterizations of the overall competencies needed by STEM graduates and the results of discussions with geoscience employers. [Workforce needs](#) (PowerPoint 2007 (.pptx) 104kB Jul13 15)

3:30–3:50 Small group discussion of workforce needs, how they are encoded in program level learning outcomes, and the opportunities and challenges afforded by this perspective

3:50–4:15 [Round robin reporting](#) followed by whole group discussion:[What have we learned?](#)

Workshop evaluation

4:15 Adjourn

# Utilizing the Web Tools

## Make use of the workshop website

- Use the program page to organize documents that you would like the participants to access either prior to or during the workshop. Note: we cannot host copyrighted documents on the public program page; work with your support person for work-arounds.
  - Example Program -  
[http://serc.carleton.edu/earth\\_rendezvous/2015/mini\\_workshops/mw4/index.html](http://serc.carleton.edu/earth_rendezvous/2015/mini_workshops/mw4/index.html)
- The website will be a resource that your participants can return to when they want to make use of what they learned.
- Together with your Workshop Summary, the Program is the record of what happened.

## SERC Support Team

**Make use of our expertise.**

***SERC staff have experience supporting, and in many cases leading, online workshops and other professional development activities.***

If you know what you would do in a face-to-face setting and are not sure how to translate it to the online environment, ask your SERC support person what tools and strategies we recommend.

# Preparatory Website Support\*

## Monday Mini-Workshops

- Science News - **Allison**
- Affective Domain - **Bradlee**
- Model-Based Inquiry - **John**
- IDEAS - **Monica**
- Atmospheric Dynamics - **Mitchell**
- Planetary Science - **Allison**
- Examining Student Work -  
**Bradlee**

## Thursday Mini-Workshops

- Geoscience is Elementary - **John**
- Geophysics - **Carol**
- Math and Computation - **Mitchell**
- Curiosity to Question - **Allison**
- Assessment Research - **Bradlee**
- OOI Data Labs - **John**
- Climate Interactive - **Monica**
- Teaching Anthropocene - **Mitchell**

\*These assignments may change for day-of support, but you can contact the person listed here for preparatory support for your mini-workshop. They are also posted on the Convener Info web page.

## Attendance and Email List

- The SERC support person will check attendance in your workshop via Zoom at about the 15 minute mark.
- That attendance will be used to make an email list that will be ready by the end of your workshop.
- Participants will be able to continue discussions via the email list after the workshop.

# Evaluation Instruments

## End of Workshop Evaluation

- Standard form will be provided
- Rate the design
  - Did the workshop meet its goals
  - Overall satisfaction
- Participants will receive a link to the form via the email list during the workshop
- Please set aside the last 10-15 minutes of your program for participants to complete the evaluation.

Data from the End of Workshop Evaluation will be screened by the Evaluation Team to anonymize

## Workshop Summary

- We ask that each team of conveners write a short Workshop Summary documenting the major activities and outcomes of the workshop to be posted on the website.
  - What are the big takeaways that other people should know about?
  - What did the participants gain from the workshop?
- Make use of experiences from the group discussions and notes.
- This report will be added to the workshop website and, along with the Program page, serve as a permanent record of what happened at the workshop.

## Workshop Support

- Get the contact information for your support person including email address and cell phone. They may not be in the session at all times.
- Your support person will generate the email list and send out the email to participants containing the link to the evaluation form.
- Your support person will also be able to help you post materials on your Program page if you need assistance. Please contact them early to make sure there is time for them to help you.

# Technical Details

Each afternoon workshop will have its own Zoom meeting

Workshop leaders will be the meeting hosts

All typical Zoom features will be enabled (screensharing, breakout rooms, chat, whiteboards, polling, etc.)

Meetings will be password protected, and connection information will only be visible to registered Rendezvous participants

Using Zoom to support engaged pedagogies: <https://serc.carleton.edu/241721>

**What is the most challenging thing you need to do to get ready for the workshop?**

Maybe challenge #1 is “find the time” –  
so what’s your challenge #2?

**Type your answer in the chat and we will discuss the priorities from the group**

## Some of the most common challenges

- You don't know who is coming in advance
- This is a really short amount of time (2 ½ hours!)
- Balancing learning and applying
- Creating a record of what happened
- Making time for reflecting

## NAGT Events Code of Conduct

In fulfilling its vision and mission, NAGT promotes, provides, expects and endorses a professional and respectful atmosphere and values a diversity of views and opinions at NAGT supported events and programs. All NAGT meetings and events participants are expected to abide by the NAGT Code of Conduct, which applies in all venues, events, and on-line forums associated with NAGT. This Code of Conduct is intended to align with the American Geosciences Institute's *Statement on Harassment in the Geosciences*. Please read the full [NAGT Code of Conduct Policy](https://nagt.org/nagt/about/code_of_conduct.html) for details.

Questions?