



## GLOBE Virtual Exchange Pilot Study

### UCAR Team:

Alison Mote, Simon Castro-Wooldridge, John Ristvey, Claire Mowry, Grace Crain-Wright

### GLOBE Country Coordinators:

Jennifer Bourgeault and Haley Wicklein, USA

Mariana Savino, Latin America and Caribbean

### GLOBE Educators:

Carey Bryant, GLOBE Educator, USA

Maria Fernanda Kielmanowics, GLOBE Educator, Argentina

Dario Greni Oliverieri, GLOBE Educator, Uruguay

Juan Felipe Restrepo Mesa, GLOBE Educator, Colombia

Ronda Schlumbohm, GLOBE Educator, USA

### GISN Community Members:

Claudia Caro, GISN Community Member, Peru

Yashraj Patil, GISN Community Member, India

Larisa Schelkin, GISN Community Member, USA

Special thanks to Dr. Mike Jabot, SUNY Fredonia for inspiring this project!





## Session Overview

- Pilot Study Goals and Research Questions
- Virtual Exchange Program Overview
- Participants and Preparation
- Summary of Key Findings and Takeaways
- Recommendations for the Future





## Pilot Study Goals

- Increase engagement between classrooms and scientists in multiple GLOBE regions around topics of interest related to the Year of Climate and Carbon (YCC).
- Develop and test a closed-engagement platform for GLOBE classrooms in 2-3 regions to determine engagement potential for use by the GLOBE Community.



## Research Questions

- 1) To what extent does the use of the Empatico platform (i.e. virtual exchanges) increase engagement between other classrooms and scientists?
- 2) How do virtual exchanges enrich understanding of Earth's climate system and use of Green-up/Green-down and other related YCC protocols to answer questions for investigation?
- 3) In what ways do virtual exchanges encourage a sense of empathy and social-emotional learning?







# Virtual Exchange Program Overview

Home Library **Community** Connections

### Complete activities

Engage with your GLOBE partner class and collaborating scientist following the activity sequence below.



#### Hello, GLOBE Community!

Connect with your GLOBE partner class to share information about your local community and local...

AGES 8-14 / 90 MIN ACTIVITY



#### Studying Climate & Carbon

Meet a scientist, learn about their research, and brainstorm research questions related to climate &...

AGES 8-14 / 60-90 MIN ACTIVITY



#### Developing a Research Plan

Develop a research plan to investigate the relationship between carbon & climate in your...

AGES 8-14 / 60 MIN ACTIVITY



#### Present Your Research Plan

Present your research plan to your GLOBE partner class and collaborating scientist.

AGES 8-14 / 60 MIN ACTIVITY



### GLOBE Year of Climate and Carbon Campaign

GLOBE students are invited to consider what environmental changes are emerging in their local ecosystems and how they can pursue further understanding by collecting phenological and biomass data. Students will utilize the Green-up, Green-down and Carbon Cycle protocols that align with the [North America Phenology Campaign](#), the [Trees Around the LAC Campaign](#), the [European Phenology Campaign](#) and other ongoing climate-related GLOBE initiatives across the GLOBE community.

[Learn More](#)

**GLOBE Community Padlet (Empatico) - Map View**

Use this Padlet to collaborate and share information with your GLOBE community. Click on "+" in the bottom right corner and search for your location to add a post to the map. Be sure to include a descriptive title on each post to share information about your GLOBE Community, local environment, research questions, and more with your partner classroom and collaborating scientist. Click on the three lines icon below to expand and minimize this section.

**Start here! Information to share for each collaboration.**

Mesa Laboratory, Boulder, CO  
**Collaboration 1: Hello, GLOBE ...**

Mesa Laboratory, Boulder, CO  
**Collaboration 2: Studying Climat...**



## Classes engaged in four “collaborations” from March – May 2024 Activities were built into the Empatico Platform

### Complete activities

Engage with your GLOBE partner class and collaborating scientist following the activity sequence below.



#### Hello, GLOBE Community!

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AGES 8-14 / 90 MIN ACTIVITY



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#### Present Your Research Plan

Present your research plan to your GLOBE partner class and collaborating scientist.

AGES 8-14 / 60 MIN ACTIVITY



Collaboration 1:  
Get to know your partner class, share info about your community and environment.  
(Synchronous)



Collaboration 2:  
Meet your collaborating scientist and brainstorm research questions.  
(Asynchronous)



Collaboration 3:  
Develop a research plan and share your study site with your partner class.  
(Asynchronous)



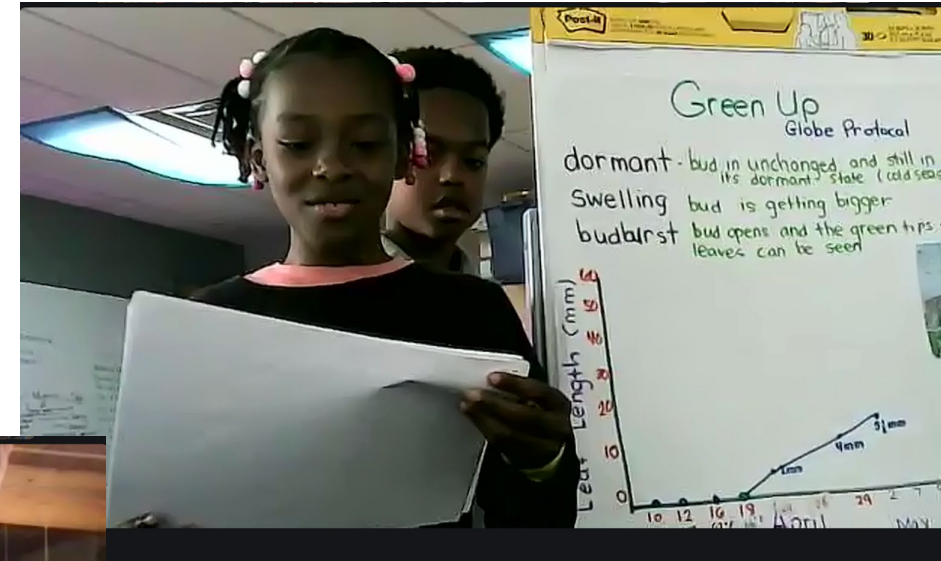
Collaboration 4:  
Present your research plan to your partner class and collaborating scientist.  
(Synchronous)







## Virtual Exchange Participants and Preparation





- Preparation:

- Educator Orientation (1 hr)
- Scientist Orientation (1 hr)
- Scheduling (Ad hoc)
- Virtual Exchange Preparation

Classroom Pair	Grade/Age	Location	GISN Scientist Collaborator
Dario Greni Oliveri and Ronda Schlumbohm	Ages 11-14 and 8-11	Uruguay and Alaska	Larisa Schelkin
Dario Greni Oliveri and Carey Bryant	Ages 11-14 and 8-11	Uruguay and Ohio	Larisa Schelkin and Yashraj Patil
Maria Fernanda Kielmanowicz and Juan Felipe Restrepo	Ages 14-18	Argentina and Colombia	Claudia Caro





## Pilot Study Metrics and Lessons Learned

“It got me more excited about what we've been doing all year in GLOBE and all of our protocols, but it also got my students more excited.”  
~ GLOBE Educator

“I really liked these meetings because I like to get to know their cultures and my favorite part is talking about our work and asking questions.”  
~ GLOBE Student

The overall experience I would say just mind blowing and amazing!! I was so excited with every meet, an amazing opportunity to leverage my STEM Diplomacy and Research Skills.”  
~ GISN Community Member



## Summary of Key Findings and Takeaways

- Educators involved in the pilot were experienced GLOBE educators, with 11 to 25+ years of teaching experience and 4 to 10+ years of GLOBE teaching experience.
- The four-collaboration activity sequence was easy to use and integrate into existing curriculum.
- The virtual exchanges increased student engagement and interest (RQ1).
- Students were excited to learn about other cultures, share their projects, and ask questions of other students and scientists (RQ1).

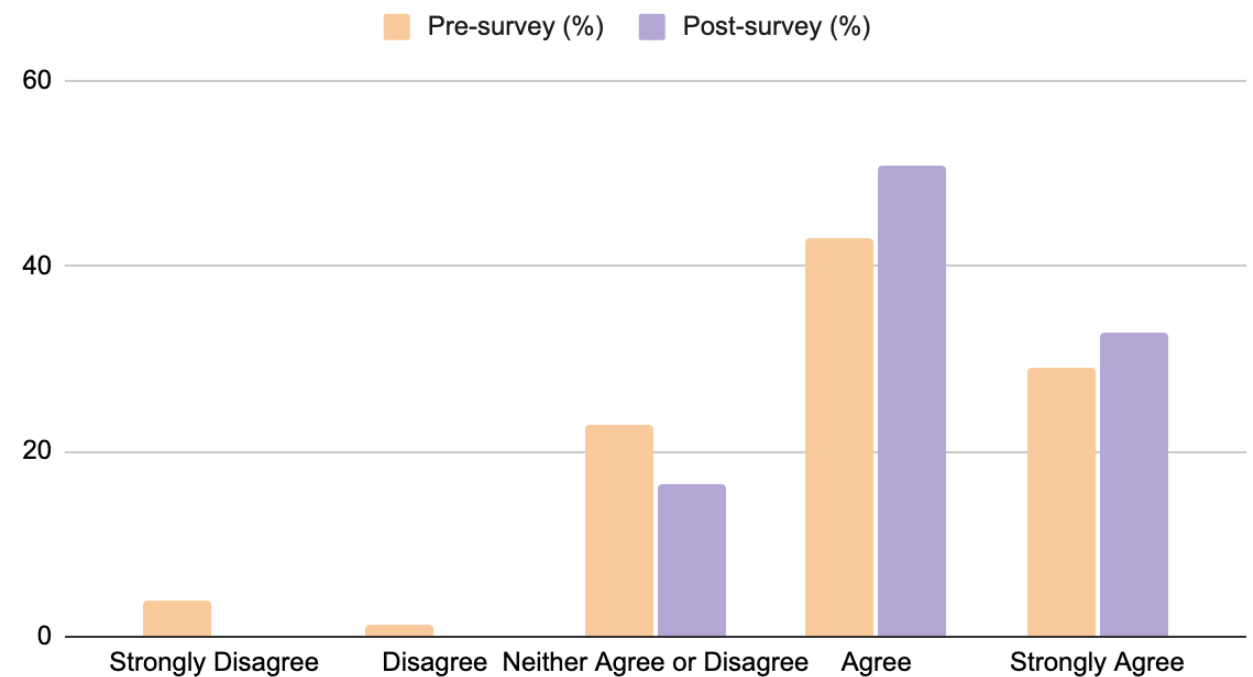




## Summary of Key Findings and Takeaways

- Students benefited from sharing GLOBE research and asking questions with their partner class (RQ2).

I can think of different ways to solve an environmental problem.



Pre-survey n=79, Post-survey n=55, p-value = 0.009

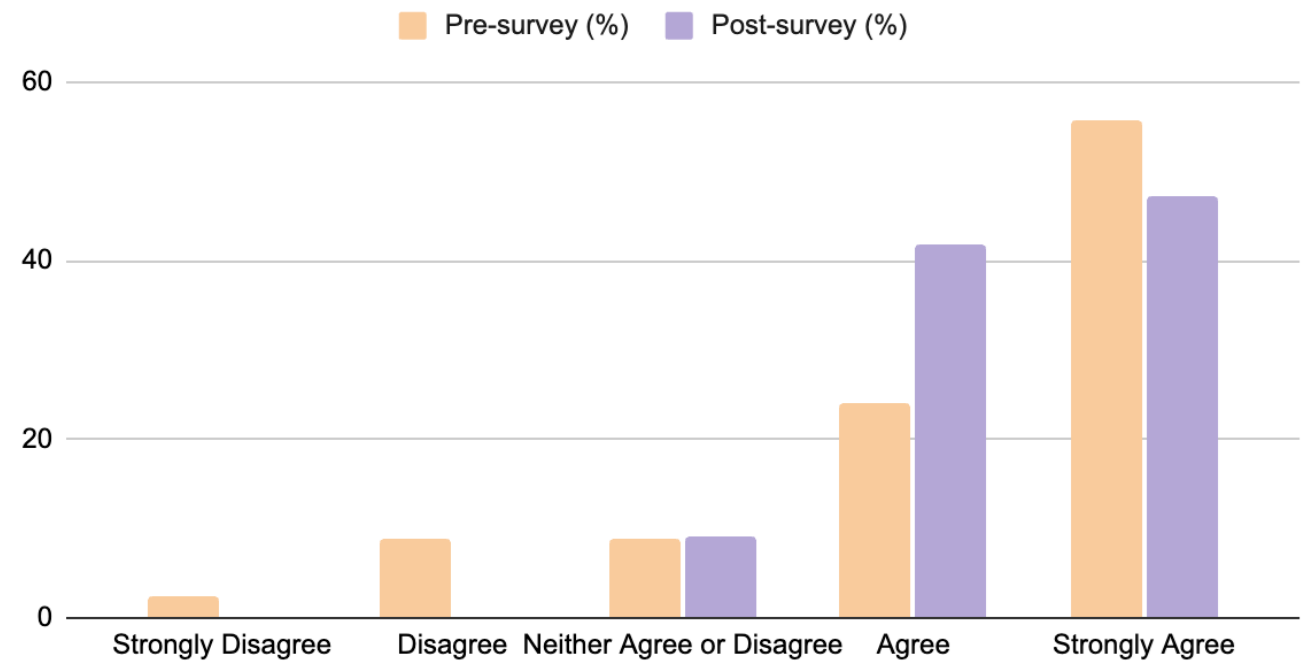




## Summary of Key Findings and Takeaways

- Students enjoyed learning about different cultures and environments from each other (R Q3).

I like to learn about people from other cultures in order to work together.



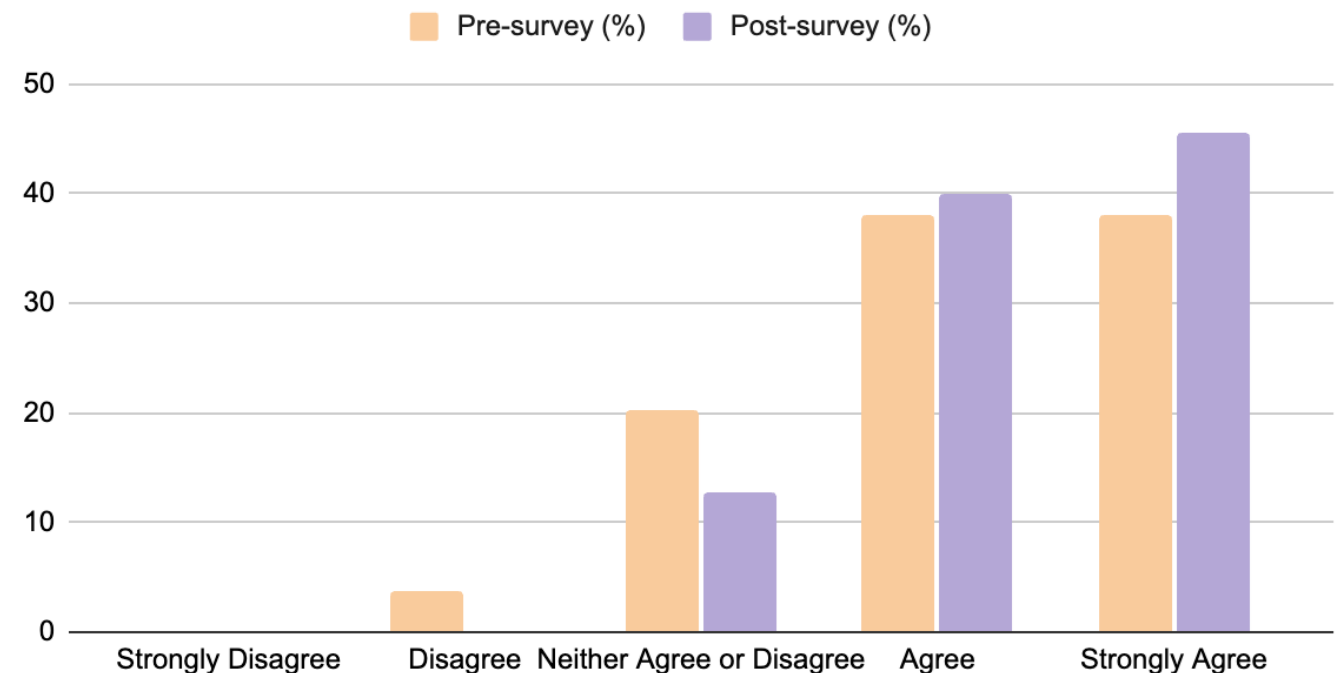
Pre-survey n=79, Post-survey n=55; p-value = 0.0004



# Summary of Key Findings and Takeaways

- Students enjoyed learning about different cultures and environments from each other (R Q3).

I can work productively with people whose cultural backgrounds are different from mine.



Pre-survey n=79, Post-survey n=55; p-value = 0.03



## Summary of Key Findings and Takeaways: Recommendations for the Future

- More time is needed for students to develop research projects and analyze and share data with their partner class and scientists.
- Scheduling was the most challenging aspect of virtual exchanges, especially across time zones. A longer collaboration period could help alleviate scheduling challenges.
- When pairing classes, it is important to consider class meeting schedules.
- Explore options for other closed-platform programs to schedule and conduct virtual exchanges.
- Educators appreciated GIO support in establishing partnerships with other educators and GISN community members.







“I think the experience was great. The students saw the videos of the scientists and then asked questions. The scientist answered the students directly and the students were able to take advantage of this opportunity.

The students talked about videos, then the scientist came into the class. They ran out of time talking so much! It was a great time for students.”

~GLOBE Educator





## Existing Collaboration Channels through GLOBE.gov

THE GLOBE PROGRAM A Worldwide Science and Education Program

About / Join Training Do GLOBE GLOBE Data Community News and Events Support

Home > Community > Find a Project Collaborator

### Find a Project Collaborator

Use this tool to find GLOBE community members who are interested in collaborating on GLOBE projects, protocols or other activities.

On the search results page, you can select a person's name or organization to learn more about them. If you'd like to collaborate, select 'Request Friend' next to the person's name. This will send an email to the member asking if they'd like to collaborate. If they approve your request, you will receive an email confirming they have accepted your invitation. As friends, you'll see an email link on their My Page and will have access to their message board (or Wall). If you have additional questions, please contact our [help desk](#).

Close Search Filter

Apply My Profile Settings

For the drop-down menu filters, multiple items can be selected by using CTRL-click.

User Type:

- Any User Types
- STEM Network (Scientists)
- Teachers
- Alumni

Who Speaks:

- Any Language
- Arabic (العربية)

Investigation Areas/Protocols

Search for community members that are interested in: any protocol checked

Atmosphere

- Aerosols
- Air Temperature
- Barometric Pressure
- Clouds

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Home > North America > North America Phenology Campaign > Collaboration

### Collaboration

The resources below support students and educators in engaging and collaborating around phenology with another school/organization.

#### How does it work?

1. Indicate that you are interested in collaboration on the [Campaign registration form](#).
2. The North America Regional Office will match you with another educator who is also interested in collaboration and works with a similar age group.
3. Contact the educator you have been matched with to decide what type of collaboration(s) you would like to do.

#### GLOBE Virtual Exchange Toolkit

An excellent resource with guidelines, principles, and technical guidance to help you design and implement a virtual exchange with other GLOBE participants. This toolkit was developed by the Bureau of Educational and Cultural Affairs Collaboratory to support virtual exchange programming for members of the GLOBE Program.

[See the Toolkit](#)

- North America Phenology Campaign
- Protocol Tutorials
- Resources
- Plant Color Guides
- Learning Activities
- Scientist Q&A Videos
- Webinars
- Collaboration
- Analyzing and Communicating Data
- FAQ

GLOBE.gov → Community → Find a Project Collaborator

GLOBE.gov → North America → North America Phenology Campaign → Collaboration



# GLOBE Virtual Exchange Toolkit

### GLOBE Mosquito Project

Why Study Mosquitoes?

The GLOBE Observer App

Collecting and Using Data

Resources For Students and Teachers

For Country Coordinators and Trainers

Apply for a Local Mosquito Workshop

Community Resources & Discussion Forums

Events

FAQs

GLOBE Virtual Exchange Toolkit Pilot Program Information

IVSS and Zika Project

## The GLOBE Program - Virtual Exchanges

### About Virtual Exchanges

Virtual exchanges can help facilitate:

- connecting you and your students virtually with other educators / students about your GLOBE research and other activities
- learning what GLOBE schools in other parts of the world or your country are doing
- developing and conducting a collaborative GLOBE research project that enables your students to compare and analyze environmental conditions in different locations
- connecting virtually with other members of the GLOBE community to learn about their history and culture and sharing yours

### How to Conduct a Virtual Exchange Program



### Resources

A detailed Virtual Exchange Toolkit outlining steps, program ideas, and a sample timeline is available below. Adjust as needed to meet your objectives.



In addition, you are able to download GLOBE certificate templates [here](#) in PPT format, that could be provided to students upon completion of a Virtual Exchange!

<https://www.globe.gov/web/globe-mosquito-project/overview/globe-virtual-exchange-toolkit-pilot-program-information>





Alison Mote  
[amote@ucar.edu](mailto:amote@ucar.edu)

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For more information visit [www.globe.gov](http://www.globe.gov)

