

# 12<sup>th</sup> Annual Rising Voices Workshop

## *Co-creating Research, Policy, and Action: The Rising Voices of Indigenous Peoples and Partners in Weather and Climate Science*

RISING VOICES CENTER FOR INDIGENOUS AND EARTH SCIENCES

Hybrid: In-person Boulder, CO and Virtual

May 6—8, 2024



# WORKSHOP PACKET

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## QUICK REFERENCE AGENDA

DAY 1 – Monday, May 6, 2024							
Session	Time Zone	Hawaii Time	Alaska Time	Pacific Time	Mountain Time	Central Time	Eastern/ Puerto Rico Time
Opening Ceremony		5:00AM	7:00AM	8:00AM	9:00AM	10:00AM	11:00AM
Welcome to Place		5:20AM	7:20AM	8:20AM	9:20AM	10:20AM	11:20AM
Welcome to the Workshop		5:30AM	7:30AM	8:30AM	9:30AM	10:30AM	11:30AM
Welcome to NSF NCAR		5:50AM	7:50AM	8:50AM	9:50AM	10:50AM	11:50AM
Rising Voices video		6:00AM	8:00AM	9:00AM	10:00AM	11:00AM	12:00PM
Setting the framework		6:15AM	8:15AM	9:15AM	10:15AM	11:15AM	12:15PM
Introductions		6:20AM	8:20AM	9:20AM	10:20AM	11:20AM	12:20PM
<i>Break</i>		<i>6:45AM</i>	<i>8:45AM</i>	<i>9:45AM</i>	<i>10:45AM</i>	<i>11:45AM</i>	<i>12:45PM</i>
Planting the seed conversation		7:00AM	9:00AM	10:00AM	11:00AM	12:00PM	1:00PM
Group Dialogues		8:10AM	10:10AM	11:10AM	12:10PM	1:10PM	2:10PM
<i>Group photo</i>		<i>8:30AM</i>	<i>10:30AM</i>	<i>11:30AM</i>	<i>12:30PM</i>	<i>1:30PM</i>	<i>2:30PM</i>
<i>Lunch</i>		<i>8:40AM</i>	<i>10:40AM</i>	<i>11:40AM</i>	<i>12:40PM</i>	<i>1:40PM</i>	<i>2:40PM</i>

Examples of justice-centered intercultural collaborations in climate research and action	9:30AM	11:30AM	12:30PM	1:30PM	2:30PM	3:30PM
Building relationships and trust conversation	9:45AM	11:45AM	12:45PM	1:45PM	2:45PM	3:45PM
<i>Transition to working groups – topics</i>	10:35AM	12:35PM	1:35PM	2:35PM	3:35PM	4:35PM
Working Groups – Topics	10:45AM	12:45PM	1:45PM	2:45PM	3:45PM	4:45PM
<i>Break</i>	<i>1:00PM</i>	<i>2:00PM</i>	<i>3:00PM</i>	<i>4:00PM</i>	<i>5:00PM</i>	<i>6:00PM</i>
Initial Reflections – Topics' Working Groups	12:15PM	2:15PM	3:15PM	4:15PM	5:15PM	6:15PM
Wrap up Day 1 / Tribute to RV co-founders	12:45PM	2:45PM	3:45PM	4:45PM	5:45PM	6:45PM
<b>EVENING</b> <b>Annual Bob Gough-fest, "Climate change is inevitable, adaptation is optional"</b> <i>(in-person)</i>						
The Bob Gough Award for Climate Justice in Action  Dinner	5:15PM Mountain Time at Foothills Lab					

<b>DAY 2 – Tuesday, May 7, 2024</b>							
<b>Session</b>	<b>Time Zone</b>	<b>Hawaii Time</b>	<b>Alaska Time</b>	<b>Pacific Time</b>	<b>Mountain Time</b>	<b>Central Time</b>	<b>Eastern/ Puerto Rico Time</b>
Welcome to the Day		5:00AM	7:00AM	8:00AM	9:00AM	10:00AM	11:00AM
Process Day 2		5:10AM	7:10AM	8:10AM	9:10AM	10:10AM	11:10AM
Research, Policy, and Action: Scaling Across Governance Systems conversation		5:15AM	7:15AM	8:15AM	9:15AM	10:15AM	11:15AM
Group Dialogues		6:15AM	8:15AM	9:15AM	10:15AM	10:55AM	11:55AM
<i>Break &amp; Transition to topics' working groups</i>		<i>6:35AM</i>	<i>8:35AM</i>	<i>9:35AM</i>	<i>10:35AM</i>	<i>11:35AM</i>	<i>12:35AM</i>
Working Groups – Topic		7:00AM	9:00AM	10:00AM	11:00AM	12:00PM	1:00PM
<i>Lunch</i>		<i>8:15PM</i>	<i>10:15AM</i>	<i>11:15AM</i>	<i>12:15PM</i>	<i>1:15PM</i>	<i>2:15PM</i>
Storytelling & digital technology demonstration		9:15AM	11:15AM	12:15PM	1:15PM	2:15PM	3:15PM

World Café & Posters	9:30AM	11:30AM	12:30PM	1:30PM	2:30PM	3:30PM
<i>Transition to working groups – regions</i>	<i>10:30AM</i>	<i>12:30PM</i>	<i>1:30PM</i>	<i>2:30PM</i>	<i>3:30PM</i>	<i>4:30PM</i>
Working Groups – Regions	10:40AM	12:40PM	1:40PM	2:40PM	3:40PM	4:40PM
<i>Break</i>	<i>12:00PM</i>	<i>2:00PM</i>	<i>3:00PM</i>	<i>4:00PM</i>	<i>5:00PM</i>	<i>6:00PM</i>
Initial Reflections – Regions’ Working Groups	12:15PM	2:15PM	3:15PM	4:15PM	5:15PM	6:15PM
Wrap up Day 2	12:45PM	2:45PM	3:45PM	4:45PM	5:45PM	6:45PM

Day 3 – Wednesday, May 8, 2024							
Session	Time Zone	Hawaii Time	Alaska Time	Pacific Time	Mountain Time	Central Time	Eastern/ Puerto Rico Time
Welcome to the Day		5:00AM	7:00AM	8:00AM	9:00AM	10:00AM	11:00AM
Process Day 3		5:10AM	7:10AM	8:10AM	9:10AM	10:10AM	11:10AM
Localizing Rising Voices: Next steps, actions, and commitments		5:15AM	7:15AM	8:15AM	9:15AM	10:15AM	11:15AM
<i>Break</i>		<i>6:15AM</i>	<i>8:15AM</i>	<i>9:15AM</i>	<i>10:15AM</i>	<i>11:15AM</i>	<i>12:15PM</i>
Localizing Rising Voices: Next steps, actions, and commitments		6:30AM	8:30AM	9:30AM	10:30AM	11:30AM	12:30PM
Growing Our Garden: Closing Reflections		7:10AM	9:10AM	10:10AM	11:15AM	12:10PM	1:10PM
Closing Ceremony		7:45AM	9:45AM	10:45AM	11:45AM	12:45PM	1:45PM

# WORKSHOP LOCATION

NSF NCAR’s Center Green Campus (3080 Center Green Drive, Boulder)

# WORKSHOP ZOOM LINK FOR EACH DAY

(Virtual Participation)

<https://ucar-edu.zoom.us/j/97785518462?pwd=WnlZU0QzNUZpUUtudnM0YjJ6OC9KZz09>

Passcode: rising2024

Contact for any issues getting into the Zoom-room: [ktavarez@ucar.edu](mailto:ktavarez@ucar.edu)

# THE RISING VOICES CENTER FOR INDIGENOUS AND EARTH SCIENCES

[The Rising Voices Center for Indigenous and Earth Sciences](#) (RV) facilitates intercultural, relational-based approaches for understanding and adapting to extreme weather and climate events, climate variability, and climate change. RV supports a growing network of Indigenous, tribal and community leaders, atmospheric, social, biological and ecological scientists, students, educators and experts from around the world. At its core, Rising Voices aims to advance science through [collaborations](#) that bring Indigenous and Earth sciences into partnership, provides [opportunities](#) for Indigenous students and early career scientists through scientific and community mentoring, and [supports](#) adaptive and resilient communities through sharing scientific capacity.

Rising Voices' mission is to center relationships to interweave Indigenous and institutional approaches to Earth Sciences. In this way, we cultivate more inclusive innovative responses to extreme weather, water, and climate change impacts. Our Vision is to see Indigenous and institutional collaborations that uplift a climate resilient and justice-forward world for all generations. This includes envisioning collaborative research that brings together Indigenous knowledge and science with Earth sciences in a respectful and inclusive manner to achieve culturally relevant and scientifically robust climate and weather actions. In doing so, Rising Voices seeks to advance science, remove the boundaries between science and society, and create innovative partnerships among collaborators with diverse disciplinary and cultural backgrounds to support adaptive and resilient communities.

RV is co-administered by the University Corporation for Atmospheric Research/National Center for Atmospheric Research (UCAR|NCAR) and the Livelihoods Knowledge Exchange Network (LiKEN) in partnership with Haskell Indian Nations University, National Oceanic and Atmospheric Administration's (NOAA) Office for Coastal Management, NSF National Ecological Observatory Network (NEON), and the Indigenous Speaker Series.

The Rising Voices Center for Indigenous and Earth Sciences is entering an exciting, emerging new phase, as we work to pivot into a more place-based, actionable science initiative for intercultural climate collaborations and collaboratively work together to move from a decade+ of Rising Voices' recommendations into action and commitment. At this significant juncture as Rising Voices transitions into its next phase, it's important to reflect on where we've been, to set a path forward for where we will go. Thank you to all of you for being part of, and shaping, this journey.

About Rising Voices: [Website](#), [Introductory video](#), link to [previous workshops](#)  
Contact: [risingvoicescontact@ucar.edu](mailto:risingvoicescontact@ucar.edu)

# THE 12<sup>TH</sup> ANNUAL RISING VOICES WORKSHOP

## Co-creating Research, Policy, and Action: The Rising Voices of Indigenous Peoples and Partners in Weather and Climate Science

### The RV12 Workshop Theme

In 2013, the first Rising Voices workshop at the National Center for Atmospheric Research (NCAR) asked: *What are the elements of successful co-production of science and policy in the related fields of extreme weather and climate change?* Over a decade later, engaging both Indigenous and colonial Earth sciences to address climate change challenges is increasingly accepted and promoted within mainstream scientific enterprises. Funding agencies and institutions are increasingly requiring “meaningful community engagement” for research proposals and the “co-production of knowledge” is the term du jour in climate science research.

*“The urgent threat posed by our climate crisis necessitates innovative actions. Innovation is an opportunity to look beyond Earth sciences to solutions in other knowledge systems and, in doing so, to support the rising voices of those who have been historically marginalized.”*

– Lazrus et al., 2022

In this context, and building from the Rising Voices’ [Declaration on Relationships and the Wise Use and Applications of Technologies for Climate Actions for Everyone](#), we’re poised to learn from where we’ve been and grow into where we’re going. How can we work to better advance science, remove the boundaries between science and society, and create innovative partnerships among collaborators with diverse disciplinary and cultural backgrounds to support adaptive and resilient communities, and to achieve culturally relevant and scientifically robust climate and weather actions?

This workshop will bring participants together to work on proposed pathways and guidelines for intercultural collaborations for co-created, place-based Earth systems science research, policy, practice, and action. The focus will include the:

- Rising Voices’ core priorities: (1) advancing science through collaborations that bring Indigenous and Earth sciences into partnership; (2) create opportunities for Indigenous students and early career scientists through scientific and community mentoring, and (3) support adaptive and resilient communities through sharing scientific capacity.
- Topics: Community relocation/site expansion; Education, Communication, Training, & Outreach; Energy Systems; Food Systems; Human Health; Phenology; and Water Systems.

- Regions: Pacific Coastal (Pacific Islands, Alaska, Northwest); Grass/shrub/arid lands (Southwest, Plains/North Central, South Central); Deciduous Forests (Midwest/Great lakes, Northeast); Atlantic Coastal (Gulf Coast, Southeast, Caribbean Islands, Northeast)

The Rising Voices Center serves as connective webbing, creating linkages and space for new collaborations to have their own life. This workshop focus is in direct response from requests by Rising Voices participants to initiate more regional and place-based work for a process of co-learning together.

**The objective is to:**

***Develop general guidelines, principles, and evaluative processes that can be adapted for place-based intercultural collaborations in support of climate actions and the initiation of such collaborations in the relationship building phase.***

As Rising Voices is working to pivot into a more place-based, actionable science initiative for intercultural climate collaborations, the goal of this convening is to build from long-standing engagement to collaboratively work together to move from a decade+ of Rising Voices' recommendations into action and commitment.

## RV12 Planning Team

Paulette Blanchard, Ava Hamilton, Katie Jones, Julie Maldonado, Shantel Martinez, Michelle Montgomery, Tim Schneider, Diamond Tachera, Bill Thomas, Daniel Wildcat

## Acknowledgments

The RV12 workshop would not be possible without our supporting institutions and the people who champion RV: University Corporation for Atmospheric Research and the NSF National Center for Atmospheric Research (UCAR and NSF NCAR), Livelihoods Knowledge Exchange Network (LiKEN), National Oceanic and Atmospheric Administration Office of Coastal Management (NOAA-OCM), Haskell Indian Nations University, NSF National Ecological Observatory Network (NEON), and the Indigenous Speaker Series. Our deepest gratitude to the Lomikai Media and Olohana Foundation team and the NSF NCAR media team for their leadership and making it possible for us all to come together, both in-person and virtually. We are also deeply grateful to the numerous individuals who have helped support, plan, and participate in the RV12 workshop. And always, to Heather Lazrus and Bob Gough, Rising Voices co-founders, who continue to guide our hearts and actions every step of the way.

## Community agreements

(1) [Rising Voices Ethics Guidelines](#), (2) [UCAR/NCAR Participant Code of Conduct](#); (3) [Workshop Report and Outcomes](#)

## A safe, courageous, and welcoming environment

UCAR/NCAR strives to ensure a safe and welcoming environment for everyone. Please let us know if you have any accessibility needs that we need to consider when arranging workshop accommodations. If you have concerns or requests related to this please don't hesitate to get in touch with Cam Brinkworth, UCAR's Chief Diversity, Equity & Inclusion Officer at [carolyn@ucar.edu](mailto:carolyn@ucar.edu).

## Rising Voices Ethics Guidelines

~ We come here with curious minds & open hearts ~

The Rising Voice Ethics Guidelines are a supplement to the UCAR/NCAR Participant Code of Conduct. It provides a starting point and considerations for good practices when working in intercultural spaces.

- We value a diversity of views and opinions – speak without judgment or argument.
- Share the Air – we all have something to learn and something to share.
- Be considerate, respectful, and collaborative in speaking and listening.
- Please respect the diversity of knowledges articulated at Rising Voices.
- Alert UCAR staff if you notice a dangerous situation or someone in distress.
- Meetings should take place onsite or in public spaces, not in private spaces such as hotel rooms.
- Please respect good practices for intercultural collaborations, for example, the Research Ethics: A Source Guide to Conducting Research with Indigenous Peoples.
- Knowledge shared at RV workshops should only be used if collaborators follow the full processes of collaboration outlined in the Research Ethics: A Source Guide to Conducting Research with Indigenous People.
- Be respectful and aware of diverse experiences and histories as current relationships and collaborations are shaped by settler-colonial histories.
- Do not appropriate or plagiarize knowledge shared during Rising Voices or future collaborations

## UCAR & NSF NCAR Participant Code of Conduct

University Corporation for Atmospheric Research (UCAR) is committed to providing a safe, productive, and welcoming environment for all meeting participants and UCAR staff. All participants, including, but not limited to, attendees, speakers, volunteers, exhibitors, UCAR staff, service providers, and others are required to abide by the UCAR Meetings Code of Conduct. This Code of Conduct is adapted from the one adopted by the AGU, and applies to all UCAR meeting-related events, including those sponsored by organizations other than UCAR but held in conjunction with UCAR events, in public or private facilities.

### **Expected Behavior**

- Treat all participants, attendees, UCAR staff, and vendors with respect and consideration, valuing a diversity of views and opinions.
- Be considerate, respectful, and collaborative.
- Communicate openly with respect for others, critiquing ideas rather than individuals.
- Be mindful of your surroundings and of your fellow participants. Alert UCAR staff if you notice a dangerous situation or someone in distress.
- Respect the rules and policies of the meeting venue, hotels, UCAR contracted facility, or any other venue.
- Respecting people's ideas as their intellectual property and always giving appropriate attribution.

### **Unacceptable Behavior**

- Harassment, intimidation, or discrimination in any form, including, but not limited to, verbal comments related to gender, gender identity and expression, sexual orientation, disability, physical appearance, body size, race, religion, national origin; inappropriate use of nudity and/or sexual images in public spaces or in presentations, or threatening or stalking any attendee, speaker, volunteer, exhibitor, UCAR staff member, service provider, or other meeting guest.
- Physical or verbal abuse of any attendee, speaker, volunteer, exhibitor, UCAR staff member, service provider, or other meeting guest.
- Recording another individual's presentation without their explicit permission.
- Disruption of talks at oral or poster sessions, in the exhibit hall, or at other events organized by UCAR at the meeting venue, hotels, or other UCAR-contracted facilities.

### **Consequences**

- Anyone requested to stop unacceptable behavior is expected to comply immediately.
- UCAR staff (or their designee) or security may take any action deemed necessary and appropriate, including immediate removal from the meeting without warning or refund.
- UCAR reserves the right to prohibit attendance at any future meeting.
- Notification of an infraction to a Home Institution. In cases where there has been a code of conduct violation and the violation has caused serious personal and/or professional harm, the Home Institution of the Offender may be notified of an infraction resulting from a complaint to UCAR.

### **Reporting Unacceptable Behavior**

If you or someone you know is subject to unacceptable and/or unwelcome behavior, or have any other concerns, please contact a member of conference staff immediately. The on-duty points of contact for this meeting are:

- Cam Brinkworth ([carolyn@ucar.edu](mailto:carolyn@ucar.edu))
- Julie Maldonado ([jmaldonado@likenknowledge.org](mailto:jmaldonado@likenknowledge.org))
- Diamond Tachera ([diamondt@ucar.edu](mailto:diamondt@ucar.edu))
- Katie Jones ([kjones@battelleecology.org](mailto:kjones@battelleecology.org))

The on-duty team is partnering with Lameece Erwin (lerwin@ucar.edu, w: 303-497-8711) and Neil Barker (nbarker@ucar.edu, w: 303-497-8721) in UCAR's Human Resources Department; Cam Brinkworth, UCAR's Chief Diversity Officer (carolyn@ucar.edu); and Bob Wiley in UCAR's Health, Environment and Safety & Security Office (rwiley@ucar.edu; w: 303-497-8554) to respond to any issues that arise.

## Workshop Report & Intended Outcomes

As with previous RV workshops, one key outcome of the workshop is fostering new and existing relationships to facilitate collaborations between Indigenous and Earth sciences in response to the climate crises. All of the workshop activities will yield notes and transcripts to be developed into a summary workshop report and continuing to develop a set of guidelines to consider for centering justice in convergence research, which will be shared publicly on the Rising Voices website and shared with the Rising Voices listserv and all workshop participants.

The intention of the RV12 planning team is to work with the editors of a special issue of a peer-reviewed journal to publish these guidelines in a format where they can reach a broader audience, extending the reach of the RV12 workshop into communities, classrooms, research sites, and board rooms. The goal is to create, collectively, something that's actionable beyond the workshop for a justice-forward approach to addressing the climate crisis and supporting future generations in a changing climate.

**Recordings:** The plenary sessions (welcome, speakers, and share-out reflections) will be recorded (with speakers' permission) and posted on the Rising Voices website, as well as inform the report.

**Notes:** Breakout sessions will NOT be video or audio recorded, but there will be detailed notes taken during the breakout sessions. A notetaker will capture the conversation for reporting back to the full group of participants and for the workshop report. If you would like to share something during the session that you do not want included in the notes, you may let the facilitator and notetaker know that your comment is not to be included in the notes, report-out, and/or workshop report. You may also ask that any information shared remain anonymous, or if you would like it specifically attributed. At any point in time, you may request for information shared to be deleted from the notes or shared online workspaces. Any such requests will be respected. Any specific information with attributions or direct quotations will only be included in the report with permission.

**Shared documents:** At times, workshop participants will be asked to contribute to a shared digital interactive workspace. Contributions in the shared documents may also be used to inform the workshop report.

Review: Participants will be able to review the draft workshop report before it is posted on the Rising Voices website or shared with the network. The draft report will be shared through the email addresses of participants included in their registration. Responsibility for the final draft of the report rests exclusively with the authors.

Post-workshop survey: Participants will be asked to complete a short survey for feedback on the workshop.

Contact: Please contact [risingvoicescontact@ucar.edu](mailto:risingvoicescontact@ucar.edu) with any questions or comments about the report, outcomes, or other comments.

*\* Thank you to the organizers of the 2021 Coastal Biocultural Restoration as a Nexus for Innovation Workshop for their permission to adapt The Workshop Report and Outcomes consent.*

## RV12 WORKSHOP TECHNOLOGY

The RV12 workshop will be held as a Hybrid event, both in-person in Boulder, CO at NSF NCAR's Center Green Campus (3080 Center Green Drive, Boulder) and virtually using Zoom, an online platform.

For those participating virtually, the link below will be the Zoom-link for the duration of the workshop. We will also use Jamboards for participants to engage.

### Workshop zoom-link for each day:

<https://ucar-edu.zoom.us/j/97785518462?pwd=WnlZU0QzNUZpUUtudnM0YjJ6OC9KZz09>

Passcode: rising2024

## RV12 FULL WORKSHOP AGENDA

### **Day 1: Monday, May 6, 9:00AM--5:00PM Mountain Time**

Location: NSF NCAR's Center Green Campus (3080 Center Green Drive, Boulder)

8:00: Orientation for 1<sup>st</sup> time RVers/students (optional)

8:30: Coffee & Tea at NCAR Center Green

9:00: Opening Ceremony – Steven LaPointe

9:20: Welcome to Place – Ava Hamilton

9:30: Welcome to the 12th Annual Rising Voices Workshop and Workshop Overview

9:50: Welcome to NSF NCAR – Gretchen Mullendore

- 10:00: Rising Voices Introduction Video
- 10:15: Setting the framework: Where we've been, where we're aiming to go
- 10:20: Introductions
- 10:45: *Break*
- 11:00: Planting the seed: Connections, Opportunities, and Engagement  
 Shantel Martinez (moderator), Paulette Blanchard, Diamond Tachera, Bill Thomas, Tyler Moore, Daniel Wildcat, Corinne Salter
- 12:10: Group dialogues
- 12:30: *Group photo (outside)*
- 12:40: *Lunch (mentoring relationships - grab food and connect together at tables outside)*
- 1:30: Examples of intercultural collaborations that center justice in climate research and action – inspiration for what's possible!
- 1:45: Building relationships and trust: Scientific collaboration responding to communities' needs - building air quality sensors in Lahaina  
 Diamond Tachera (moderator), Keahi Tajon, Maraya Ben-Joseph, Agbeli Ameko, Keith Maull
- 2:35: *Transition to Working Groups - Topics*
- 2:45: Working Groups – Topics  
 Participants will select one topic to join: Community relocation/site expansion; Education, Communication, Training, & Outreach; Energy Systems; Food Systems; Health; Phenology; Water Systems.
- 4:00: *Break*
- 4:15: Share-out: initial reflections from Topics' groups  
 Developing guidelines, principles, and evaluative processes that can be adapted for place-based intercultural collaborations in support of climate actions and collaborations in the relationship building phase
- 4:45: Wrap-up Day 1; What's coming up next  
 Tribute to RV co-founders, Heather Lazrus and Bob Gough

**Evening: Monday, May 6, 5:15--7:30PM Mountain Time**

**The annual Bob Gough-fest, "Climate Change is Inevitable, Adaptation is Optional"**

Location: *In-person*; NSF NCAR & UCAR Foothills Laboratory (3450 Mitchell Ln, Boulder)

5:15: The Bob Gough Award for Climate Justice in Action

5:30: Dinner and conversation around the firepit

## **Day 2: Tuesday, May 7, 9:00AM--5:00PM Mountain Time**

Location: NSF NCAR's Center Green Campus (3080 Center Green Drive, Boulder)

9:00: Welcome to the Day

9:10: Recap of Day 1/Process Day 2

9:15: Research, Policy, and Action: Scaling across governance systems

Aranzazu Lascurain (moderator), Ramsay Taum, Chief Deme Naquin, Jainey Bavishi

10:15: Group dialogues

10:35: *Break & Transition to Working Groups - Topics*

11:00: Working Groups – Topic

Participants will stay in their same topic group from the prior day: Community relocation/site expansion; Education, Communication, Training, & Outreach; Energy Systems; Food Systems; Health; Phenology; Water Systems

12:15: *Lunch*

1:15: Storytelling & digital technology demonstration - Chris Shaeffer, Lomikai Media

1:30: World Café & Poster “walk”

Participants will engage in conversations with representatives from various organizations, programs, and networks and with poster author(s) to learn about their programming and work.

2:30 *Transition to working groups - regions*

2:40: Working Groups by Region

Participants will select one region to join: Atlantic Coastal (Gulf Coast, Southeast, Caribbean Islands, Northeast); Deciduous Forests (Midwest/Great lakes, Northeast); Grass/shrub/arid lands (Southwest, Plains/North Central, South Central); Pacific Coastal (Pacific Islands, Alaska, Northwest)

4:00: *Break*

4:15: Share-out: initial reflections from Regional groups

Developing guidelines, principles, and evaluative processes that can be adapted for place-based intercultural collaborations in support of climate actions and collaborations in the relationship building phase

4:45: Wrap-up Day 2; What's coming up next

## **Day 3: Wednesday, May 8, 9:00AM--12:00PM Mountain Time**

Location: NSF NCAR's Center Green Campus (3080 Center Green Drive, Boulder)

8:30: *Coffee & Tea at NSF NCAR Center Green*

9:00: Welcome to the Day

9:10: Recap of Day 2 / Process Day 3 & Focused goal of today

9:15: Localizing Rising Voices: Next steps, actions, and commitments

*Share reflections from Topics & Regional Groups – develop draft guidelines, principles, and evaluative processes that can be adapted for place-based intercultural collaborations in support of climate actions and collaborations in the relationship building phase*

10:15: Break

10:30: Localizing Rising Voices: Next steps, actions, and commitments (continued)

11:15: Growing Our Garden: Closing Reflections

Annette Woolley, Cameran Bahnsen, Shelby Ross

11:45: Closing Ceremony – Steven LaPointe

## Working Groups

Day 1 (2:45-4:00 Mountain Time) and Day 2 (11:00-12:15 Mountain Time) of the workshop will include sessions for Working Groups by Topic; Day 2 will also include a session for Working Groups by Region (2:40-4:00 Mountain Time). The working groups will be facilitated discussions focused on co-creating research, policy, and action.

### Topics' Groups

***Focusing on the particular working group topic and building from the examples shared during the morning sessions and from your own lived experiences:***

### **RV focus: Advance science through collaborations that bring Indigenous and Earth sciences into partnership**

- What is your vision of meaningful collaborations?
- What are the most important aspects or characteristics to consider in creating innovative partnerships among collaborators from diverse disciplinary and cultural backgrounds to support adaptive and resilient communities?
- What qualities are attractive when forming institutional or industry partnerships? How do successful projects balance power between partners? What are the responsibilities between partners?
- What is the difference between partnerships and collaborations?
- What are aspects of a project that bring community members together? Share examples you've seen that connect with a community need.
- How can intercultural collaborations work to center relationship building? What does authentic, intentional, and meaningful engagement look like in such collaborations?
- What opportunities or challenges might emerge in such collaborative processes, and how can these be navigated?
- What are the ethical considerations? What does an ethical, accountable methodology look like?

- What are the metrics of success for co-creating research, policy, and action through diverse cultural and disciplinary collaborations? What are culturally appropriate approaches for evaluating that success?

**RV focus: Provide opportunities for Indigenous students and early career scientists through scientific and community mentoring**

- Students and early career professionals represent the future of science and action for climate resilience. What can we do now to uplift students and empower their growth into leadership?
- What are pathways for youth/students/early career engagement in diverse cultural and disciplinary collaborations?

**Regions' Groups**

***Focusing on the particular region and stories of those places:***

To focus on sharing: **support adaptive and resilient communities through sharing scientific capacity**

- What does an adaptive and resilient community look like?
- What are the opportunities/challenges in increasing scientific capacity in communities? How is increasing scientific capacity appropriately done?
- What does it look like to focus on relationships between people, place, and all relations? How can we approach our efforts in relational terms instead of transactional ones?
- What are key principles or approaches to weave together society—science—community—students—professionals for justice-centered climate action?
- How can safe, courageous spaces be fostered through this work?
- What are the opportunities to support co-mentoring across regions?
- What does it look like to create institutional cultures of care for culturally relevant and scientifically robust climate and weather actions?

At the beginning of working group sessions:

- **In-person participants** will be given instructions for where to go to join their working group.
- **Virtual participants** will be given instructions for which Zoom breakout room or Google-meet room to join.

**Please remember which group you join and join the same Topic group and same Region group for the working group sessions, to allow for continuity of conversation.**

For the **Topics' Working Groups on Day 1 (May 6) and Day 2 (May 7)**, participants will join one of the seven Topics:

1. **Community relocation/site expansion:** discussion on issues around communities working on community-led relocation, resettlement, or expanding into a new or ancestral site when adapting in place no longer becomes an option.

In-Person/Virtual Group together:

in-person meet in room 3131

virtual join Google-meet: [meet.google.com/xhr-rtqj-fbu](https://meet.google.com/xhr-rtqj-fbu)

Facilitator: Aranzazu Lascurain

Notetaker: Amber Moulton, Alex Kimball Williams

**2. Education, Communication, Training, & Outreach:** discussion on education, communication, training and outreach considerations, strategies, and opportunities as connected to climate, weather, and water.

In-person Group 1:

meet in Center Auditorium

Facilitator: Kadidia Thiero

Notetaker: Tiffany Fourment, Evy McUmbler

In-person Group 2:

meet in North Auditorium

Facilitator: Patrick Chandler

Notetaker: Lorena Medina Luna, Stephanie Martinez

Virtual Group 1:

virtual stay in zoom and join breakout: [https://ucar-](https://ucar-edu.zoom.us/j/97785518462?pwd=WnlZU0QzNUZpUUtudnM0YjJ6OC9KZz09)

[edu.zoom.us/j/97785518462?pwd=WnlZU0QzNUZpUUtudnM0YjJ6OC9KZz09](https://ucar-edu.zoom.us/j/97785518462?pwd=WnlZU0QzNUZpUUtudnM0YjJ6OC9KZz09)

Passcode: rising2024

Facilitator: Paulette Blanchard

Notetaker: Joseph Gum; Grace Crain-Wright

**3. Energy Systems:** discussion on a just transition away from fossil fuels to cleaner, renewable energy.

In-person/Virtual Group together:

In-person meet in room 2607

virtual join Google-meet: [meet.google.com/jzq-idox-bay](https://meet.google.com/jzq-idox-bay)

Facilitator: Ramsay Taum, Robbie Hood

Notetaker: Brigid Mark, Azmal Hossan

**4. Food Systems:** discussion on food security and food sovereignty, as connected to climate, weather, and water.

In-person/Virtual Group together:

In-person meet in room 2126

virtual join Google-meet: [meet.google.com/hkc-izxs-vdp](https://meet.google.com/hkc-izxs-vdp)

Facilitator: Andy Newman

Notetaker: Lilia Davis

**5. Health:** discussion on individual, community, and cultural health (physical, mental, social, emotional, spiritual) as these connect to climate, weather, and water.

In-Person/Virtual Group together:

in-person meet in room 3150

virtual join Google-meet: [meet.google.com/mkc-cmuq-frq](https://meet.google.com/mkc-cmuq-frq)

Facilitator: Melissa Moulton

Notetaker: Isabelle Carriere, Chase Yakelaya

**6. Phenology:** discussion on the timing of natural events, in relation to climate and plant/animal lifecycles.

In-Person/Virtual Group together:

in-person meet in room 2603

virtual join Google-meet: [meet.google.com/tmp-cnjn-hye](https://meet.google.com/tmp-cnjn-hye)

Facilitator: Maraya Ben-Joseph, Teresa Romero

Notetaker: Cameran Bahnsen, Aiyasha Ghani

**7. Water Systems:** discussion on water quality and quantity issues, including freshwater ecosystems and marine ecosystems.

In-person Group 1:

in-person meet in room 2503

Facilitator: Melissa Watkinson-Schutten

Notetaker: Mari Tye, Dylan Blaskey

In-person Group 2:

in-person meet in atrium

Facilitator: Tim Schneider

Notetaker: Alicia Tyson, Alejandro Murillo

Virtual Group:

virtual stay in zoom and join breakout: <https://ucar-edu.zoom.us/j/97785518462?pwd=WnlZU0QzNUZpUUtudnM0YjJ6OC9KZz09>

Passcode: rising2024

Facilitator: Sharon Hausam

Notetaker: Carolina Behe

The working definitions of the topics include:

- Community relocation/site expansion: discussion on issues around communities working on community-led relocation, resettlement, or expanding into a new or ancestral site when adapting in place no longer becomes an option
- Education, Communication, Training, & Outreach: discussion on education, communication, training and outreach considerations, strategies, and opportunities as connected to climate, weather, and water
- Energy systems: discussion on a just transition away from fossil fuels to cleaner, renewable energy

- Food systems: discussion on food security and food sovereignty, as connected to climate, weather, and water
- Human health: discussion on individual, community, and cultural health (physical, mental, social, emotional, spiritual) as these connect to climate, weather, and water
- Phenology: discussion on the timing of natural events, in relation to climate and plant/animal lifecycles
- Water systems: discussion on water quality and quantity issues, including freshwater ecosystems and marine ecosystems

For the **Regions' Working Groups**, participants will join one of the four working groups based on the region in which you work, the region in which you live, the region in which your community is located, or any other personally or professionally salient reason. If you are outside the United States, please select the ecoregion that most aligns with your eco-connections. The Regions groups include:

1. **Atlantic Coastal** (Gulf Coast, Southeast, Caribbean Islands, Northeast)

In-Person/Virtual Group together:

in-person meet in room 2126

virtual join Google-meet: [meet.google.com/cgk-vjqz-jhp](https://meet.google.com/cgk-vjqz-jhp)

Facilitator: Alessandra Jerolleman

Notetaker: Melissa Awbrey, Corinne Salter

2. **Deciduous Forests** (Midwest/Great lakes, Northeast)

In-Person/Virtual Group together:

in-person meet in room 2503

virtual join Google-meet: [meet.google.com/htm-qncj-uiu](https://meet.google.com/htm-qncj-uiu)

Facilitator: Madeline Nyblade

Notetaker: Sashi White

3. **Grass/shrub/arid lands** (Southwest, Plains/North Central, South Central)

In-person Group 1: meet in Center Auditorium

Facilitator: Rebecca Haacker

Notetaker: Leoncio Lagarde, Jamie Belone

Hybrid Group:

In-person meet in 3150

virtual join Google-meet: [meet.google.com/zug-zscq-hmw](https://meet.google.com/zug-zscq-hmw)

Facilitator: Kynser Wahwahsuck

Notetaker: Stephanie Roberts

4. **Pacific Coastal** (Pacific Islands, Alaska, Northwest)

In-person Group 1: meet in room 2607

Facilitator: Bill Thomas

Notetaker: Kammie-Dominique Tavares, Mackenzie Englishoe

### Hybrid Group:

In-person meet in room 2603

virtual join Google-meet: [meet.google.com/zna-xkdr-gph](https://meet.google.com/zna-xkdr-gph)

Facilitator: Jean Tanimoto

Notetaker: Sarah Barger

## Working Group Expectations

A facilitator will guide the working group discussions and a notetaker will record the discussions. Participants are expected to listen and engage respectfully in working group sessions. Disruptive behavior will not be tolerated and will result in removal from the session.

## WORLD CAFÉ & POSTER “WALK”

There will be a World Café meet and greet & Poster “walk” on Day 2 (May 7<sup>th</sup>), during which participants will visit with representatives and poster authors from organizations/programs/projects to learn about the programs, opportunities, work, and experiences. You will select the Zoom breakout room of the world café/poster conversation you wish to attend; you may circulate to multiple breakout rooms.

## World Café & Poster Hosts

### In-person/Hybrid

**Title:** NSF NCAR Education, Engagement, and Early-Career Development (EdEC)

**Host:** Rebecca Haacker & Jerry Cycone, NSF NCAR Education, Engagement, and Early-Career Development (EdEC)

**Description:** NSF NCAR Education, Engagement, and Early-Career Development (EdEC) is the education and training team at NSF NCAR committed to inspiring, engaging, and informing the public about the science happening at NSF NCAR and in our broader scientific community. We support and train the next generation of diverse scientists and engineers through partnerships with K-12 schools, universities and research institutions to forge connections and strengthen programs in the Earth system sciences. Programs and events range from internships and early-career professional development to community engagement opportunities, aimed to educate everyone from the general public to students and current scientists.

**Opportunities:** NSF NCAR EdEC offers a wide range of opportunities for engagement through public events and research partnerships, student internships and fellowships, workshops, and summer schools. We also have postdoctoral opportunities, grant funding opportunities for faculty, and many other programs!

**Title: The CLIMATE (Cultural, Learning, and Institutional Model to Accelerate Transformations for Environmental) Justice Initiative**

**Host:** Kathleen Johnson, Stephanie Martinez, & Christina Marsh, University of California-Irvine's CLIMATE Justice Initiative

**Description:** The CLIMATE (Cultural, Learning, and Institutional Model to Accelerate Transformations for Environmental) Justice Initiative at the University of California-Irvine tackles issues of local climate change and environmental injustice through collaborative, community-engaged research. We seek to transform the culture of the geosciences by fostering a learning environment that brings on-the-ground challenges of environmental justice and sustainability into the heart of our research and education. Learn more here:

<https://sites.ps.uci.edu/climatejustice/>

**Opportunities:** We offer fully-funded PhD fellowships to UCI graduate students and postbaccalaureate fellowships to recent graduates from any institutions. Fellows receive mentorship and participate in a range of professional development activities. They also receive cross-disciplinary training in climate science, environmental justice, and community-engaged research methods. They conduct co-designed research projects with one of our community-based organization partners, including: Sacred Places Institute for Indigenous Peoples, GREEN-MPNA, Orange County Environmental Justice, and Crystal Cove Conservancy.

**Title: American Geophysical Union (AGU) Thriving Earth Exchange**

**Host:** Amanda Shores & Natasha Udu-gama, AGU Thriving Earth Exchange

**Description:** **AGU Thriving Earth Exchange** is a program that enables communities to connect with scientists and/or technical experts to address community priorities related to environmental health, pollution, resilience, sustainability, climate change, natural hazards and natural resources to develop tools and solutions that are feasible and impactful in those communities.

**Opportunities:** Community leads – suggest a priority project! Community Science Fellows – become a boundary spanner! Community Scientist – contribute your science!

**Title: EPA Region 8's environmental justice program**

**Host:** Andrea Trujillo Guajardo & Kayleigh Moses, US Environmental Protection Agency (EPA) R8 Children's Health, Environmental Justice, and Equity Branch

**Description:** EPA Region 8's environmental justice program is focused on ensuring that everyone in Region 8 has the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work. Region 8's EJ Team works to advance environmental justice by supporting underserved communities through connecting with, supporting, building the capacity of, and leveraging resources from both internal and external partners."

<https://www.epa.gov/environmentaljustice/environmental-justice-your-community#region8>

**Opportunities:** For up-to-date information about Environmental Justice funding opportunities, events, and webinars send a blank email to: [join-epa-ej@lists.epa.gov](mailto:join-epa-ej@lists.epa.gov), email

R8EPAEnvironmentalJustice@epa.gov, call 1-800-227-8917, or mail at EPA Region 8 Environmental Justice Program; Children's Health, Environmental Justice, and Equity Branch; EPA Region 8 1595 Wynkoop Street Denver, CO 80202

**Title: NSF Unidata**

**Host:** Tanya Vance & Jeff Weber, NSF Unidata / UCAR

**Description:** NSF Unidata is one of the UCAR Community Programs. It has been funded by NSF since 1983 as a community-led Earth Systems Science data facility with a global community of education and research institutions and users, and NSF Unidata-developed cyberinfrastructure is also used by private industry, non-governmental and international organizations, and US federal agencies. As a partner, convener, liaison, and leader, NSF Unidata works to reduce barriers and time to Earth Sciences via open, accessible, equitable, and ethical capabilities, tools, and services – including near-real time data acquisition, distribution, analyzation, visualization, and management, technical support, and learning and training services.

**Opportunities:** There are numerous opportunities to become involved in NSF Unidata: We are a CO-PI partner with SIPI and NTU on the NSF-funded Sovereign Data Network supporting indigenous data monitoring, sovereignty, data governance, and capacity building with indigenous communities and tribal colleges and universities. We host summer student interns, provide funded Community Equipment Awards, and offer a variety of learning experiences including workshops, microlearning, eLearning, classroom modules, and other training, many of which are customizable to fit community members' needs. We encourage community members to get involved as users, contributors, and testers for NSF Unidata products and services. We actively seek community input via our two governing committees: the Users Committee and the Strategic Advisory Committee. We are always looking for ways to partner and support the broad and diverse Earth Sciences community, if you're interested in any of these opportunities, partnering, joining the community, or learning more, please reach out at <https://www.unidata.ucar.edu/> or directly to [tavance@ucar.edu](mailto:tavance@ucar.edu).

**Title: The Environmental Center at the University of Colorado**

**Host:** Jasmin Barco & Leoncio Lagarde, Environmental Center – University of Colorado, Boulder

**Description:** The Environmental Center at the University of Colorado, **Boulder** is one of the oldest Environmental Centers in the nation, started in 1970 by students for students, at the University.

**Opportunities:** For current or prospective CU students, become involved with the Environmental Center- follow us on Instagram and sign the pledge to be a sustainable buff! Learn about our social and climate justice efforts of bringing in social justice to labs, the Climate Justice Leadership Alliance micro-credential. Over the summer there are opportunities for community to help with zero waste efforts on campus with the summer concerts!

**Title: Kīpuka Kuleana**

**Host:** Sarah Barger, Kīpuka Kuleana (Kaua'i, HI)

**Description:** Kīpuka Kuleana is a Native Hawaiian women-led 501(c)(3) organization and community land trust that protects cultural landscapes and family lands on Kaua'i. We seed land return and repatriation through: education of and partnerships with landowners to return lands to local hands; support for long-time families working to keep their lands (connecting them with legal tools, mediation services, conservation resources, etc); acquisition and holding of lands in trust (via fundraising through our Hō'ahu Lands Tax) on behalf of 'ohana so that they may return to their 'āina (land) and stay connected to their piko (center); and research collaboration with our growing network of indigenous leaders on 'Āinaback/Landback and climate adaptation efforts in indigenous communities.

**Opportunities:** Reach out to us at [admin@kipukakuleana.org](mailto:admin@kipukakuleana.org) if you'd like to be on our email list, talk story about our projects or share resources for Landback. If you are on Kaua'i, we can point you to volunteer opportunities to mālama 'āina (care for land) through community work days. You can learn more about our work at [www.kipukakuleana.org](http://www.kipukakuleana.org) and connect with us on Instagram (@kipukakuleana) or Facebook (Kīpuka Kuleana page).

**Title: American Society of Civil Engineers, Committee on Adaptation to a Changing Climate**

**Host:** Mari Tye, NSF NCAR/ASCE CACC

**Description:** Natural and Nature based solutions (NNBS) are increasingly being applied as part of engineering solutions for a variety of projects, with organizations such as the ASCE and US Army Corps of Engineers developing guidance documents on their design. However, Indigenous cultures, values, and stewardship of ecosystems are not typically represented. How can ASCE engage with Rising Voices to better reflect Indigenous Knowledges and develop shared terminology and understanding around NNBS implementation?

**Opportunities:** For anyone in the area: ASCE 2024 Cold Regions Engineering Conference May 13-16 2024 Anchorage, Alaska will have two sessions on NNBS  
How would you like to engage? Talk to Mari ([maritye@ucar.edu](mailto:maritye@ucar.edu)).

**Title: Agriculture, land management, and terrestrial ecosystems in Earth system models**

**Host:** Danica Lombardozzi, Colorado State University & NSF NCAR; Lorena Medina Luna, NSF NCAR

**Description:** Earth system models represent terrestrial ecosystems, agriculture, and land management to understand the interactions of these systems with climate change. Would your community be interested in using information from these models to help plan for climate change?

**Opportunities:** We invite you to join the conversation to help shape the future development and uses of models. Input from your perspectives on what could be useful for your communities is highly valued. We will host a workshop to provide more information about models and continue discussions about how these models can be useful to your communities.

**Title: Albemarle-Pamlico Tribal Coastal Resilience Connections**

**Host:** Jocelyn Painter, PhD Student, Duke University

**Description:** The project concentrates efforts in the Albemarle-Pamlico National Estuary Partnership program area in southeast Virginia and northeastern North Carolina but aims to learn from, elevate, and highlight great work that tribal communities are already doing throughout Virginia, North Carolina, and the southeast coastal plain. Major components include educating resilience practitioners from agencies, universities, and other organizations on best practices for engaging with Tribes, ensuring all communities are included in resilience planning, and increasing awareness and fostering discussion among tribal communities around the risks and threats of climate change.

The next steps for our partnership include (but are not limited to):

- outreach via community paddles and other events
- continuing to collect water stories, observations, and community perspectives on environmental change
- integrating those stories onto mapping platforms that will also more accurately represent present day Tribal communities and ancestral territories in our region
- expanding capacity and leveraging new sources of federal and other funding (there are very few federally recognized Tribal Nations, especially with present day connections to the AP region and tailored funding opportunities tend to be limited)
- creating tools and resources tailored to the southeast region
- continuing to strengthen connections with agencies, universities, and other non-native resilience practitioners and establish best practices for working with Tribes
- ensuring that all Tribal communities and Indigenous people with present-day and ancestral ties to our region are included in climate resilience and adaptation planning and decision making regardless of recognition status, jurisdictional boundaries, and other similar constraints.

**Title: NSF NCAR Library & Archives**

**Host:** Jennifer Phillips, NSF NCAR Library Director; Krista Gawlowski, Collections Strategies Librarian

**Description:** At the Library, our dedicated and expert staff provide high-touch and customer-centered services, including reference and research support, data management planning, access to archival materials, citation management, and bibliometrics/research analytics in support of the advancement of Earth system science for NSF NCAR and UCAR. The Mesa Lab Library in Boulder, Colorado offers a welcoming space for both individual study and collaboration and a highly specialized collection of scholarly resources on topics related to atmospheric and solar science, computational modeling for weather and climate, technology development, and beyond.

**Opportunities:** We encourage open science (open access publication, open data, open source software) and recognition for research outputs beyond peer-reviewed publications. OpenSky, UCAR's institutional repository, provides free and open access to many of the publications, scientific presentations, posters, and other research materials produced by our staff. The

Archives is a rich resource for photos, videos, newsletters, reports, artifacts, and other materials that document the history of Earth system science.

**Title: Great Plains Tribal Water Alliance**

**Host:** Azmal Hossan & Kynser Wahwahsuck, Great Plains Tribal Water Alliance

**Description:** The Great Plains Tribal Water Alliance is a certified 501© non-profit organization. It serves as an advisory committee to the Great Plains Tribal Chairman's Association on all matters about technical and policy issues regarding the water resources of members of Tribal Nations in the Northern Great Plains.

**Opportunities:** Anybody interested in Tribal water sovereignty and Tribal water justice can engage with the Great Plains Tribal Water Alliance to do research, community engagement and outreach, water justice activism, and policy development, etc.

**Poster Title: "They write reports for us sometimes, but they've never been here": Tribal climate adaptation water needs in South Dakota**

**Poster Abstract:** Water is so sacred (and contentious) for Tribal nations because of its economic, cultural, ceremonial, and spiritual significance. Due to climate change and other structural barriers like settler colonialism, Tribal water resource managers in South Dakota are experiencing greater challenges in managing in-stream flows and groundwater across their reservations. Based on document analysis and in-depth interviews with the Tribal water resource managers, the current project aims to assess water needs and priorities for the federally recognized nine Tribal nations in South Dakota to make them better positioned to adapt to the changing climate.

**Title: A Path for Love and Care: Climate Adaptation**

**Host:** Melissa Awbrey, Tulane University

**Description:** *A Path for Love and Care: Climate Adaptation*, explores possibilities for centering love and care in our efforts to adapt to climate change. This exploration grows out of my personal and professional experiences and study and is not currently affiliated with an organization or a program.

**Opportunities:** It's a conversation...please join and see where it takes us!

**Poster Abstract:** Current efforts to mitigate and adapt to climate change often focus on *what* needs to be done. Though these efforts sometimes address human and social aspects through more effective communication and coordination, authentic collaboration, and integration of diverse ways of knowing for example, they rarely if ever intentionally and explicitly center love and care as an integral part of the process. I argue that for climate adaptation strategies to avoid maladaptation and instead work toward a more just, equitable, and sustainable future, love and care must play a vital and credible role in *how* we respond to climate change.

**Title:** Human Rights and Climate Change in K-12 Classrooms: Educational Resources Developed for the RHRN Global Climate Summit

**Author(s):** Patrick Chandler, Anne Gold (CIRES); Jonas Smead, Elizabeth Gordon (Stober Elementary School); Caley Gallison (Horizons K-8 School); Peter Szameitat (Fairview High School); Martha Alvarez (Palmer High School); Cooper Anstett, Collette Heskett (CU Teach program); Kristen Mcdermott (Centaurus High School)

**Abstract:** In December 2022, United Nations Human Rights, CU Boulder, and the Right Here, Right Now (RHRN) Global Climate Alliance hosted a three-day global climate summit addressing human rights and climate change. To support educators and youth attending the summit, educator guides were developed to match each RHRN theme: Impacts, Obligations, and Solutions. During the summit, a group of teachers worked together to develop lessons focused on braiding climate change and human rights across grade levels and subjects. Together, the educator guides and teacher-designed lessons work to inspire teachers to bring a human rights focus on climate change into their classrooms.

**Title: How to aid in shifting from extractive research to self-determined research: Indigenous Climate Adaptation Initiatives in the Southwest**

**Author(s):** Aida Wates and Dominique David-Chavez, Indigenous Land & Data Stewards Lab, Colorado State University

**Abstract:** The overarching question for this project is: How are climate adaptation initiatives addressing calls for policy and practices that support rather than erode Tribal sovereignty and self-determination? As guided and co-produced with a transdisciplinary team including Southwest Tribal rights-holders, we center three fundamental study questions and objectives for shifting from extractive to self-determined research and data governance: Q1) What are current patterns and trends in Indigenous research and data governance for climate adaptation projects engaging Indigenous knowledges and practices? Obj1) Conduct a U.S. national-scale scoping review Q2) To what extent, and through what processes are Indigenous-focused climate adaptation projects in the Southwest addressing key areas of concern as defined by Indigenous value and governance systems (e.g., sovereignty, relationships, cultural humility, ethics, data and resource sharing practices, etc.)? Obj2) Draw on Indigenous research and governance frameworks, and knowledge sharing guidelines for federal/non-Tribal and Tribal partnerships to complete a regional, cross-case analysis. Q3) What factors and indicators characterize Indigenous self-determined climate adaptation initiatives as shared through an exchange of Tribal success stories? Obj3) Host an inter-Tribal knowledge exchange and participatory mapping workshop with Southwest Tribal resource managers and decision-makers. The questions in this presentation address extractive research practices in the United States and will help to provide examples of self-determined Indigenous research. Examples include: access to data reflecting community priorities, values, and knowledge-bases, rather than external agendas; strengthening nation-to-nation relationships and engaging in meaningful Indigenous consultation.

**Title: Tribal Soils Initiative**

**Author(s):** A. Tyson, USDA (U.S. Department of Agriculture) ARS (Agricultural Research Services) PDI (Partnerships for Data Innovations) / Colorado State University; A. Ashworth, P.

Owens, USDA ARS; C. Kreman, Quapaw Nation; S. Russell, USDA ARS PDI / Colorado State University; S. King, Quapaw Nation J. Ippolito, Ohio State University

**Abstract:** The Quapaw Tribal Nation are advancing approaches to hazard mitigation and risk management aimed at increasing food security and sustainability of agriculture and ranching activities. This includes rehabilitation of land altered by mining back to productive status for the growing of corn, beans, and wheat alongside land used for grazing. The goals of this project include integration of multiple data sources, local technical ecological knowledge, and remote sensing to promote water and nutrient-smart agriculture. The Tribal Soils Explorer, an interactive web app, offers farmers and land managers soil property information previously unavailable.

**Title: Building Relationships For The Future: How To Develop Partnerships For Long Term Ecological Research**

**Author(s):** Charles White (University of Minnesota), Amoke Kubat (Yo Mama's House), Shanai Matteson (Water Bar and Studio), Mae Davenport (University of Minnesota), Erin Bogle (Mallipu Medicines), Mary Marek-Spartz (University of Minnesota), Rebecca Montgomery (University of Minnesota), Gayatri Narayanan (Metro Blooms), & Michael Dockry (University of Minnesota)

**Abstract:** The Minneapolis- St.Paul Long Term Ecological Research (MSP-LTER) project is a transdisciplinary science initiative exploring the ecological, biophysical, social dimensions of the urban environment. To understand the transformative effect of long-term community-engaged research, the MSP-LTER has restructured relationships from transactional connections to substantial, relational partnerships. Through the deepening of our relationships and building trust we have developed these guiding principles: acknowledging past harms, going slow, disrupting power dynamics, and being vulnerable together. As our community partners' needs change, our approaches will adapt through an iterative process of relationship building, open communication, and mutual support based on our guiding principles.

**Title: United States Environmental Protection Agency (EPA) Environmental Justice Technical Assistance and Grant Opportunities**

**Author(s):** Andrea Trujillo Guajardo and Kayleigh Moses; EPA R8 Children's Health, Environmental Justice, and Equity Branch; Environmental Justice, Community Health, Environmental Review Division

**Abstract:** This poster demonstrates the current Environmental Justice Technical Assistance and Grant Opportunities available with the United States Environmental Protection Agency (EPA). The poster caters to an audience within EPA Region 8 – which encompasses Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming, and 28 Tribal Nations – but is broadly applicable as well. Our goal is to share these resources widely in an effort to promote and make more accessible the Environmental Justice Technical Assistance and Grant Opportunities currently offered by EPA.

**Title:** The Coronal Solar Magnetism Observatory (COSMO)

**Author(s):** Maurice Wilson, Christa Bell, Sarah Gibson, Stephanie Roberts, Ben Berkey, Joan Burkepile, Damon Burke, Andrew Carlile, Marc Cotter, Giuliana de Toma, Alfred de Wijn, Samaiyah Farid, Dennis Gallagher, Mike Galloy, Holly Gilbert, Mitch Jeffers, Amy Knack, Don Kolinski, Daniela Lacatus, Krista Laursen, Nir Patel, Lisa Perez-Gonzalez, Caitlynn Quinn, Scott Sewell, Steven Tomczyk, & Mike Wiltberger, NSF NCAR High Altitude Observatory (HAO)

**Abstract:** Society is increasingly reliant on technologies that can be damaged by space weather events, such as coronal mass ejections (CMEs). These CMEs are immense clouds of material that can cause large magnetic storms in Earth's upper atmosphere, affecting technologies – and therefore the lives and livelihoods of people around the world. The Coronal Solar Magnetism Observatory (COSMO) is a proposed suite of ground-based instruments designed to study magnetic fields and plasma conditions in the Sun's coronal atmosphere. The goal of COSMO is to make global measurements of the corona's magnetic and plasma properties to understand solar eruptions and coronal magnetic evolution.

**Title: Understanding the Relationships: People, Place, Technology, the Environment, and Climate Change**

**Author(s):** Ava Hamilton & Tim Schneider, representing The Rising Voices Center for Indigenous and Earth Sciences

**Abstract:** The 11th annual Rising Voices workshop, held in Spring 2023, focused on the theme of Understanding the Relationships: People, Place, Technology, the Environment, and Climate Change. Emerging from the workshop, the Rising Voices workshop planning team, with input from workshop participants, prepared the *Declaration on Relationships and the Wise Use and Applications of Technologies for Climate Actions for Everyone* to guide the use and applications of technologies to heal relationships between people, place, technology, and the environment for future generations. The Declaration's core principles and content emerged from the stories, wisdom, knowledge, insights, and reflections participants shared at the workshop. This Declaration is a response to concerns about the over-reliance on modern technological solutions to the climate crisis and the impacts of modern technology on our relationships. It sets forth principles for technology design, development, use, application, and decision-making processes under rapid global change.

**Title: Indigenizing Your Research: Recommendations from the Earth Data Relations Working Group to Implement Indigenous Data Governance across Earth Sciences**

**Author(s):** Katherine Jones, Lydia Jennings, Julie Maldonado, Stephanie Carroll, Riley Taitingfong, Andrew Martinez, Rosanna 'Anolani Alegado, Jennifer Balch, Dominique David-Chavez, Ruth Duerr, Dennis Dye, Noor Johnson, Terry Ketchum, Katie Spellman, Bill Thomas, Adrien Tofighi-Niaki, Jeff Weber

**Abstract:** Amidst the open/big data revolution, Indigenous Peoples' expertise has been largely excluded from Western systems of scientific inquiry practices. At the US federal level, there is growing momentum for incorporating Indigenous Knowledges in Earth Science research and land management activities and increased visibility for Tribes and knowledges held by

Indigenous communities. Western scientists and institutions increasingly acknowledge that Indigenous Data Sovereignty and Governance are key considerations in ethical decision making in research. While the CARE Principles for Indigenous Data Governance provide a framework for respectful engagement with Indigenous Peoples, there are still many questions about how best to enact these Principles in Open Science projects and apply them into digital ecosystems. Over the course of a year-long conversation, the Earth Data Relations working group explored each aspect of the data and specimen life cycle at the National Ecological Observatory Network (NEON), a continental scale Open Science project. The working group used this specific example to develop a set of broadly applicable recommendations to bring Earth Systems projects at all scales into better relations with Indigenous data stewards and suggest a new model for ethical research practices. Here we share those recommendations and demonstrate how all researchers at any career stage can support implementing Indigenous Data Governance in Earth System Sciences.

**Title: A Machine Learning Approach to Sagittaria Mapping for Coqui Conservation**

**Author(s):** Aiyasha M Ghani & Nishan Bhattarai, University of Oklahoma's Department of Geography and Environmental Sustainability; Adam Terando, Southeast Climate Adaptation Science Center

**Abstract:** The main island of Puerto Rican archipelago boasts culturally, historically, and ecologically significant geological formations, ecosystems, plants, and animal species. A recently discovered endangered species, *E. juanariveronii* - 'Coqui Ilanero' inhabits the Northern Karst of Boriken, with limited known habitat across the island. *Sagittaria lancifolia*, bulltounge arrowhead or 'duck potato', is known to house *E. juanariveronii* egg clutches. Hence, mapping *Sagittaria* offers insights into *E. juanariveronii* habitat. Using Landsat and Sentinel-2 data, we analyzed *Sagittaria*'s spectral responses and explored machine learning algorithms for spatial mapping."

## **Virtual/Hybrid**

**Title: Restorative Diets: A methodological exploration comparing historical and contemporary salmon harvest rates**

**Author(s):** Erika Gavenus, Rachelle Beveridge, and Terre Satterfield, University of British Columbia – Institute for Resources, Environment, and Sustainability

**Abstract:** Indigenous peoples face persistent interruptions to their relational food systems. Along the coast of what some call British Columbia these include the Crown's use of disrupted diets to determine fisheries restoration goals and management decisions. The resulting "shifting baseline" effect holds repercussions for First Nations working to restore their food and governance systems. We worked in partnership with First Nations along the Central Coast to develop a set of methods for exploring diets less disrupted by colonial fisheries policies—restorative diets, which we apply to the case of Pacific salmon to prompt conversation about the fair distribution of harvestable fish.

**Title: Earth Systems Science for the Anthropocene**

**Host:** Michele Clark, Arizona State University

**Description:** Earth Systems Science for the Anthropocene aims to re-imagine the structure and outcomes of STEM research at the graduate level, by providing Immersive, Interdisciplinary, Identity-based Team Science Experiences (IIITSEs) to solve challenges that have emerged as human activity has led to significant impacts on the planet's climate and ecosystems. IIITSEs are collaborative, culturally affirming, and solutions-oriented research projects that center diverse knowledge systems to respond to community needs, support cohorts of racially diverse faculty and students, and promote a just, equitable, diverse, and inclusive campus and community within and beyond the STEM disciplines.

**Opportunities:** Graduate (and some undergraduate students) will be able to apply for a paid summer research experience that is hybrid (mostly remoted with 1-2 week field intensive) in 2025 and 2026. Can join the organization informally to stay aware of discourse on culturally-affirming research experiences in academic institutions at the graduate level

**Title: The Advancement of Science (AAAS) Dialogue on Science, Ethics, and Religion (DoSER) program**

**Host:** Curtis Baxter, Senior Program Associate at the AAAS in the DoSER program

**Description:** The DoSER program seeks to fulfil the mission of the AAAS of “Advancing Science and Serving Society” by facilitating and providing space for thoughtful and impactful conversations between the scientific, religious, and spiritual communities. We carry out our work through a variety of grant funded projects, hosting public lectures, and partnering with organizations and individuals who align with our objectives.

**Opportunities:** One current opportunity is working with theological education institutions who are engaging topics around climate science and are looking to include Indigenous voices that are often left out of the conversation. We are always looking for partners to collaborate with on submitting session proposals at various science society meetings.

**Title: Quality Education for Minorities (QEM) Network**

**Host:** Wendy Todd, Erin Lynch, Sylvia Pu, Mercy Mugo, Nel Rodriguez, & Taylor Lightner

**Description:** We are part of a team housed Quality Education for Minorities that is dedicated to advancing minority participation and leadership in the national debate on how best to ensure access to quality education for all citizens. Our current project focuses on centering Native and Indigenous voices to create a culturally responsive framework for student success driven by Indigenous Community participation.

**Opportunities:** Participate in future groups to discuss higher education success and needs surrounding their experience, with a special emphasis on those attending Tribal Colleges & Universities (TCUs) and Native American Serving Non-Tribal Institutions (NASNTIs).

## RV12 Workshop Evaluation

For this year's Rising Voices Workshop, we will be onboarding an exit survey for all participants. The survey solicits participant experiences of the workshop while also asking them to reflect on the themes of Rising Voices. Data from this survey will support us in making Rising Voices better and fulfilling our evaluative responsibilities. We hope this survey will serve as a touchstone for Rising Voices for years to come. The link to the short survey will be sent around after the workshop.

## Biographies: Workshop Planning Team

**Elder Ava Hamilton** is an Arapaho filmmaker, independent documentary producer, historian, and water protector. Hamilton is dedicated to the sharing of all knowledges that contribute to the survival of life in a good way. She is a Rising Voices Council member and community scientist, providing support and mentorship across generations.

**Dr. Paulette Blanchard** (Absentee Shawnee Citizen & Kickapoo descendant) holds a Doctorate of Geography from the University of Kansas, Master of Arts in Geography from the University of Oklahoma, and a Bachelor of Arts in Indigenous & American Indian Studies from Haskell Indian Nations University. Her work addresses the challenges and opportunities that Indigenous Peoples face in relation to climate change and climate justice. Her work also addresses Indigenous science and science education. Indigenous led environmental movements, and activism. She incorporates Indigenous Feminist methodologies and philosophies into her geographic framework. Her work includes social, climate, and environmental justice for Indigenous Peoples and other marginalized populations.

**Katie Jones**, enrolled Amskapi Piikani (Blackfeet) and European descent, is a plant ecologist at the National Ecological Observatory Network (NEON) in Boulder, Colorado. Katie serves Rising Voices through leadership, organization, co-ordination, and research overall, as well as co-leadership of the Indigenous Phenology Network. Her research interests include plant phenology, plant community interactions, climate change impacts on ecosystems, supporting reproducible analysis workflows, and enacting Indigenous data governance practices in open science research. As part of the Rising Voices community, Katie draws on her perspective as an Indigenous woman and a Western trained scientist to merge complimentary knowledge systems to identify novel solutions for emerging environmental challenges and encourage responsible practices in climate change research. Katie holds an MS in Botany and Plant Pathology from Oregon State University and a BS in Environmental Science from The Evergreen State College.

**Julie Maldonado** is the Associate Director of the Livelihoods Knowledge Exchange Network (LiKEN), and in this capacity, serves as Rising Voices' co-director. Driven to connect with those focused on a commitment to service, collaboration, and community-centered action to address the climate crisis, in 2015, through relationships, Julie co-founded LiKEN, a non-profit, link-tank for policy-relevant research toward post-carbon livelihoods and communities. Growing through infrastructures of care, LiKEN works with our partners to build resilient systems

of support for communities. Dr. Maldonado's disciplinary background is in public anthropology, focusing primarily on collaborations with Tribal communities in coastal Louisiana responding to repeat disasters and climate chaos, including recent collaborative efforts to restore marsh ecosystems, reduce land loss and flood risk, and protect sacred sites; and co-initiated a network for justice-driven disaster recovery. Dr. Maldonado is an Assistant Professor at Future Generations University and is a continuing lecturer for University of California-Santa Barbara's Environmental Studies Program. She was an author on the 3rd, 4th, and 5th US National Climate Assessments.

**Shantel Martinez** serves as the Diversity, Equity, and Inclusion Specialist in UCAR's Office of Diversity and Inclusion. She holds a PhD in Communications and Media with an emphasis on Latinx Communication and Gender Studies from the University of Illinois, Urbana-Champaign. Shantel is an innovative DEI practitioner-scholar holding immense experience with building strong communities of belonging as well as having a demonstrated history of human-centered and inclusive strategic planning. With her background in communications, she is a refined storyteller who easily translates complex theory and data to multiple audiences. She has been published in MALCS: The Journal of Chicana Studies; Qualitative Inquiry; Cultural Studies ⇔ Critical Methodologies; Border-Lines; This Bridge We Call Communication: Anzaldúan Approaches to Theory, Method, and Praxis; Latinx/a/o Communication Studies: Theories, Methods, and Practice; Becoming a Diversity Leader on Campus: Navigating Identity and Situational Pressures, and others.

**Dr. Michelle Montgomery** (enrolled Haliwa Saponi/descendant Eastern Band Cherokee) is an Associate Professor and Chair, Division of Social and Historical studies in the School of Interdisciplinary Arts and Sciences at the University of Washington, Tacoma. She is also the Assistant Director for the Office of Undergraduate Education, the Indigenous Curriculum and Community advisor for the School of Education, Interim Director for Undergraduate Program in the Department of Bioethics and Humanities School of Medicine, and co-coordinator/external Indigenous advisor for the University of Minnesota Morris Sustainability Leadership Program. Dr. Montgomery's -heart work - focuses on Indigenizing and decolonizing the climate justice narrative through the Indigenous Speaker Series, environmental ethics connected to Indigenous Peoples' identities, and Eco-critical race theory to eliminate racial and environmental oppression.

**Tim Schneider** is a Senior Program Manager at the NCAR Research Applications Laboratory (RAL) and a member of the Rising Voices Council. His professional background and experience span a range of issues from weather to water to climate, at both NCAR and NOAA. Currently Tim is working on projects related to hydroclimate. But at the most fundamental level Tim is concerned about the impacts humans are having on all of our relatives that make our Earth the beautiful home that it is. He seeks to partner with all like-minded individuals to apply the best of our combined knowledge systems to inhabit the Earth in kinder and gentler ways, so that we can all thrive together. Lastly, if there is some water nearby, watch out or you might get splashed, as Tim is likely to jump into it.

**Diamond Tachera** is a kanaka 'ōiwi (Native Hawaiian) born and raised on O'ahu, Hawai'i. She recently completed her Ph.D. in Earth and Planetary Sciences from the Department of Earth Sciences in the School of Ocean and Earth Science and Technology at the University of Hawai'i at Mānoa. Diamond's dissertation research focused on the geochemical changes within the water cycle, focusing on precipitation and groundwater, to better understand the source, flow, and interconnectivity within Hawaiian aquifers. Diamond is currently a Project Scientist I with the Mesoscale and Microscale Meteorology Laboratory at NSF NCAR and Co-Director of Rising Voices. Diamond is also the Co-Director for the University of Hawai'i at Mānoa SOEST Maile Mentoring Bridge Program. The program creates unique mentoring relationships for Native Hawaiian, kama'āina, and individuals of other under-represented ethnicities that offer support, encouragement, and the sharing of knowledge by weaving individual student goals with their personal and cultural experiences.

**Bill Thomas** is the Senior Advisor for Islands, Indigenous and International Issues for the National Oceanic and Atmospheric Administration's (NOAA) Office for Coastal Management. He is a Kanaka Maoli (Native Hawaiian) from Ahupua'a o He'eia, 'Ili o Waipao on the east side of O'ahu. His undergraduate and graduate educational background is in marine biology, with a focus on the population genetics of the 'opihi (the marine limpet *Cellana* spp.) a prized Hawaiian delicacy, the ecology of introduced octocoral species in Hawai'i's nearshore and the lifecycles and impacts of marine species introduced via ship bottoms to Hawai'i's marine environment. His professional areas of responsibility include indigenous engagement around climate and its implications for local, regional, national and international security across the Pacific, Caribbean and continental U.S.

**Daniel Wildcat**, Ph.D., is a professor at Haskell Indian Nations University in Lawrence, Kansas, and an accomplished scholar who writes on Indigenous knowledge, technology, environment, and education. He is the Principal Investigator of *Rising Voices, Changing Coasts: The National Indigenous and Earth Sciences Convergence Hub*. He founded the Haskell Environmental Research Studies Center, with colleagues from the Center for Hazardous Substance Research at Kansas State University. Wildcat helped design a four-part video series entitled *All Things Are Connected: The Circle of Life* (1997), which dealt with the land, air, water, biological, and policy issues facing Native nations. A Yuchi member of the Muscogee Nation of Oklahoma, Wildcat formed the Indigenous Peoples Climate Change Working Group, a tribal-college-centered network of individuals and organizations working on climate change issues. In 2008, he helped organize the Planning for Seven Generations climate change conference sponsored by the National Center for Atmospheric Research. He is the author of *Red Alert! Saving the Planet with Indigenous Knowledge* (2009). Wildcat's most recent book is *On Indigenuity: Learning the Lessons of Mother Earth* (2023).