

Rising Voices: Collaborative Science with
Indigenous Knowledge for Climate Solutions



Rising Voices 6
Rising Together:
Mobilizing and Learning from Local Actions
Workshop Report



Wednesday April 11 – Friday April 13, 2018
Lake Superior Ballroom
Duluth Entertainment Convention Center



Background

Rising Voices: Collaborative Science with Indigenous Knowledge for Climate Solutions (Rising Voices) facilitates cross-cultural approaches for adaptation solutions to extreme weather and climate events, climate variability, and climate change. It envisions collaborative research that brings together Indigenous knowledges and science with Western climate and weather sciences in a respectful and inclusive manner to achieve culturally relevant and scientifically robust climate and weather solutions.

The idea for Rising Voices developed in 2011 from a conversation between a social scientist (Dr. Heather Lazrus) at the National Center for Atmospheric Research ([NCAR](#)) in Boulder, Colorado and a cultural ecologist and lawyer (Bob Gough), who was a visiting scientist at NCAR at the time. Rising Voices was initiated at NCAR to increase engagement among Indigenous communities in the US and Indigenous and non-Indigenous scientists. This led to NCAR hosting a special [workshop forum in 2013](#) that brought Indigenous and Western scientists into conversation about weather and climate change by asking the question, “What are the elements of successful co-production of science and policy in the fields of extreme weather and climate change?” The University Corporation for Atmospheric Science (UCAR) and NCAR now support annual Rising Voices workshops.

Rising Voices has developed into a vibrant and productive cross-cultural network of nearly 400 engaged participants, including Indigenous and Western scientific professionals, tribal and community leaders, environmental and communication experts, students, educators, and artists from across the United States, including Alaska, Hawai‘i, and the Pacific Islands, and around the world. It functions as a boundary network among diverse individuals and knowledge systems, and fosters relationship building based upon mutual trust and respect. It acknowledges the inherent value of Indigenous knowledge systems and Indigenous science, including but not limited to traditional ecological knowledge and adaptive practices and processes, honoring them equally with Western science.

Process

To date, participation in Rising Voices has occurred primarily through annual workshops, which have nearly quadrupled in size since 2013 (from 45 to about 170 people), and an active listserv of nearly 400 members, who use it to share updates, coordinate follow-up projects, and incorporate ideas from workshops. NCAR has hosted four Rising Voices workshops in Boulder, CO. The Pacific Risk Management ‘Ohana and Olohana Foundation hosted a [workshop in 2016](#) on Hawai‘i Island. The [6th annual Rising Voices workshop](#) in 2018 was held in Duluth, Minnesota, and organized in partnership between UCAR/NCAR, the Livelihoods Knowledge Exchange Network ([LiKEN](#)), the [NOAA Office for Coastal Management](#), the [College of Menominee Nation’s Sustainable Development Institute](#), the Indigenous People’s Climate Change Working Group, and the Department of Interior’s [Climate Adaptation Science Centers](#), among others. The selection of place was catalyzed by Rising Voices co-founder Bob Gough, who helped organize, with NASA, Honor the Earth, Haskell Indian Nations University, among other partners, the [Native Peoples—Native Homelands Climate Change Workshop](#) in Minnesota nearly ten years prior.

Rising Voices recognizes that Indigenous communities are frontline communities particularly vulnerable to the adverse effects of a warming climate and impacts of extreme weather events. Indigenous community members are in the best position to identify local changes and potential impacts upon their lands and cultures. Climate scientists can assist these communities by providing information that identifies underlying larger-scale causes and predictions of future climate change to build resilience and assist in adaptation planning. Rising Voices connects Indigenous and Western scientists and participants

coming from a diversity of disciplines and backgrounds, and allows a safe space for their co-creation of knowledge. It has facilitated the creation of new and continued collaborative partnerships between Indigenous communities, scientists, academics, researchers, students, and government representatives.

The long-term goal of Rising Voices is to address the challenges of understanding and responding to a changing and variable climate, extreme weather events, research and policy needs. By bringing together tribal and community leaders, scientific professionals, environmental and communication experts, students, educators, and artists from across the United States and world, Rising Voices aims to support a growing network of collaborators with diverse intellectual and cultural backgrounds; assess critical community needs in relation to the impact of climate and weather extremes; encourage Indigenous and other youth to pursue a career at the science-Indigenous knowledge interface; and pursue joint research aimed at developing culturally, socially, and economically optimal plans for community action towards sustainability.

Cultural protocol/welcoming

Rising Voices 6 began, as all Rising Voices workshops do, with an opening ceremony. This year's water ceremony was led by Jannan Cornstalk ([Little Traverse Bay Bands](#) & Water Warrior) and Roxanne DeLille (Ojibwe-Anishinabe, [Fond du Lac Tribal and Community College](#)) on the banks of Lake Superior. Rising Voices 6 participants were reminded of the sacredness of water as life, and the importance of female spirits as water protectors. Water brought from Lake Michigan was shared amongst the group, connecting each individual to each other and to the Great Lakes region for the duration of the convening.



Welcome to Duluth / Introduction to place

Karen Diver, the [Faculty Fellow for Inclusive Excellence-Native American Affairs at the College of St. Scholastica](#) and former Chairwoman of the Fond du Lac Band of Lake Superior Chippewa, introduced us to some of the history of people in the Great Lakes region. Diver recounted the prophecy that the Anishinaabe peoples must move west, away from the Atlantic coast, to find “a land where food grows on water.” Many ended up at Madeline Island and other areas near Lake Superior, such as the Fond du Lac Band of Lake Superior Chippewa.

Diver reminded her audience that, thanks to assistance from governmental agencies and partners, the Fond du Lac Band now owns Spirit Island, a sacred Ojibwe island on the St. Louis River and the sixth stopping place in the migration of the Anishinaabe people from the northeastern part of the continent.

While this is obviously an important reclamation of land for the Lake Superior Chippewa, Diver pointed out that there is a steel Superfund site directly next to Spirit Mountain. As Indigenous groups reclaim their land and are once again able to act as environmental stewards, we must recognize how those in power have historically failed to maintain the health of our planet.

Diver explained that when predominantly white, Western groups observe something it is considered science, but when Indigenous Peoples observe something it is referred to as storytelling. In order for there to be effective dialogue surrounding climate action, we must place the same value on traditional/tribal ecological knowledge (TEK), Indigenous knowledge of place, and Indigenous natural resource management and restoration as we do on Western scientific knowledge. Building coalitions between Indigenous groups and governmental partners is essential to create adequate adaptation solutions to climate change, and working together creates a better outcome for *all* people and relatives.

Video tribute to Bob Gough

Rising Voices 6 honored the memory of Bob Gough, one of the co-founders of the Rising Voices program, who walked on in September 2017. A lawyer by training, Bob was a leader in the development and advancement of Indigenous peoples' rights, especially in the context of weather extremes and climate change. He worked hard to promote and actualize the development of renewable energy and energy-efficient housing on tribal lands. He met with national and tribal leaders around the world. It is rare to work with anyone with as extended a network as Bob had. His work will continue through his network. His cutting humor, quick intelligence, and deep compassion will be extremely missed by many.

Craig Elevitch ([Agroforestry Net](#)) presented a [video](#) that Kalani Souza and others with the [Olohana Foundation](#) and [Lomikai Media](#) produced as a tribute to both Rising Voices and Bob Gough. Elevitch's presentation and Souza's video highlighted the importance of adapting to climate change through partnerships and leadership, sharing the knowledge of cultural practices in different climates, and giving the same credibility and legitimacy to both Indigenous and Western science to develop a new language for climate change adaptation. We must share all forms of knowledge across different communities, as some minds are always better than one mind.

Indigenous wisdom of adaptation and other forms of TEK emerge from symbiotic relationships between people and the natural world, and holistic approaches to climate action offer a new level of understanding the natural world. Different ways of knowing exist just as different paths and streams do, but when they converge, something new is created. We must connect communities in meaningful ways and foster this new level of understanding the world that stems from both old and new ways of knowing. Adapting to climate change through coalition-building and the sharing of knowledge is what Bob had in mind when he helped found Rising Voices. We honor him through our continuation of his work.

Bob always wanted Rising Voices to come to the Great Lakes region, and we know that he and other ancestors were with us this year in Duluth, MN.

Where we've been and where we're going

Bill Thomas (NOAA Office for Coastal Management) helped Rising Voices 6 participants to identify where the network has been and where it is going. He began by recognizing the three co-facilitators behind the Rising Voices program: Heather Lazrus (NCAR), Bob Gough ([ICOUP](#)), and Julie Maldonado ([LiKEN](#)), who,

along with the support of NCAR and other partners, have worked to sustain the Rising Voices community for the past six years. Thomas listed some of the highlights from previous Rising Voices convergences, such as the emergence of the Indigenous Phenology Network (IPN), input to the US National Climate Assessment, disaster preparedness training for participating communities and representatives, recommendations to the President’s State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience, and Rising Voices as the catalyst in providing the relationship building over the past several years that has helped enable the National Oceanic and Atmospheric Administration (NOAA) to rework its criteria to accommodate the needs and increase inclusion of tribal college students in its fellowship opportunities.

Thomas discussed NOAA’s goals to create an Indigenous Peoples’ Cooperative Science and Resource Center that meets the needs of Indigenous communities and works with tribal colleges and universities. He reminded his audience of the power of one, and the likewise power of partnerships and family.

Relationships are important, especially in the process of creating something that has not been done before. He reminded us that although the past has a voice, it does not have a vote. We must use our power—of both the individual and the community—to turn the lessons of the past into achievable goals for the future.

Relationships matter (pau nā mea pili pili)
The power of one (ka mana o kekahi’)
The power of partnerships (ka mana o na hui)

Before his final reminder that water unites us all, Thomas left us with these hopeful words: “Dear past, thanks for all the lessons. Dear future, I’m ready.”

Charge to Rising Voices 6

Dan Wildcat ([Haskell Indian Nations University](#)) delivered the charge to Rising Voices 6. Wildcat hopes to remind all of humankind that wealth does not reside in the resources you own, but in the number of good relatives you have. If you have good relatives, then you are a wealthy human being. Relationships, respect, responsibility, and resilience are the four most important attributes to enhance life on this planet.

“Can we live our lives in such a way that we can be human members of systems of life enhancement on this planet?”
– Dan Wildcat,
Haskell Indian Nations University

Tribal restoration and recovery programs are necessary to honor our ancestors and our responsibility to future generations. Wildcat stated that political discourse has historically been monopolized by the discussion of inalienable rights. Leaders must also discuss our inalienable responsibilities as human members of larger systems and communities. We have been focused on developing society and making “progress,” but civilizations and “progress” have caused more problems than they have solved. It is impossible to solve problems with the same kind of thinking that created them, so we must completely reevaluate how our societies and institutions function. We must step away from the anthropogenic-defined notion of



progress, and instead revisit the importance of relationships, respect, and responsibility in cultivating resilience.

We must ask ourselves “can we live our lives in such a way that we can be human members of systems of life enhancement on this planet?” If we can, resilience will emerge. Institutions should move away from corporate “sustainability” principles and become more Indigenized, as this is the century when Indigenous people will be the thought leaders for change. We are all part of the larger global community, and there is work for everyone. Go out and do something!

NCAR: Projects/Partnerships catalyzed by Rising Voices

Carolyn Brinkworth (UCAR) was invited to speak on the various projects and partnerships catalyzed by the Rising Voices program. She began by introducing UCAR’s mission to create the best possible science to serve society and better life on Earth. Brinkworth commented on her position as the Chief Diversity, Equity & Inclusion Officer, as well as the creation of the [Office of Diversity & Inclusion at UCAR/NCAR](#).

Relationships
Respect
Responsibility
Resilience

Brinkworth acknowledged that Western science does not have all of the answers, and the best science comes from partnerships with others. Working with partners in different communities facilitates cultural diversity in science—diversity of both thought and partners—and partnerships with other people, cultures, and knowledges is necessary to create the best possible science and better life on Earth. This includes building partnerships with communities to co-create support and research teams, and investing power in communities instead of depending solely on academic and Western institutions.

UCAR and NCAR have invested in Rising Voices and various Rising Voices-inspired programs to:

- 1) Develop cultural competencies in the Western science community,
- 2) Put power and autonomy back in the hands of Indigenous and other communities, and
- 3) create and fund cross-cultural, collaborative projects.

Most recently, the National Science Foundation funded NCAR/UCAR under the [INCLUDES](#) (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) program to conduct a comprehensive initiative to build research partnerships between Tribal communities and Western sciences. Partnerships like these engage and mentor Native students through the development of citizen science projects, which increases diversity in the geosciences and trains climate scientists in culturally-responsive practices. For example, NCAR’s Citizen Science Project works with four communities in Hawai’i, Alaska, Arizona, and Wisconsin to study the culture and science of water in these areas. This project is concerned with answering questions about water quality, what drives community members, how to use data to help improve the natural water model, and how products can increase community capacity (for more details, see the summary of the INCLUDES breakout group session below).

Keynote

Winona LaDuke, Executive Director, Honor the Earth

The first keynote speaker for this year's Rising Voices was Winona LaDuke, Executive Director and co-founder of [Honor the Earth](https://www.honorearth.org/) – a Native-led organization established to “address the geographic and political isolation of Native communities and the need to increase financial resource for organizing change”

(Honorearth.org). Besides working with Honor the Earth, Winona is also a community organizer, a water protector, and a graduate of Harvard University. Winona brought up some important questions during her keynote: What does it mean to be a water protector? and How are we going to make a better world? These are questions that we need to ask ourselves and questions that need to be answered.

“It is not about what is happening but about what we will do about it.”
– Winona LaDuke, Honor the Earth



Winona spoke of being in the time of the Seventh Fire and of being in this moment right now: “It is not about what is happening but about what we will do about it.” People need to realize that farmers are not white guys in tractors. They are people who look like us: Indigenous people and we need to reaffirm and reevaluate our knowledge.

Winona spoke of the need to have the courage to articulate the knowledge [Indigenous people] hold: “We cannot be stuck in a paradigm that does not acknowledge us. We need to reaffirm who we are and what we know. It is time to be courageous and move.” People know and are aware that the continued use of fossil fuels and building of coal mines is not sustainable. We need to start moving towards a new economy that is more sustainable. Water and infrastructure is fine – but it should be for the people, not for coal and oil companies. Pipelines should be removed. However, Winona also understands that this is circumstantial to each tribe and sometimes tribes may need them due to different circumstances. And yet, the majority of the time, tribes and their lands are being greatly affected, with 85% of rice gone in Winona’s land as a result of pipelines.

The current and next generations need to be informed and educate themselves to fix these problems. At hearings, people need to ask clarifying questions, especially because others presenting at these hearings often [throw out big] words. More often than not, these are words that are incomprehensible unless we have educated ourselves in the terminology. People need to be informed and the system is going to have to be changed. “What remains of this society is that the needs of a corporation exceed those of the people. A corporation is not a person.” Right now, there are a lot of social movements happening. There is a lot of kindling and there are a lot of embers. “Everybody knows that fire is beneficial but we also know that it is disruptive.” We need to light these embers and keep the fire going.

Winona ended by emphasizing the need to make treaties that will protect Indigenous Peoples future and to not accept the paradigm set by [Western scientists]. “Be the people that will make a change. Few people get to see the backs of trucks loaded up with pipelines leaving. There’s no lack for pipes in this

country. We just need to use them in the right way. In the right infrastructure.”

We are all water protectors. So be that.

“Be the people that will make a change.”
– Winona LaDuke, Honor the Earth

Presentation Panel 1

Climate Resilience: Learning from the Great Lakes Region

Cathy Techtmann, [G-WOW](#) / [University of Wisconsin-Extension](#), moderator

1854 Treaty Authority Climate Change Planning (Tyler Kaspar, Tansey Smith, Darren Vogt, [1854 Treaty Authority](#))

Gathering TEK for an Intertribal Climate Change Program (Hannah Panci & Melonee Montano, [Great Lakes Indian Fish and Wildlife Commission](#))

Plant Phenology as an Indicator and Connector for Indigenous Climate Science Relationships (Chris Caldwell, [College of Menominee Nation-Sustainable Development Institute](#))

Pipe Out Paddle Protest (Jannan Cornstalk, [Little Traverse Bay Bands](#) Tribal citizen & Water Warrior)

The first presentation panel centered around the climate resiliency policies and adaptations of the Great Lakes Region. Cathy Techtmann, from the University of Wisconsin-Extension, acted as moderator, and first introduced Tyler Kaspar and Tansey Smith, , to speak about the 1854 Treaty Authority Climate Change Planning. The group described the efforts of the inter-tribal natural resource agency to protect and enhance both treaty resources and rights.

We next heard from Hannah Panci and Melonee Montano, of the Great Lakes Indian Fish and Wildlife Commission. Panci and Montano spoke about Utilizing Traditional Ecological Knowledge (TEK) to fashion a holistic approach toward approaching climate change. They noted the importance of using indigenous terminology and giving a voice to Indigenous peoples, and especially advocated for the integration of youth into climate change research.

Next, Chris Caldwell, of the College of Menominee Nation, educated us on the importance of phenology as an indicator and connector of indigenous climate science relationships. Chris discussed the theoretical model of sustainability, which was developed by tribal leaders nearly 25 years ago, and combines the study of economics, community life, human behavior, and climate adaptation. He also touched on the importance of not only respecting the environment, but assuming responsibility for its well-being.



Finally, we heard from Jannan Cornstalk, a Little Traverse Bay Bands Tribal citizen and Water Warrior. Cornstalk discussed the [Pipe Out Paddle Protest](#), which was a 2015 collaborative effort between non-profit

environmental organizations, tribes, and Michigan voters to protest the construction of Enbridge Line 5, an oil pipeline in the Great Lakes. Cornstalk spoke on how the public protest was a springboard for social action, and reported that a majority of the regional tribes have signed or made resolutions that call for Enbridge Line 5 being decommissioned.

Local Tours

Fond du Lac Resource Management

Some participants had the privilege of visiting with Fond du Lac (FDL) Natural Resource staff. Nikki Crowe ([13 Moons Program](#) Coordinator) and Tom Howes (FDL's Natural Resources Program Manager) graciously gave their time to guide us through the new energy-efficient building where the [Fond du Lac Resource Management](#) Division is housed on the FDL Reservation. They shared information about FDL's robust forestry, fisheries, wildlife, and environmental programs, and provided a small window of understanding into the relatively recent history of the Tribe's treaties, and land and resource management processes. We learned about some of the vast ways that FDL is a leader in climate resiliency, such as through their innovations in renewable energy and energy efficiency, outreach and education efforts (e.g., operating the vermicomposting (worm bin) program at the Ojibwe School), reforesting land more recently used for agricultural purposes, and the Tribe's leadership in its [Environmental Air Program](#) and [Reservation Air Shed](#) designation.



They guided us to one of the Tribe's sugar bush sites, where the maples were tapped and sap was flowing. The sap flows under specific conditions, when daytime temperatures are in the 40s°F and the nighttime temperatures are below freezing (32°F), which typically starts in mid-March in Northern

Minnesota. Although the timing for flows has shifted and maple syrup yields have diminished in some recent years, with rapidly changing and rising air temperatures.



Wisconsin Point, estuary and manoomin restoration



The [Lake Superior Estuarium](#) is a new facility funded by the National Oceanic and Atmospheric Administration and the University of Wisconsin-Extension in a newly renovated building on Baker Island, on the shores of Lake Superior. The interactive display helps visitors explore intimate details of the estuary, learning about broad geological processes alongside minute biological developments among the inhabitants of the shoreline. The nearby Wisconsin Point is one of the largest freshwater sandbars in the world. Here, we were guided by Deanna Erickson, the Education Coordinator for the Lake Superior National Estuarine Research Reserve, and by Mark McConnell, a Fond du Lac elder. Deanna discussed the unique geological structure of the Point while we walked out on snow-covered dunes and the fragile sandbar they protect.

Fieldtrip participants learned from Mark about the Ojibwa subsistence practices and foods he grew up with on the Point. Mark shared his childhood memories of collecting manoomin, trapping, and gathering medicinal plants, making the landscape come alive as the rich subsistence hub it had been. The fieldtrip

culminated at the tip of Wisconsin Point where a few trails meandered towards the lake and participants listened to Mark's stories which provided a barometer of change, helping us understand the important work of the Estuarium and Research Reserve to protect the unique landscape and foster a return of the species that populated Mark's stories.

Gimaajii-Mino-Bimaadizimin – American Indian Community Housing Organization

The [Gimaajii-Mino-Bimaadizimin](#) Gathering Place is the City of Duluth's first American Indian Center. The tour, led by Moira Villiard with the Center, took us to the solar rooftop and garden, the center's theater/event space, gift shop, children's care center, and their gymnasium. The Center provides resources to Indigenous people in and around Duluth through the arts, community building, healthcare services, and providing a space for children and youth to gather. The event space within the Center serves as a place for Indigenous artists to showcase their art, offering free canvassing for displays, and hold events at very little cost to them. The Center also offers medical services, free meals, and affordable housing (American Indian Community Housing Organization) to Indigenous people living in Duluth.

The solar roof panel was recently installed and provided energy for the Center. The rooftop also used to house the roof garden, but the garden was moved to the children's playground outside to make room for the construction. This in turn allowed for the children to become more involved in learning about plant growth and even in transferring this knowledge to their families at home. Now that the solar panels have been completed, the Center's next project is to turn the roof into a garden once more and be able to have an expanded gardening program. The roof also housed on one of its walls a 30-foot x 40-foot mural, representing water protection and missing and murdered Indigenous women. The mural's presence is felt beyond the Center, being visible to all those passing by the Center, located in the middle of Duluth.



Learning from the Gidakiimanaaniwigamig (Our Earth Lodge) STEM Camp: Investigating climate change and its effect on Ojibwe lifeways



During the evening event at [Fond du Lac Tribal and Community College](#) in Cloquet, MN, located near the Fond du Lac Reservation, we were greeted by Roxanne DeLille, followed by Courtney Kowalczak and some of the other professors and leaders of the [Gidakiimanaaniwigamig](#) (Ojibwe, meaning “Our Earth Lodge”) Camps, a series of non-traditional STEM (science, technology, engineering, and math) camps for kids. The camps, which are free to students, focus on introducing middle school students from the Fond du Lac Reservation and surrounding areas to the scientific method and Native American culture and practices. With the

partnership of the National Aeronautics and Space Administration ([NASA ESTEEM](#)), the camps also include a focus on climate change and its effects on Ojibwe lifeways.

The camp leaders screened a video of the camps, which included comments by participating students, highlighting how the camps are a chance to connect with the community members, for students to socialize and meet other students who are interested in science and math, and to learn more about their Native culture, which they want to carry on and pass onto others.

Roxanne DeLille welcomed us to dinner through a prayer to bless the food. She reminded us to take no more food than what we could eat because food is sacred and should not be thrown away. Elders were prioritized to eat first. As part of her closing remarks, she mentioned the four Rs, with one of these being responsibility. This becomes part of who we are and it also forms part of where we are. “Are we present in this moment and are we doing what is being asked of us? And it can get hard. Because we get distracted. And sometimes they’re not good distractions. And sometimes it’s great. These distractions can take us to the place where we are meant to be. The challenge is to make the distraction into something great.” Reflect on what you are learning today and what we will do with it tomorrow.



“Are we present in this moment and are we doing what is being asked of us?”
– Roxanne DeLille, Ojibwe-Anishinabe

Story of the Day / Reflections from Day 1

We began our second day together with a reflection on the first. Julie Maldonado (LIKEN) noted that the

goal of day two was to have deeper dialogues and connections, and build upon new and old relationships. Individuals were asked to find 2-3 people in the room they did not know and share stories with each other from the previous day's tours and evening event, as the group had split up to go on different tours. This provided a smooth transition into the second day's presentations, which included Mary Owen, Karen Driver, and a Great Lakes Region Student Panel.

Mary Owen, Duluth Indigenous Commission

Our first speaker of the day was Mary Owen, who is from Southeast Alaska and works on issues of education, among other things, with the [Duluth Indigenous Commission](#). Owen raised attention to the fact that Native youth in the Duluth area only have a 37% high school graduation rate, and that the education funding spread is in dire need of reform. She also addressed the issue of sick leave in the Indigenous community, and how roughly 47% of people in the Duluth Native community do not have adequate access to earning sick and safe time. Owen concluded with a discussion of the Natives Against Heroin initiative, which involves local fire and police authorities to help facilitate a sweat lodge as a culturally relevant safe space. The initiative is framed as a method of help, not judgment.

Keynote

Karen Diver, Faculty Fellow for Inclusive Excellence-Native American Affairs, College of St. Scholastica

Our keynote speaker for the second day was Karen Diver, the Faculty Fellow for Inclusive Excellence-Native American Affairs at the College of St. Scholastica and former Chairwoman of the Fond du Lac Band of Lake Superior Chippewa. Diver has an extensive background in advocating for Indigenous interests, such as serving on President Obama's Task Force on Climate Resiliency and Adaptation. Diver began with a discussion of Native cultures and traditions as stories of survival, and how Indigenous housing is a holistic issue of climate, food security, nutrition, and business. She then dove into an account of her actions with the Kyoto Accord, and how she attempted to shift the focus of energy resources from quantity to quality. Diver observed that policy actions were often geared toward economic interests, not the health of resources, and that any environmental initiatives should be geared toward the preservation of species. She noted the negative impacts of climate change on maple production, the lackluster yield of wild rice in depleted ecosystems, and the increased overall toxicity in fish.

Diver spent the second half of her speech dissecting the issue of environmental racism, and how climate and weather-related disasters have disproportionately negative effects on Indigenous communities. She brought attention to the fact that many Native communities feel forgotten by US federal government agencies, and are often not recognized as tribes by the state, but as non-profit groups. Diver concluded with a call to action within the federal system, and urged the audience to keep track of what initiatives are done or undone within federal agencies. She argued that "tribal cultural heritage is American heritage" and warned agencies that if they cannot support tribal sovereignty, they "need to stand down."



“Tribal cultural heritage is American heritage.”
– Karen Diver, College of St. Scholastica

Presentation Panel 2

Students from Great Lakes Region

Paulette Blanchard, Absentee-Shawnee/University of Kansas, and Hannah Smith, Honor the Earth, co-moderators

Heather Budgin, Fond du Lac Tribal and Community College

Thomas Kenote, University of Minnesota

Jasmine Neosh, College of Menominee Nation, Sustainable Development Institute

Arianna Northbird, Fond du Lac Tribal and Community College

Decolonizing the education system and other institutions is essential to support Indigenous students in their future endeavors.
– Student panelists from the Great Lakes Region

The second Presentation Panel consisted of presentations from Thomas Kenote (University of Minnesota), Jasmine Neosh (College of Menominee Nation, Sustainable Development Institute), Arianna Northbird (Fond du Lac Tribal and Community College), and Heather Budgin (Fond du Lac Tribal and Community College), and was moderated by Paulette Blanchard (Absentee-Shawnee/University of Kansas) and Hannah Smith (Honor the Earth). Panelists discussed doing research as Indigenous students and working with various scientific communities, which can be a difficult process to navigate.

Paulette Blanchard, one of the co-moderators, discussed how her research with Oklahoma tribes (through the University of Oklahoma) brought people together to talk about climate change. As both Indigenous and white, Blanchard has found herself having conflicting knowledges, which can create a hostile work environment in the realm of research. Western science forces Indigenous knowledge to be fractionalized and compartmentalized instead of being given the same value as Western knowledge. It is difficult for Indigenous students to work in a place that forces them to separate their culture from their research, while also facing settler colonial racism in the workplace and in society. Blanchard highlighted the importance of hiring Indigenous people in research positions and all career paths, talking to Indigenous communities to train one’s self in cultural competence, creating space for Native students and mentors in academic and other environments, and addressing settler colonialism, settler terrorism, cultural appropriation, and other oppressive systemic forces that function today. Hannah Smith, co-moderator, echoed these sentiments, emphasizing the value that Indigenous student voices bring to spaces of research and other scientific inquiries, and the importance of strong mentorship for students.

Thomas Kenote Jr., a University of Minnesota graduate student, discussed how gaps in literature on Indigenous phenology vs. “regular” phenology reflect different cultural and spiritual values. Indigenous phenological knowledge is a timekeeping device, and is therefore extremely important to the realm of climate sciences. Kenote is currently in the process of studying how climate change affects the phenophases of phenological events in 12 species of plants that are integral to the Menominee Nation. He has witnessed and experienced how the tension between Indigenous and Western knowledges prevents many Indigenous youth from wanting to be involved with (Western) sciences, which is representative of larger systemic and structural problems. Kenote believes that the NASA and other agencies should have an elder from each tribal community represented in their projects, as each community has its own TEK and value to offer to the global scientific community.

Jasmine Neosh, the Tribal Climate Relations Research Intern at the College of Menominee Nation’s Sustainable Development Institute, delivered the second presentation. Neosh is contributing to a National Science Foundation (NSF) grant project with the goal of creating more ethical collaborations amongst Indigenous and non-Indigenous people in relation to climate science. She has helped to create a searchable database for cutbacks to climate research, making it easier for people to access hundreds of climate change documents. Neosh helped to classify climate research plans according to year, state, tribe, strategy, social impacts, environmental impacts, and other categories. This tool, which will be made publicly available soon, will make its data available to the people who need it and will help bring to the forefront the advanced work that has already been done on climate research. Neosh is proud to be a part of the Sustainable Development Institute, which allows interns to personalize their contributions to their research. Finally, she expressed to her audience that organizations like NASA lose Native students when they require interns to be attending a 4-year institution.

The third student to present, Arianna Northbird from the Fond du Lac Tribal and Community College (FDLTCC), was motivated to research how policies affect Indigenous people after participating in the Dakota Access Pipeline protests (NoDAPL) at Standing Rock. She shifted her career to focus on science after meeting her mentor, Courtney Kowalczak, and has since been part of a mercury research project. Northbird has been studying and measuring the spatial variability of mercury in local watersheds, and her results show mercury bioaccumulating in the St. Louis watershed. She plans to transfer to the University of Minnesota Duluth for her Bachelor’s degree, and is extremely grateful for the opportunities that have been presented to her through [FDLTCC’s Environmental Institute](#). This year, she planned her college’s Earth Week with the theme “Sustainability Starts with You.”

Heather Buttgen, a student at the Fond du Lac Tribal and Community College, always knew that she wanted to study science, but was not sure where to begin. With the help of a few mentors, she now studies the bioaccumulation of mercury in the St. Louis watershed. Fish are an important part of a traditional tribal diet, and the contamination of water in the St. Louis watershed has disproportionately impacted the health of local tribes. Buttgen called for more outreach to Indigenous youth about the opportunities available to them in the environmental sciences. She will continue working on research projects like these as she completes her Bachelor’s degree in Marine and Environmental Science at Alaska Pacific University.

After each student presented their research, they offered some advice to other Indigenous students involved in research programs. Some of their ideas included finding programs within Western science that parallel Indigenous knowledge, finding a mentor that Indigenous students can trust and that allow students to be Indigenous scientists, knowing that you can say “no,” being your biggest advocate, and connecting with your spirituality.

In response to the question “what would help you?”, the panel participants mentioned their search for opportunities in the Duluth area, and their desires for agencies to hire more Native people, to train students in grant writing, to include “building capacity” when writing grants, and to educate themselves on Indigenous protocols and procedures regarding research. Work needs to be done within institutions as the foundational education system is biased. We must change the entire paradigm of what culture is, redefining it to include Indigenous ways of knowing as integral parts of culture, and therefore science. Many science programs and institutions are still settler colonial-based, and there are various injustices in this gatekeeping. We must educate differently and instruct our teachers on how to teach the truth. Decolonizing the education system and other institutions is essential to support Indigenous students in their future endeavors.



Breakout groups

Over the years, Rising Voices annual workshops have focused around a set of themes, including water, relocation, health and livelihoods, phenology, and energy. Continuing on the Rising Voices approach of organizing small group conversations, this year we brought together a set of breakout groups to focus on projects that address these themes, from the Great Lakes Region and those that have emerged from Rising Voices conversations and relations.

Indigenous mentoring and the sciences

Paulette Blanchard, Absentee-Shawnee/University of Kansas, moderator

The Indigenous Mentoring and the Sciences breakout group focused on challenges with being Indigenous and creating allies and opportunities, experiences for ourselves, and striving to do what we need to do for Indigenous people were discussed. Questions were asked about, Where can mentors be sought out and who is safe to seek out? How do we, as students, continue moving forward?

How do we, as students, continue moving forward?

Discussion included both the positive and negative experiences, or challenges, of being Native and being in Sciences incorporating TEK and Native sciences into the work we do. The group also discussed what attributes makes a good/bad mentor, how to protect ourselves and our communities while still doing good work, and also the importance of students because they are the future. Being part of discussions is critical and it is important to discuss together what we know, see, hear, and experience through this unique opportunity to reflect back on.

Building resilience through climate change adaptation planning and implementation

Tansey Smith and Tyler Kaspar, [1854 Treaty Authority](#), co-moderators

The Building Resilience through Climate Change Adaptation Planning and Implementation group's main focus was discussing how to build resilience to changing climate conditions with the understanding that adaptation planning and implementation include engagement with various disciplines, sectors, organizations, collaborations, and partnerships. The engagement of multiple partners in a collaborative process can integrate the best available climate science with local knowledge and enhance personal and professional connections between project partners. It is these partnerships that will be instrumental in assisting a geographic region or Indigenous territory to adapt to changing climate conditions. An overarching question that cut across the group's discussion included, How do tribes empower their environmental sovereignty?

During this discussion, the Makah Tribe was brought up as an example of how to contextualize various plans into one that will work for the tribe. Questions on how to work with multiple areas in the same region and strategies to effect (yearly) work within a community framework were also raised. Climate change and health were discussed alongside questions of: what do we call usable data science? How is the information/data being used? How can we make it understandable? And, do we need to organize data to check whether we have too much or too little?

How do tribes empower their environmental sovereignty?

Discussion also included a focus on process and restructuring current models. Within this, co-producing (partnerships, incorporating Indigenous knowledge), products, feeling disempowered, language uses, and rethinking end users were key points that need to be worked on. Project partner oversight is important as well because everyone needs to consider how involved they each want to be. Funding is needed to continue work and relationship building. A percent of state funds should include tribes and include meaningful guidelines. There is also a misconception about collaborations, and that collaborations do not constitute hosting a workshop or a webinar after the fact. Partnerships need to work together to express a common need in order to be successful in funding (e.g., specific information from a region that can be for all those in partnerships). The group also discussed the BIA Tribal Resiliency grants are still available and there is a Tribal liaison for each of the Department of Interior Climate Adaptation Science Centers, that could be contacted.

Relocation/resettlement

Melissa Watkinson, [Washington Sea Grant](#), moderator

The Relocation/Resettlement group was formed as a space for members of Shishmaref and Isle de Jean Charles to speak about and update us on what is unfolding in their communities' relocation/resettlement processes.

Shishmaref

Several Native Village of Shishmaref residents (Annie Weyiouanna, Fred Eningowuk, and Frieda Eningowuk) provided the group with updates, with the first point made about language and wording. The word “relocation” was removed through a local election when the community decided to move to the main land. Rather than using the word relocation, they have changed this wording to “site expansion” because it will enable more projects for the community. For example, since this change was established, Shishmaref has been able to more readily work on getting paved roads, a new sanitation room, and fixing the airport.



Nonetheless, they still need money to build an additional seawall to protect their sealand from erosion. Other projects that need to be funded are the tank farms, which have been deteriorating and is a disaster waiting to happen if funding is not provided immediately to prevent this.

Shishmaref is a community without running water. The clinic, school, and cafeteria are the only ones with running water, and this is affecting the health of the community. During winter, they can drink ice water and during rainfall season, they have that water supply available. However, these water resources are not available year round. We need to think about this because in their home, they have to work for their water.

Currently, Shishmaref has funding from the [Denali Commission](#) for their expansion efforts and they are trying to get land through the [Bering Land Bridge National Preserve](#). This plan was introduced once and was turned down but it is now being attempted again. Until this expansion is able to be accomplished, a quarry will be utilized for protection of their land until they can move to the mainland. Shishmaref has also developed [Strategic Management Plans](#), which are to be used between now and the time when they relocate. The 5, 10, and 15 year plans were developed by doing door-to-door surveys and interviewing all members residing in Shishmaref.

We need to take care of each other.

There is a coalition that is made up of the City of Shishmaref, the Shishmarif Native Corporation, the City Council, Tribal Council, the Elders, and the Youth, which holds monthly meetings to help their work continue to move forward. Their community supports each other, which is an important part to getting things done. Besides this community coalition, there is a separate coalition between Shishmaref, Kivalina, Shaktoolik, and Newtok. They are working together on their projects. Newtok is a bit more advanced as they already have some infrastructure built in their new site location. Shishmaref needs equipment to build their infrastructure.

Isle de Jean Charles

Boyo Billot (Deputy Chief) and Deme Naquin (Tribal Advisor) from the Isle de Jean Charles Tribe updated us on their resettlement process. They have been fighting for resettlement for nearly two decades, when the Tribal Council made the difficult decision to relocate after the US Army Corps of Engineers re-aligned the [Morganza to the Gulf Hurricane Protection Project](#), leaving the Island outside of the hurricane protection system.

In 2016, the US Housing and Urban Development—Rockefeller Foundation National Disaster Resilience Competition awarded funds to the Tribe, in partnership with the Lowlander Center, for their proposed resettlement plan. The Tribe has yet to receive the funds, but is working with the State of Louisiana’s Office of Community Development and other partners on the process of whole community resettlement.

The group’s discussion emphasized that funding is needed for relocation, and that it is of utmost importance to recognize that Indigenous communities are not homogenous. Each one is experiencing different things in different ways, but there are commonalities across cultures and geographic spaces, through which people could be brought together to work collectively and support each other. Throughout this group’s discussion the overarching message was clear – we need to take care of each other.

Grassroots challenges in protecting our waters

Jannan Cornstalk, , [Little Traverse Bay Bands](#) Tribal citizen & Water Warrior, moderator

This group focused on grassroots challenges in protecting our waters, learning from recent actions that have unfolded – and continue to unfold – in the Great Lakes region. In September 2015, Jannan Cornstalk organized the [Pipe Out Paddle Protest](#), a flotilla to protest Enbridge Line 5, a major oil pipeline that is most notable for passing under the environmentally sensitive Straits of Mackinac, which connect Lake Michigan to Lake Huron. Enbridge Line 5 threatens the Little Traverse Bay Bands of Odawa Indians’ tribal sovereignty and fishing rights, as well as the drinking water of 40+ million residents in Michigan. The flotilla involved tribal leaders, state legislators, and community members with the goal of raising awareness and knowledge of Enbridge Line 5. Political action is important to bring issues like Enbridge Line 5 to the national level and to build a political campaign.



In this breakout group, participants discussed the importance of building coalitions, collaborating with like-minded groups, working with tribal leaders and state legislators, outreaching to national news sources, advertising on various social media platforms, and involving the youth in building a political campaign. The group discussed the many challenges that exist when building a grassroots political campaign, but were able to find solutions to each challenge. Some of the challenges and respective solutions the group articulated are listed below:

Challenge	Solution
Western ways of thinking and ideologies; corporate power (cannibalistic, capitalist)	Include the spiritual dimension in your campaign
Participation and individual struggles	Increase outreach to other cities and tribes; build strong relationships and collaborate with others to increase participation & impact; frame ideas for your audience; support and encourage each other; miigwech; people power!

Visibility	Chi-jiimaan from each Great Lake, Montreal canoes (re: Enbridge Line 5)
Money, funding	Busch Foundation, NCAI (re: Enbridge Line 5); purchase organic products; invest in renewable energy/sustainable solutions when possible
Partnership and collaboration	Agreement with a 501(c)3 organization (e.g., Unitarian Church, Greenpeace, 350.org); work with universities; Indigenous water symposium, Turtle Island; share all information with local tribes; advertise on tribal radio stations and social media platforms
Autonomy	Recognize the difference in issues at the state vs. federal level (re: lawsuits); tribes are sovereign nations
Widespread false information	Invest in education for Indigenous people; change the education system; youth conservation corps

INCLUDES: Collaborative research between four communities and NCAR to enhance hydrologic understanding

Sage Nishida (Olohana Foundation) and Sara Herrin (GLOBE/UCAR), co-moderators)

This group focused around sharing what has evolved from an NSF-funded INCLUDES project, which emerged from collaborations built through Rising Voices between representatives from NCAR and GLOBE/UCAR and participants from four communities in Hawai'i, Wisconsin, Arizona, and Alaska. This breakout group discussed the various goals and outcomes of the INCLUDES program, which aims to increase diversity in the geosciences and other STEM fields. Community members from each of the four communities are responsible for collecting, monitoring, storing, and sharing their data with tools and other assistance from NCAR. Through this process, Native students are trained to do Western science without being forced to separate their culture from their research, and Western scientists are trained on how to work with Indigenous groups.



Community members collect data, decide what variables will be collected, determine what information will be put into a database, and help incorporate the data and knowledge to make it available to the broader community. Indigenous knowledge is not explicitly outlined in data tables, but is used in data collection (e.g., looking at the differences of farmland that uses natural irrigation vs. dry farming). If the community decides to incorporate the arts with their STEM research – putting an “A” in STEM – they can find an artistic way to share their data using storytelling, music, dance, etc. The goal of the INCLUDES

program is not necessarily concerned with the data that is collected, but is more focused on building capacity and gaining understanding of each other's languages (e.g., Indigenous and Western sciences).

Finding trusted allies and building partnerships is essential to this work. In the future, participants in the INCLUDES program plan to use culturally relevant forms of communication to convey data and findings, and hope to expand and partner with other groups, organizations, and communities.

Phenological observations and climate adaptation

Chris Caldwell ([College of Menominee Nation-Sustainable Development Institute](#)) and Brian Miller ([Indigenous Phenology Network](#) / [North Central Climate Adaptation Science Center](#)), co-moderators

The phenological observations and climate adaptation group attempted to answer the question, "What would an ideal phenology project look like, connected to Rising Voices?" Group members agreed that knowledge should be shared in an appropriate and safe way for our communities. In addition, connecting with the [Indigenous Phenology Network](#) could allow phenology-related research to become more integrated and help to bring a broader community together.

Other suggestions for creating an ideal phenology project included:

- Incorporating elders, students, teachers, and other community members in phenology research projects
- Working internationally and stressing the importance of collective work over individual projects
- Supporting Indigenous communities through both public and private partnerships
- Working at the intersection of education/TEK and Western science, developing curriculum focused on seasonal rounds, and developing a research template that can be filled in by community members
- Using phenology to bring people from different backgrounds together
- Trying to incorporate mindfulness and decolonization in phenology while having fun and building relationships
- Serving *all* citizens and sharing information with trusted groups
- Establishing a space to mentor students, creating a grant that students can work on, providing externships, and training grad students in phenology research projects



Indigenous ethics for community-based research engagement

Dominique David-Chavez (Colorado State University), moderator

The Indigenous ethics for community-based research engagement group focused on the Indigenous ethics and principles that guide research, and how a legacy of mistrust and historical trauma exists in Native communities. Members also noted the importance of finding and applying Indigenous

terminology, and normalizing the language and values of established ethics in the research sphere. The group brought special attention to the idea that funding for research projects should be tied to actions that demonstrate adherence to ethical community principles. In addition, there was consensus that Indigenous voices provide a link to scientific integrity, and must be given more opportunities to be present at scientific tables.

Intertribal gathering of Traditional Ecological Knowledge (TEK) as an integral part of assessing potential climate change impacts on treaty rights

Hannah Panci and Melonee Montano, [Great Lakes Indian Fish and Wildlife Commission](#), co-moderators

Stemming from their work through the Great Lakes Indian Fish and Wildlife Commission, Hannah Panci and Melonee Montano shared some key points and understandings about meaningful engagement with tribes and TEK, including that it is important to:

- Include tribes in drafting best management practices (e.g., co-management of the Apostle Islands)
- Understand who you're meeting with, particularly the dynamics and governance and leadership of the tribe.
- Look at beings not just from a scientific perspective but also the importance of them unto themselves.
- Understand how stories are shared and really knowing the meaning of what people are saying.
- Taking the time to meet with people is important. Let people talk and tell you stories in their own time. This cannot just be on your schedule.

One question the group raised for the process of engaging tribes and TEK in particular was how to structure the interviews. Participants shared ideas about making the focus qualitative and not getting caught up in the numbers. Provide people with the time and space to talk, and don't make them stick to such a structured interview guide; notes can be organized later, but allow people to more freely talk in the moment. When notes have been taken or transcribed, give people the time to review them to make sure that you recorded what they said correctly and/or you understood the meaning of what they were saying. It can be helpful to bring maps and photos with you to give people a reference point to speak from and share stories and information. It is important to bring an offering (e.g., gift, tobacco, stipend) to show appreciation.

Considering participant selection, having a minimum number you want in mind is necessary, but you do not need a cap. One strategy that works well is to allow people to suggest others to talk to, and go from there; a lot of participants come from existing relationships and word of mouth referrals.

When considering best practices for individual and community consent processes, relationship building and trust is essential. Again, an offering of appreciation is important. Tobacco sharing, for example, can demonstrate the reciprocal commitments to each other. This is a conversation where the researcher is talking with communities and tribes, not just studying them. It needs to be made explicit that the tribes own the information, and make clear the different 'levels' of information and what can and cannot be shared more publicly (e.g., numbers can be shared but sacred stories wouldn't be). It is important to understand that not all things can be shared with you. You cannot come to the tribes just at your convenience, it needs to be on their terms and time. Establishing a memorandum of understanding between the tribe and outside group/researcher is helpful to guide the process, respectfully.

G-WOW: Integrating TEK with Climate Science through service-learning climate change literacy program

Cathy Techtmann, [G-WOW](#) / [University of Wisconsin-Extension](#), moderator

Discussion of the G-WOW group (short for “Gikinoo’wizhiwe Onji Waaban,” or “Guiding for Tomorrow”), led by Cathy Techtmann, focused on the current environmental issues facing Lake Superior, and the project’s goal to “engage people to take action on climate change through awareness of how a changing climate impacts their culture and community.” Techtmann additionally introduced the G-WOW Model, which is to:

1. Pick a cultural or economic practice.
2. Identify the key species or habitat necessary to support this practice.
3. Accumulate place-based evidence, or an observation of what subsequent changes occur in the habitat or within a species or community.

Reflections from Day 2

The final day of the workshop began with a short reflection on the first two days. Before introducing the third and final presentation panel, Julie Maldonado reminded us that Rising Voices was created as a space to come together and discuss actions, what to do with the knowledge we have gained, and where we can and should go from here. This helped us to transition into the day’s reflection panel titled “Where we’ve been and where we go from here.”

Reflection Panel

Rising Voices: Where we’ve been and where we go from here

Jean Tanimoto, NOAA Office for Coastal Management, moderator

Paulette Blanchard, University of Kansas

Kuaihelani Burgess, Kamehameha Schools

Chris Caldwell, College of Menominee Nation-Sustainable Development Institute

Michael Chang, Makah Tribe

Lea Kekuewa, Kamehameha Schools

Shannon McNeeley, North Central Climate Adaptation Science Center

Bill Thomas, NOAA Office for Coastal Management

Our final panel, a reflection panel, focused on future directions for collaborations within the Rising Voices community and beyond. Jean Tanimoto from the NOAA Office for Coastal Management and moderator for the panel, stressed the importance of working as a family, and not as the institutions that we may be a part of. It can be difficult to work within the system and its various institutional agencies, but it is often necessary work. Reminding ourselves that we are all family can help to ease this process. Tanimoto offered much hope for what is coming next, drawing much of her inspiration from younger generations and intergenerational learning.



The first panelist speaker was Chris Caldwell, the Director of the Sustainable Development Institute at the College of Menominee Nation. Caldwell recognized that we still have much work to do, but we are constantly learning from and with each other. Rising Voices, similar to the Sustainable Development Institute, is still growing. He hopes that both entities will intertwine and continue to grow together in the future. We must also help our students by raising them up, fostering, protecting, and empowering them. Caldwell asked NCAR to show their commitment to Rising Vices by writing the program into their strategic plan. NCAR can provide the logistical framework to empower Indigenous communities and Indigenous sciences. Indigenous people should always be brought into planning processes, and Indigenous communities should be in charge of the projects that affect them.

Shannon McNeeley, a research scientist at the North Central Climate Adaptation Science Center at Colorado State University, reflected on how far we have come in regard to discussions about climate change, implementing adaptation projects, and including Indigenous peoples' perspectives in such projects, as well as national efforts, such as the [4th US National Climate Assessment](#). It is essential that agencies hire more Native people, provide more funding opportunities for Indigenous organizations, and support Indigenous students across all educational institutions. There is much room for improvement in



regard to leadership in many climate science centers, and McNeeley recommended creating an exchange program between science center directors and Indigenous communities. Western scientists must promote true co-production with tribes, and Indigenous participants in research projects should be treated as partners and collaborators who are funded. In the future, McNeeley recommended that there be more working groups focused on creating guiding principles and documentation to get information out there as a collective.

The third presentation was given by Bill Thomas from the NOAA Office for Coastal Management. Thomas wants to bridge the gap between Western science and the relevancy of Indigenous practices that inform science. It is important to build strong relationships, bringing people from different backgrounds together and strengthening pre-existing coalitions. Collaborative projects are often more far-reaching in terms of importance and impact than individual projects. Thomas told his audience to “do something” — form

coalitions, go to Congress, tell them they need to change. But we must also strengthen our listening skills and recognize our position in setting the table for the next generation. By being quiet and listening, this is how we learn. Thomas agreed that being Native in a federal agency is both interesting and frustrating; agencies are slow and can be unfair and hard to work with. Nevertheless, Indigenous practices, such as algal identifying and naming practices, are now being published in peer reviewed science journals, and we should hope that this will continue to grow in the future.

Paulette Blanchard (Absentee Shawnee), the fourth panelist speaker, reflected on the continuous safe space that Rising Voices has provided to Indigenous peoples. She echoed earlier sentiments that agencies can be slow, hard to work with, and can make mistakes, but they can also make corrections for their mistakes. In the six years that Rising Voices has existed, there have been many changes within involved institutions. Students are learning to be Native scientists, to be professional, and to have etiquette and protocol. We must create spaces where all of these different aspects of science can mix. She recommended that individuals read *Blackfoot Physics*, *The Metaphysics of Modern Existence*, and *Braiding Sweetgrass*, books that bridge spaces in the scientific community and represent deep science from an Indigenous perspective. Blanchard stated that “human and physical science cannot be detached,” and collective experiences and efforts are necessary to make things better. We must always ask for permission, recognize that we are always guests of the land, and be prepared to give something back. Western science is designed to oppress Indigenous peoples, but we must keep building this bridge between different communities to create a new path. Blanchard left her audience with this piece of knowledge: “Without you, the systems stay the same. As long as you keep wiggling, the vultures can’t peck your eyes out.”

For Michael Chang, the climate adaptation specialist for the Makah Tribe, Rising Voices feels like collective therapy and is the conference he looks forward to most every year. Chang reminded us that change within institutions is necessary work, and those who work in state agencies should be blazing trails. If you run into pushback, know that Rising Voices provides a network of people that can offer assistance and guidance. Sometimes it may feel like you are trying to tackle climate change alone, but we are here to offer help, and we can all do more collaboratively. Tribes are often pitted against each other through top-down governmental management approaches. We need to get away from this mentality in order to work together against our common enemies. We also need to focus on education (K-12 and above), provide more opportunities for all Indigenous students, find and support mentors for Indigenous students, change the paradigm of only old white men as scientists, and address non-binary gender identification and multiracial identities within Indigenous communities. The process matters—it takes time to educate and to build trust, and you won’t do anything well if you don’t trust the people you are doing it with. Recognize the value in talking, processing, thinking, and doing—all of these actions are equally important and will strengthen any project or other collaboration.

The final two presenters on the reflection panel were Kuaihelani Burgess and Lea Kekuewa from the [Kamehameha Schools](#). Burgess began recognizing the differences in issues faced between Native Americans and Native Hawaiians, and she acknowledged that we can all learn from each other. It is especially important to have youth voices heard, and future Rising Voices convergences will benefit from involving even younger people (students from grade school through high school) in these conversations and issues. The younger generations are the future, and there is a responsibility for youth to be inspired to continue carrying this ancestral knowledge. Burgess also commented on the disconnect between youth and elders, as youth are often left out from these important conversations and are therefore less likely to be passionate about these issues. We must recognize the value in including younger people in

conversations about Indigenous rights and Indigenous science, as it helps them to connect to the past and learn about the connections their ancestors had with the land.

Kekuewa, agreeing with Burgess, reiterated the idea that youth want to change the paradigm and the system. She helped to start a club called the Youth Climate Initiative, which currently focuses on storytelling as an impetus for the intergenerational transfer of knowledge. Indigenous knowledge is known as an inherent way of living, but is not yet seen as scientific knowledge. In order to protect this knowledge that is seen as no longer necessary, we must start more conversations with Indigenous people— students, elders, and everyone in between—discussing how they understand and see the world. We must address ethics (or lack thereof) within agencies and institutions, collaborate in agencies through younger Indigenous people, and we must always do what is right. Everyone is family, the world is family, and we must live with love and respect. Finally, Burgess and Kekuewa agreed that youth feel empowered by attending Rising Voices, and more students should be given the opportunity to do so.

Plenary Discussion

The third and final day of Rising Voices 6 concluded with plenary discussion where anyone in the audience could speak about their thoughts, concerns, and suggestions going forward with this network. One of the first to speak was a tribal member who thanked the organizers and said they knew that Bob Gough was with us on this day. They then proceeded to make a suggestion for Rising Voices by letting its organizers know that it would be great if Earth Law and the Economics of Happiness could be involved. After all, if corporations can give rights, so can nature. “There are multiple groups working in policy and law involved in fighting that could help us more. We don’t need corporations to survive. We need people to survive. It is our generation and the people in our lives today that will make a change. We have a role to play and the people that show up are the ones that want to make a change.”

“We don’t need corporations to survive. We need people to survive. It is our generation and the people in our lives today that will make a change. We have a role to play and the people that show up are the ones that want to make a change.” – Rising Voices 6 participant

Carolyn Brinkworth (UCAR) followed and responded to criticism of federal agencies and science institutions. “We have heard all the criticism towards organizations such as NCAR/UCAR and they respect that because it means that they think they matter and they are not hopeless.” They will work to get Rising Voices and Indigenous communities involved in the strategic planning and get them more involved. They do know that agencies should spend more time in Indigenous communities and would love to work on the exchange program to send someone to Indigenous communities to engage and spend more time, and vice versa for bringing community members to NCAR.



Larry J from the Wolf Clan, Michigan Tribal member and Anishinabee talked about being at risk growing up and of his apprehension to technology, and also toward acronyms because he feels that they are narrowing. “[We] don’t don’t want to be boxed in and be placed into categories. A lot of students don’t know where they’re going but just because of that does not mean they should be placed into a specific box.” We need Native educators and mentors, and here is the push for a new path using traditional/Western education. Einstein said we cannot solve

problems using the same level of consciousness but here we are trying to solve our recent problems using the same language created by the system. This needs to change. We need to escape survival mode and victim mode, and trust that we were made to succeed. “You need to take it personal. Many people think in terms of this concept of ‘not in our backyard.’ However, it is in our backyard. Reach one. Teach one. We are more powerful than we think we are.” The least we should do is pray to the water at least once a day to thank it for helping us. Water is sacred. Water is life. Larry ended by saying this phrase: “You don’t set out to be a leader. You just set out to do.”

Jamie Colvin, from Oklahoma, thanked the organizers for allowing everyone to come up and speak. This was their first conference, they have learned so much, and appreciate the opportunity to be there. They go to Haskell, are studying Environmental science, and is one of the Eco-Ambassadors there. They said that Dan Wildcat has been an inspiration and ended by giving an offering of sweetgrass to Heather and Julie.

Kuaihelani Burgess, a Native Hawaiian, spoke next. This was her first Rising Voices and she thanked everyone for being there. She works for a trust that was set up for Native Hawaiian education and faces a lot of issues with discrimination. She also works in community outreach and advocacy and Native Hawaiian rights. “The natural resources give us our identity. We are Hawaiians because of our land.” Kuaihelani was grateful to hear that we can’t move forward living in the same paradigm. Culture versus academic success needs to not be the case. “It is our Native knowledge and leadership that will change what needs to change. Community success is individual success. It is no longer about choosing either between the community or the individual.

“It is our Native knowledge and leadership that will change what needs to change.”

– Kuaihelani Burgess, Kamehameha Schools

“We are all one people.”
– Fred Eningowuk,
Shishmaref, AK

Fred Eningowuk from Shishmaref, Alaska talked about how algal blooms are affecting marine mammals. Climate change is affecting their way of life, phenology, and wildlife. He spoke a bit about Shishmaref and what is happening there. He ended by saying, “I applaud you all for inviting us all to Minnesota. We are all one people.”

Noel Plemmons, a graduate student who also works for a charter school for students who do not typically succeed in traditional school systems, asked if there are ideas to share on how to teach science teachers to incorporate the importance of Indigenous knowledge in the classroom. Elena Sparrow (University of Alaska-Fairbanks) responded that the Climate Science Alliance offers a guide for culturally responsible science and a training in Fairbanks for educators and community members.

Mychel Thompson ([Navajo Technical University](#)) from the Navajo Nation shared part of their fundamental law: a thank you to life and the natural world. She talked about “our ancestors [being there] with us and listening to us,” and about how this workshop has underscored the importance of Indigenous knowledge. She said that it has been a hard road but was thankful to be there and have the knowledge and privilege to talk to many people and learn more about what can be done. As a trans woman, she felt so comfortable around everyone here. Thank you.

Tansey Smith (1854 Treaty Authority) shared that she felt like everyone here is doing meaningful work. She saw our ancestors here. They are listening and they are here with us. She’s not afraid to speak

because she feels like she's with family. Make it personal, and remember our ancestors are here with us.

Miles Gorgon expressed that this was the first Rising Voices they attended and it really underscored the importance of scientists working with Indigenous peoples. It was a powerful and humbling experience. "Thank you for letting me in."

"Make it personal, and remember our ancestors are here with us."
– Tansey Smith, 1854 Treaty Authority

Dominique David-Chavez, a Caribbean Native, currently doing a PhD as a first-generation college student, thanked everyone who put the workshop together. She shared how she had started with her graduate program four years ago, experiencing hurricanes in study sites, how Elders were stuck with no medicine and her work has been hard. She thanked everyone who took the time to speak to her there, and shared a story of hope: all the crops had been wiped out but a root crop, which is the most important to elders. "Know your roots" metaphorically and food wise. Even when everything was stripped away, the roots remained.

"Know your roots...Even when everything was stripped away, the roots remained."
– Dominique David-Chavez, Colorado State University

To conclude, Heather thanked everyone for sharing and returning us to the quilt, the chair for our ancestors and for those who were not there. These are reflections on our past and what is coming next. If any more thoughts or questions occurred to anyone about what Rising Voices can do, they could let them know. Julie talked about the importance of "process matters." She wanted to bring to light that now we are comfortable enough with each other to have tough conversations, and face those bumps and challenges that we would not have been able to address or change the first time we met. "We are growing together. What is the collective story that we want to tell?"

Last but not least, two youth, Lea Kekuewa and Kuaihelani Burgess, Native Hawaiian youth, sang a song to dedicate to our ancestors, to Bob Gough, and to everyone present.

Closing Ceremony

This year's Rising Voices closed with a ceremony led by Lyz Jaakola ([Oshkii Giizhik singers](#)). Everyone formed a circle, as Lyz guided the group, drumming and singing a song of unity. A jar of tobacco was passed around the room. Each of us was asked to grab a bit of this tobacco and put our prayers and wishes into it. Sage was burned and passed around the circle so we could cleanse ourselves with the smoke. As the singing continued and those comfortable to do so gave thanks in their language, each person went around the circle and gave thanks through a hug or handshake to every other person in the circle.

"Dear past, thanks for all the lessons.
Dear future, I'm ready."

– Bill Thomas, NOAA

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RISING VOICES WEBSITE: www.risingvoices.ucar.edu

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