

NOAA Environmental Literacy Program 2023 Resilience Education Grantee Workshop

Report of a Workshop convened by the NOAA Office of Education

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Boulder, CO

Sponsors: NOAA Office of Education, the North American Association for
Environmental Education, and the University of Colorado - Boulder



Credit: Katie Wolfson (UCAR - Center for Science Education)

Nomenclature

<i>BIPOC</i>	Black, Indigenous, and People of Color
<i>CELC</i>	Coastal Ecosystem Learning Centers
<i>CIRES</i>	Cooperative Institute for Research in Environmental Sciences
<i>CLEAN</i>	Climate Literacy and Energy Awareness Network
<i>DEIJ</i>	Diversity, Equity, Inclusion, and Justice
<i>ELP</i>	Environmental Literacy Program
<i>NAAEE</i>	North American Association for Environmental Education
<i>NCAR</i>	National Center for Atmospheric Research
<i>NOAA</i>	National Oceanic and Atmospheric Administration
<i>OEd</i>	Office of Education
<i>UCAR</i>	University Corporation for Atmospheric Research

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Introduction

Acknowledgements

Support for the workshop was provided by [NOAA Office of Education](#) (OEd), the [North American Association for Environmental Education](#) (NAAEE), and [University of Colorado - Boulder](#). We also want to extend our appreciation to members of the planning team, Anne Gold ([Cooperative Institute for Research in Environmental Sciences, CIRES](#)), Ariel Lumpkins (NAAEE), Daniela Pennycook (CIRES), Grace Pugh (NAAEE), Katya Schloesser (CIRES), and T'Noya Thompson (NAAEE). We also appreciate the technical support provided by the staff from the University of Colorado (CU) Boulder.

This report was written by Nicole Fernandes, Christopher Nelson, John McLaughlin, Maggie Allen, Shadaesha Green, and Alfonso Macias Tapia of OEd in consultation with the Environmental Literacy Program co-leads, Carrie McDougall and Sarah Schoedinger. These co-authors were also part of the planning team for the event. The recommended citation for this work is as follows:

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The [Environmental Literacy Program](#) (ELP) appreciates the support and engagement of all participants; in particular we thank Louisa Koch, Judy Braus, and Christine Wiedinmyer, for providing opening remarks. We also thank our keynote speakers, Parker McMullen Bushman and David Sittenfeld, as well as the moderators and panelists. Additionally, we thank our facilitators and note-takers for helping with the breakout sessions: Amy Clark, Bronwen Rice, John Baek, and Will Lyons.

Finally, we would like to thank all the participants for bringing their great ideas and enthusiasm to the workshop. Your passion for resilience, insightful contributions, and willingness to learn from other projects made this event a success. It was great to see the many collaborations that form during the course of the workshop. Your dedication to creating a sustainable future is truly commendable, and we hope you will continue to apply what you have learned to make a positive impact in your communities.

In addition to recognizing the people and institutions whose contributions made this workshop a success, we honor and recognize the many contributions of Indigenous peoples who have been stewards of the land that we all live on and that is the center of

our environmental education programs. ELP programs work on Indigenous and Tribal lands all over the country (<https://native-land.ca/We>). As a community, we humbly strive to learn from the Indigenous stewardship and love of the land and apply those lessons in the work we do in our programs. The University of Colorado-Boulder is located on the traditional territories and ancestral homelands of the Cheyenne, Arapaho, Ute and many other Native American nations – their forced removal from their land has caused much harm and devastation. In our work, we recognize and amplify the voices of Indigenous people and their work. In our work, we strive to integrate Indigenous knowledge and Indigenous ways of knowing. As an ELP community, we seek equitable partnerships with Tribal nations and Indigenous partners.

Background

From June 21-23, 2023, NOAA's Office of Education, the [Education and Outreach](#) program at CIRES, and NAAEE, co-hosted the fourth ELP Resilience Education Grantee Workshop at the University of Colorado, Boulder. This workshop convened the recipients of grants awarded from 2015-2023 through the ELP community resilience-focused grants competitions. These grants fund projects that help communities develop the environmental literacy necessary to take actions that build resilience to extreme weather and climate change in ways that contribute to community health, social cohesion, and socio-economic equity. The workshop built on findings from the 2017 workshop at the Museum of Science in Boston, Massachusetts; the 2019 workshop at the NOAA Science Center in Silver Spring, Maryland; and the 2021 virtual workshop.

ELP supports projects that inspire and educate people to use Earth system science toward improving ecosystem stewardship and increasing resilience to environmental hazards (NOAA Education Strategic Plan, 2021-2040). Since ELP's inception in 2005, the grants have supported both formal and informal education initiatives to address NOAA's mission of science, service, and stewardship. As outlined in NOAA's 2021-2040 Education Strategic Plan, individuals should have the ability to understand scientific processes, consider uncertainty, and reason about the ways that human and natural systems interact. Therefore, education plays a critical role in achieving NOAA's mission and vision.

Since 2015, NOAA's ELP grant competitions have concentrated on community resilience education and funded approaches that are climate solutions-oriented, locally focused, and engage, educate, and empower participants to take action individually and collectively (ELP Notice of Federal Funding Opportunity, 2022). Since 2015, ELP has funded 47 community resilience education projects across the United States and territories, with projects ranging in scale, geographic scope, and duration of funding. All of these projects utilize NOAA's resilience assets, which are physical and intellectual resources that can support community resilience and climate change education. Project titles and funded institutions are listed in [Appendix A](#).

This workshop both reconvened those that have met at the previous workshops, as well as introduced new grantees into the community of practice, which serves as a catalyst for sharing information on emerging best practices, challenges, and lessons learned about resilience education across the funded projects. Through this group, ELP grantees are able to connect across the wide network of professionals from many related disciplines that come together to support education for community resilience across the nation.

Workshop Summary

The objectives of this Resilience Education Grantee Workshop were to (1) create personal and professional bonds across individuals and projects, (2) provide information on available NOAA resources, (3) inform the content of the next ELP funding solicitation, and (4) inform updates to the NOAA community resilience education theory of change. Seventy-nine participants attended the workshop. These participants represented 42 institutions across the country, including universities, informal education institutions, community-based organizations, NOAA, and other agencies.

Prior to the meeting, ELP grantees indicated the topics they were interested in exploring. Their input shaped these workshop themes: 1) Engaging underserved students and marginalized communities in climate resilience, 2) Youth summits, 3) Addressing mental health, 4) Collaboration with local, state, and tribal governments, and 5) Future of NOAA's Environmental Literacy Program. These themes were addressed through panels, interactive activities, and smaller breakout discussions. A full workshop agenda can be found in [Appendix B](#).

The meeting included two keynote speakers who discussed strategies for empowering underserved communities to become more resilient to climate change. Parker McMullen Bushman, CEO and Founder of Ecoinclusive Strategies delivered a thought-provoking address and half-day training to help participants recognize the connections between environmental and social justice. ELP grantee David Sittenfeld, Director for the Center for Environment, Energy, and Biodiversity at the Museum of Science, Boston, talked about the power of community data-gathering and science to address local environmental issues, including by those communities that are disproportionately impacted by extreme weather and/or climate change.

The workshop also included a series of panels on topics of interest to the grantees and relevant to ELP. There was also a share-a-thon in which grantees and NOAA staff displayed their products and resources, providing more detailed information about their projects.

Additionally, participants attended a half-day field trip to the NCAR Mesa Lab, where they learned about wildfire management and saw first-hand the effects of the 2022 NCAR wildfire near the lab. They also played the ELP-supported [HEART Force Wildfire Game](#), where they worked to solve challenges that communities may face during a wildfire event.

Summaries of the panels and the breakout sessions, as well as major takeaways from the workshop, are included in this report.

Keynotes Overviews

Engaging marginalized communities in climate resilience: challenges and best practices

Engaging underserved audiences in climate resilience is not just a matter of equity; it is a strategic imperative for creating a sustainable and thriving future for all. On the first day of the workshop, the keynote presentation by [Parker McMullen Bushman](#) focused on engaging marginalized communities in climate resilience by addressing challenges and highlighting best practices. Parker shared personal experiences and insights that underscored the need for inclusivity and equity in environmental and social justice efforts.

Some major themes covered in Parker's keynote included:

- The critical importance of recognizing the intrinsic link between environmental concerns and social justice. They underscored that a truly effective approach to climate resilience requires understanding the broader context of systemic inequalities and injustices that impact marginalized communities.
- How environmental inequities exacerbate pre-existing inequalities in society. Parker discussed how communities already marginalized by various factors, such as race, socioeconomic status, and location, often bear the brunt of environmental harm. This disproportionate impact compounds the social injustices these communities face.
- The idea that systems of oppression affect everyone, regardless of their background. Parker highlighted that a shared understanding of how these systems harm us all, combined with an ecological perspective, can serve as a unifying framework for addressing climate resilience. Ecosystems and communities are deeply interconnected, reinforcing the need for collaborative efforts.
- The concept of communities heavily impacted by the climate crisis as "indicator species." Just as changes in the behavior of certain species can signal broader ecological issues, these communities' struggles foreshadow challenges that will eventually affect all of society. This perspective underscores the urgency of addressing climate resilience comprehensively.
- A call for a reframing of the term "environmentalist" to encompass a broader range of individuals. This includes acknowledging the contributions of those who might not fit traditional stereotypes of environmental advocates. By diversifying the identity of the environmentalist, a more inclusive movement can be built.

- The importance of understanding that asking people to "save the earth" is unrealistic when their basic survival needs are not met. Parker underlined the necessity of addressing immediate concerns such as housing, food security, and healthcare before expecting individuals to engage fully in environmental efforts.

During the second half of the day, Parker led an interactive discussion on anti-oppression and inclusive program design, where participants worked together in a facilitated session to review their programs and consider changes. Overall, Parker's presentation illuminated the need for a holistic, equitable, and inclusive approach to climate resilience. By recognizing the interplay between environmental and social justice, addressing existing inequities, and broadening the concept of environmentalism, the keynote address and ensuing discussion inspired a deeper understanding of the challenges and best practices required to engage marginalized communities in building a more resilient future.

Citizen Science, Civics, and Resilient Communities: Co-Created Science-to-Civics to Facilitate Equitable Climate Resilience Planning



Keynote speaker, David Sittenfeld addressing workshop attendees

Citizen science represents an invaluable asset in our collective endeavor to address the challenges of climate change and build a more resilient future. By bridging the gap between scientific communities and the general public, citizen science empowers individuals to contribute directly to the collection, analysis, and interpretation of data related to local environmental conditions and vulnerabilities. On the second day of the workshop, the Director of the Center for Environment, Energy, and Biodiversity at the Museum of Science, Boston, [David Sittenfeld](#), described a science-to-civics framework for connecting participatory data collection to civic deliberation that he and his colleagues implemented for two ELP-funded projects. He also connected these activities to elements of NOAA's Resilience Education Theory of Change and to the work of other current and past ELP grantees.

David's presentation centered on the Citizen Science, Civics, and Resilient Communities Science to Civics Cycle (Sittenfeld et al. 2022), a framework stemming from his ELP-

funded work. This cycle encompasses three pivotal components designed to immerse participants in the journey from scientific engagement to civic action:

- 1) Participatory/citizen/community science: Initiatives begin by rallying volunteers, in collaboration with civic and community partners, ensuring a comprehensive blend of perspectives. Within the SciStarter portal, one can trace the journey of each participant. A standout project, 'Ripple Effects' from Louisville, Kentucky, zeroed in on extreme precipitation. To engage participants, a photo contest was conducted via iSeeChange, with the winning photographs later displayed at the Kentucky State Fair.
- 2) Public forums: This component accentuates interactive dialogues, often facilitated through games. Participants embark on an exploration of climate-related threats, evaluating vulnerabilities, risks, and stakeholder viewpoints. Delving into various resilience strategies, they then create comprehensive plans that compare solutions based on social, economic, and environmental factors. Every resilience strategy presented offers both macro and micro-level approaches, allowing participants to ponder which solutions best align with their goals. This step culminates with participants assessing potential resilience plans and their outcomes.
- 3) Resilience planning and decision making: The final component underscores the importance of collaborative efforts among planners and stakeholders in resilience planning. It is vital that resilience planners incorporate community-generated local knowledge into planning.

General sessions with breakout groups

ELP Visioning

Presentation Overview

One of the objectives of this workshop was to inform the content of the next ELP funding solicitation, as has been typical for past workshops for this community of practice. This year, however, the ELP team broadened the scope of the discussion to be not only about the next funding solicitation, but also about the future of ELP.

The program is at a natural inflection point. Five competitions have been completed and several projects are completing their 7th or 8th year of implementation. A theory of change was published in 2020 and many new approaches have emerged from the vibrant community of practice. However, the program continues to face demand that outstrips funding availability.

The focus on community resilience that began in 2015 has drawn a remarkable response, with the program's five resilience education competitions attracting 849 applications from all 50 states and U.S. territories. These competitions—with a total federal funding requests above \$385 million—underscore the national need for education to build local resilience against hazards such as extreme weather and changes in the climate. During this period, the program received more applications than in the previous 10 years combined, nearly tripling the average annual number of applications. Consequently, the selection process has become highly competitive, resulting in funding for only 5% of the applications.

Considerations about the future of the ELP were presented by the leads for the program, Carrie McDougall and Sarah Schoedinger, on the morning of the second day of the workshop. The presenters explained a plan to delay the next solicitation publication until the fall of 2025, thereby allowing time for careful consideration and selection of a programmatic model that is adjusted to better suit the levels of requests for grant funding versus the expected levels of funding.

The program will continue to focus on building community resilience informed by the causal pathways laid out in [NOAA's Community Resilience Education Theory of Change](#) (Bey et al., 2020) and the ELP grantee community of practice. K-12 and informal education approaches that engage children, youth, and adults will continue to be supported. The program will also seek further implementation of approaches that have proven to be effective.

The presentation overviewed some of the most notable evolutions of the funding solicitations for community resilience that have occurred between 2015-2022, including: a) an emphasis on concepts from the Community Resilience Education Theory of Change; b) the explicit reference to climate change; c) a broadening to topics beyond STEM; d) an emphasis on diversity, equity, inclusion, and justice (DEIJ) approaches; and e) involvement of smaller, community-based organizations. Following these changes, the types of recipient organizations have shifted to include more diverse, community-based organizations that directly serve more vulnerable groups. Ideas under consideration for future competition models were presented and included:

- Support for building capacity in small-organizations, in part through a membership in the ELP grantee community of practice without the associated funding for a project;
- A scale-up of effective practices through large (multi-institution) network/hub awards focused on training others to implement approaches that have been proven effective. This would involve a primary institution making sub-awards and/or supporting a large number of other organizations to implement the approach;
- A scale-up of effective practices through small awards to individual institutions (note: this is different from the network/hub idea above, in that each award would only fund a single entity to do the scale-up); and
- The leveraging of other NOAA programs that received funding through the Bipartisan Infrastructure Law or the Inflation Reduction Act.

The presenters emphasized that these preliminary ideas are not mutually exclusive. They could be mixed and potentially implemented sequentially over multiple competitions.

Presentation Discussion

Workshop participants were then asked to pair up and reflect on these ideas and to optionally provide some initial feedback, which included:

- A recommendation that NOAA consider offering supplemental awards to existing ELP projects;
- Reservations and skepticism with the idea for funding a network through an institutional hub as such awards tend to favor large institutions that have the resources, capacity, and people to out compete smaller organizations. Further, there can be equity concerns with a large institution having more power to inform both how the funding is spent and who receives it. Ensuring any such awards truly build the capacity of the smaller organizations that receive sub-awards would be paramount.

- If an organization receiving a network/hub award was not already rich in capacity, they might require a larger long-term investment to build their capacity and that could constrain the number of grants given out to the broader community.
- Grants are difficult to acquire and manage, so creating opportunities for mentoring would be useful.
- Network/hub awards would need to focus on best practices that need to be disseminated more broadly and not have high levels of indirect costs to the hub so sub-awardees receive significant benefits.
- There are new funders in this space so we should consider what their interests are.

Breakout Groups

Participants who were highly interested in discussing the future of the ELP in greater depth had an additional opportunity to do so on the afternoon of the third day of the workshop. A concurrent breakout group session, which allowed participants to choose which of five potential topics they would like to discuss in greater depth, featured two groups focused on the future of ELP. Participants in these groups were given an additional week to provide thoughts following the workshop via the workshop survey. Some key take-aways included:

- There is experience among grantees in implementing projects through a hub model and this can help leverage funds more effectively.
- Some participants believe that the hub model is a good way to bring small community-based organizations into the fold, while others believe that it adds an unnecessary layer of bureaucracy.
- There is a concern that the scaling-up requirement may be too difficult for small community-based organizations to meet.
- There is a desire to increase the number of partnerships between small community-based organizations and larger organizations. Some participants suggested that ELP requires a certain percentage of funding to go to community-based organizations.
- It was felt that, for smaller organizations, it can take as much work to write a small grant as it does to write a large one. With backbone organizations, there are power dynamics, which favor the larger institutions. Funders should take care and be mindful of different capacity levels.

- A tiered funding model could be interesting to pursue; however, it must be written in a way to dismantle power structures that are not aligned with the values of this community of practice. Carefully written funding opportunities could promote partnerships with small organizations or collaboration between existing projects or between existing projects and new partners.
- Some combination of a hub/network model, along with efforts to grow small organization capacity, may make sense to meet the goals of the program.
- This community of practice is valuable and different from others in its collaborative nature and spirit of co-learning with program administrators.
- There is a concern that the funding for ELP is not sufficient to meet the demand. Some participants suggested that ELP provide more funding for capacity building and mentorship.
- Some private foundations have eliminated reporting requirements.
- Extension service model (e.g., Sea Grant Extension) is designed to support smaller organizations and leveraging this capability could be considered.
- NOAA needs to determine how to continue to make forward progress with this community resilience work during the gap in funding opportunities until fiscal year 2025.

The ELP team will continue its exploration of new models and consider other funders that are now supporting similar project approaches as it develops the next solicitation.

Collaboration with Tribal, State, and Local Governments

Panel Overview

Engagement with tribal, state, and local governments is crucial for effective and integrated community resilience education. Each level of government has unique responsibilities and perspectives, which will impact the ways in which different organizations collaborate with them. Tribal governments are recognized as sovereign nations, and engagement with them is essential for respecting their rights and promoting their well-being. State and local governments are responsible for implementing policies, and engaging with them can ensure that these policies are effectively carried out and impact the entire population equally. Overall, engagement with all levels of government is critical for promoting cooperation, understanding, and progress towards environmentally literate communities.

During the last day of the workshop, the panel “Engagement with Tribal, State, and Local Governments” was moderated by Sarah Schoedinger (OEd), and the panelists were Robin Saha (University of Montana), Jeremy Hoffman (Groundwork USA), and Gayle Bowness (Gulf of Maine Research Institute).



Speakers of the panel “Engagement with Tribal, State, and Local Governments.” From left to right, Robin Saha, Jeremy Hoffman, Gayle Bowness, and Sarah Schoedinger (moderator).

Panel Discussion

During the panel's Q&A portion two key points were covered. The first emphasized the significance of building trust, engaging with the community meaningfully, and establishing ground up efforts. The second point highlighted the importance of utilizing existing processes and structures, while also being open to exploring new avenues beyond them. Below are some of the discussion points covered during this panel:

- In terms of *partnership dynamics*, first it is essential to figure out how to engage the targeted communities before starting the project's planned actions. Collaborate with nonprofits that are already grounded in the community or capitalize on existing relationships. Finding regional partners, such as a planning office or someone who can provide economic support, can also help build these relationships. Through this process, the organization may find, for example, that these communities already have their own climate planning processes. Forums are a great way to catalyze discussion and bring people into the process. If working on a smaller scale, oftentimes multiple resources are needed. For example, in rural communities there may not be a resilience professional. Overall, it is important to let the community-based organizations lead the way, as this provides legitimacy and recognition from the community. Ultimately, the goal should be capacity building, to work to a point of collaboration where the targeted communities can accomplish the goals on their own.
- Projects may need to adjust their project strategies based on *community feedback*. For example, Saha discussed how they were planning to bring mobile exhibits to tribal schools, but the tribal leaders wanted the students to have experiences beyond the Tribal Nation. Ultimately, the students visited colleges in the city and toured their programs and facilities. It was a logistical challenge, but they were responsive to the requests of the community and therefore successful. There are so many pieces that can be modified with the help of the community to make the project more impactful. For example, a project may have to adjust how they communicate certain issues based on their audience. It is important to plan resources well because it is a long process. If possible, work at the community-level initially, with the goal to eventually connect these communities into regional relationships
- It is essential to *build trust* in the targeted communities. Although it may be uncomfortable at times, learning to listen and accepting feedback allows for an authentic exchange of ideas. A great way to build trust is to involve community participants in co-production and co-ownership of knowledge, as well as continue to report to the community on the project's progress. This collaborative process

incorporates local knowledge from the community and highlights that the organization values what the community already knows.

- If government staff participate in community meetings, it is important to give them an intentional role. For example, the friendly feeling of a community event can be lost when introducing external government actors. In other occasions, for example, the participation of those officials is necessary to validate the project and outcomes.
- Even with good intentions, sometimes organizations end up not following through on their commitment to equity. This promotes multigenerational mistrust in governments and institutions. Therefore, it is essential to work with partners who make that equity commitment part of their work plan.

Breakout Group

The breakout group discussion covered several topics related to environmental projects and community-government connections. These included capacity issues on both sides, differences in engaging with different levels of government, and the role of bridging between community and government. One key point was the potential for learning and collaboration between tribal, local, state, and federal groups, despite differences in structures and approaches. It was also discussed how to navigate situations where the role of the bridge is to simply listen versus actively speak up, and how to ultimately foster collaboration that can make your role in that bridge obsolete.

Addressing Mental Health

Panel Overview

The facilitator framed the discussion around the impacts of climate change and mental health effects that are being felt around the world, particularly among youth. Ecological grief and eco-anxiety describe the sense of loss or the anxiety people feel related to climate change, including the loss of a stable future (Cunsolo and Ellis, 2018; Comtesse et al., 2021). It is important to recognize that youth may feel negative emotions as they learn about climate change and that they need support as they do so.

The first panel held on the second day was composed of grantees who described how their projects address mental health, particularly among youth. Facilitated by Nicole Fernandes (OEd), the panelists included Alicia Christensen (CIRES) Jessica Clemente (WE STAY/Nos Quedamos), Becca Hatheway (University Corporation for Atmospheric Research - UCAR), and Ethan Lowenstein (Eastern Michigan University).

Before starting the panel discussion, and acknowledging that the adults who educate youth must also support their own mental health, the panel facilitator led an optional mindfulness meditation practice. This was a way to prepare participants for the panel discussion and demonstrate one way adults can support themselves and the youth they serve who may experience mental health effects of climate change.

The panel discussed how their projects aim to address the mental health effects of climate change on youth and empower both students and teachers to promote climate resilience. Eastern Michigan University's project focuses on the importance of slowing down and reflecting through art projects to integrate learning that engages the head, heart, and hands. CIRES's project engages communities in learning about environmental hazards and emphasizes the need for hope, innovation, and action in climate change curricula. UCAR's project in coastal Louisiana empowers high school students to learn about hurricanes through data analysis and local stories to promote resilience and community improvement. WE STAY/Nos Quedamos' project empowers local youth leaders to educate and engage their peers in preparation for climate resilience, including rooftop gardening and alternative healing methods. The panelists emphasized the importance of addressing emotions related to climate change and providing opportunities for youth voices and solution-oriented community action projects.

Panel Discussion

The panel discussion centered on the importance of integrating mental health resources effectively for youth programs while also prioritizing staff and personal self-care. The key discussion points covered during the Q&A portion of this panel are described below:

- The panel emphasized the importance of more effectively integrating mental health resources for their programs' youth, while also taking care of themselves and their staff so that they can more effectively serve their communities. Panelists acknowledged that it can be difficult for adults to take care of themselves before taking care of others, but youth can help you slow down and take a step back.
- Educators and students can be partners in sharing their own climate change-related emotions. Youth are eager to share about their mental health as it relates to climate change. If educators can also express their fears and emotions related to climate change, it can be a way to build trust with youth. Intentionally pausing through activities like mindfulness exercises and having fun together through games and using informal spaces can be a way to build psychological safety and community together to help students and teachers alike explore strong emotions related to climate change and plan strategies for taking climate action.
- Panelists discussed that climate justice, within the context of mental health, is especially important given that climate change and other environmental hazards impacts often disproportionately affect underserved communities.
- Discussion on how students can communicate with their parents about mental health and climate change. It was recognized that in many communities climate anxiety is not distinguished from other types of anxiety. For example, the community rooftop gardens in the Melrose Commons can spark conversation on food security, climate issues, and mental health.
- Integrating mental health into climate resilience curricula was a strong theme throughout the session. Climate change impacts (e.g., wildfires) can expose youth to traumatic events and possibly result in trauma-related mental health reactions that affect them, their families, and their communities. Trauma-informed approaches enable educators to recognize trauma-related reactions in youth and how they manifest in a learning environment, and better equip them to support youth.
- Partnering with mental health experts to inform trauma-informed approaches was another prominent theme. CIRES partners with the [Climate Mental Health Network](#) to review and identify strategies and resources, and the Climate Literacy and Energy Awareness Network (CLEAN) [website](#) offers strategies and resources intended to help youth process climate change-related emotions and empower them to take action. It was also suggested that involving school counselors could be a future best practice.

Breakout Group

The breakout group centered on three questions: 1) To what extent has the grantee's program integrated mental health considerations? 2) What types of resources do grantees need for incorporating mental health best practices? and 3) How can the ELP community of practice support grantees' working mental health and resilience?

During the breakout, participants discussed the incorporation of mental health considerations in their programming. Although most rated themselves low in this area, all had incorporated some level of mental health considerations. The South Carolina Aquarium is an example of an organization that has extensively integrated mental health in their programming through the "Your Blue Mind: How Water Affects Mental Health" exhibit. This exhibit takes visitors on a journey through the effects of water on health and well-being by incorporating the five senses and neuroscience. Additionally, the aquarium is partnering with an insurance company to offer a mental health exhibit in the future and Teen Mental Health First Aid training.

Other suggestions included starting programs with "mindful moments," such as meditations and somatic experiencing; encourage teens to participate in wellness challenges, where they engage in supportive activities like taking walks and meditation; incorporate mindfulness and mental health programming more intentionally, especially given the stigma surrounding mental health.

Breakout session participants expressed that they are eager to access resources that would help them support program participants. Partnering with mental health professionals was discussed as one key strategy when planning and implementing programming. Participants expressed that they were eager for youth to lead mental health programming, which can help others open up more about their mental health struggles more so than sessions led by adults. There was also a desire for the ELP Community of Practice to receive trauma-informed training and share resources, such as trauma or mental health toolkits on best practices through webinars.

Youth Summits

Panel Overview

The first panel of the workshop consisted of ELP grantees that were experts in engaging youth, especially through youth summits. Moderated by Lisa Kim (OEd), the panelists included Jen Krester (The Wild Center), Rachel Wellman (Florida Atlantic University), Kate Semmens (Nurture Nature Center), and Katya Schloesser (CIRES).

Although the title of this panel was “Youth Summits”, the overall idea of this conversation was to discuss best practices and challenges about engaging and empowering youth. Whether participants organize formal youth summits or simply engage youth in other ways, the panelists discussed their youth-centered programs and relevant resources and advancements that can be made by other grantees. Key aspects of the panelists’ youth programs are:

- The [Wild Center](#) has been hosting youth summits since 2009 and has been a model for youth summits around the world. Their interactive [map](#) shows over 160 Youth Climate Summits in 22 states and 9 countries. They’ve also developed a [toolkit](#) to help youth start a summit in their own communities and interact with their local governments.
- The [FAU Pine Jog Environmental Education Center](#)’s Climate READY Ambassadors is a 9-month program that is mostly composed of Title 1 high school students. They do hands-on, solutions-based projects, such as restoring mangroves. The students also work with 4th and 5th grade students in after care, highlighting the importance of mentorship and teenagers feeling empowered by educating younger students. Students also worked with the local offices of resilience and sustainability and conducted outreach at community events.
- [Nurture Nature Center’s CREATE Resilience](#) project’s youth ambassador program engaged “residents to document and exhibit the history of local hazards and help lead community-based education events focused on learning strategies for household preparedness and hazard mitigation” ([NNC.org](#)). These paid high school students participated in many arts-based activities, such as designing book jackets with strong visuals to tell the story of climate change. This helped teens envision a future where they would not only have to adapt to the changes to come, but also help their communities become more prepared and resilient.
- [CIRES’ HEART Force Program](#) engages middle and high school students in rural Colorado to take steps to prepare and respond to natural hazards. For example, they’ve developed a Wildfire Resilience Game, where students work in teams to help their communities be more resilient to wildfire. These activities, such as youth

leading a “wildfire expo”, have been shown to inspire action at the local-level, while also encouraging teens to eventually think at a larger, more regional scale.



Speakers of the panel “Youth Summits.” From left to right, Kate Semmens, Rachel Wellman, Katya Schloesser, Jen Krester, and Lisa Kim (moderator).

Panel Discussion

Overall, the panelists focused on the importance of programs that empower youth and give them agency to impact their schools and local leaders. It is necessary that support is provided (such as stipends or school credits) in order for these programs to continue. Successful programs also see students fulfilling multiple roles, from interviewing community members to teaching younger students. Panelists have also noticed that local leaders want to hear from youth, and youth want to be more involved with their community after participating in these programs. They feel a greater sense of community belonging and feel like they can make a difference.

Challenges are still quite prevalent with these youth engagement programs, and range from providing transportation to improving trust of the grantee organizations within the community. Yet the biggest one is student recruitment and retention, which worsened during COVID-19. Therefore, all panelists agreed how essential it is to build connections and trust amongst schools, particularly certain teachers, as well as with organizations at a regional or state level to keep these programs going. Connecting students with these institutions also helps show them they are not alone in working towards climate resilience.

There was also a discussion on how to evaluate these types of youth programs. Panelists said they conduct interviews with participants, such as interviewing alumni of the programs to find out what they got out of the experience or partners to sense their unique impressions. These interviews highlighted that some partners had never worked with youth until involved in these programs, and by doing so, they completely changed their focus. In general, these interviews help analyze progress through the duration of the grant.

Breakout Group

During the breakout group, participants agreed that, although there is not a single way to do a youth summit, they need to be driven by youth, centered around justice and equity, and have an action project that addresses a community need or issue. They also should be place-based, done in partnership with the community, and solutions-focused.

The Ocean Discovery Institute is doing native seed planting with youth. Even though some students do not have a yard or a balcony, they are setting it up for them, and then students are able to bring these plants back to their classroom to help them grow. Not only does this help teens feel empowered, it mitigates urban heat island impacts. Florida Atlantic University also focuses on restoration projects that allow students to grow things in their classroom. Focusing on positive projects like these can center joyfulness and improve the participants' mental health.

As mentioned in the panel, it is also essential to provide financial support to these youth participants. Both the [NOAA CELC youth summit](#) and the Wild Center provide a small amount of funding to their summit participants, which can empower them to implement their projects and feel supported. But before providing this support, ask the students what they need - do they need service hours? Travel cards? This will highlight the best ways to provide access and equity. The Wild Center also gives teens an opportunity to be involved at every step of the process.

There was also a discussion on how to work with adults on these youth programs. It can be challenging to convince teachers to incorporate the grantees' programs into their curriculum or add another field trip or more time away from the classroom. Intentionally involving adults in their projects can be a way to build trust. For example, Nos Quedamos originally started a garden project with just adults, and then it was inevitable that children came along and learned about this program as well. They found that the youth learned a lot by the end of the program and had their own unique ideas. Programs like this build trust with both youth and adults. Eventually, youth can become "climate ambassadors" for the community, talking with adults about these issues, showing that youth are incredibly powerful messengers.

In terms of what is needed in the future, grantees said longitudinal studies could evaluate success over a longer period of time. They also agreed that it would be extremely helpful to have a website that acts as a one-stop shop with various lists of relevant resources. This could also include lists of action projects that have been successful, showing inspirational examples and maybe even project videos that highlight solutions. There could even be a way for youth to connect to each other across projects, such as through a youth science council. Finally, grantees stated they wished this community of practice met every year for continual check-in opportunities. Being together and hearing from everyone is the most valuable resource of all.

Workforce Development

Panel Overview

Workforce development is a critical aspect of education that should not be overlooked. It refers to the preparation of individuals with the skills, knowledge, and abilities necessary to enter and succeed in the workforce. Addressing workforce development during the early stages of education is essential as it lays the foundation for future success. By providing students with the necessary skills and training, they can be better equipped to meet the demands of the job market and contribute to the growth and development of their communities. This is why it is crucial for educators, policymakers, and employers to work together to ensure that workforce development is integrated into the early stages of education in a meaningful and effective way.

The "Workforce Development" panel, facilitated by Frank Niepold (NOAA), included speakers Dennis Chestnut (Faunero Center), Sarah Pidgeon (Solar One), Pamela Carralero (Kettering University), and Abby Randall (EcoRise). The panel discussed several programs aimed at providing training and job opportunities for individuals from underrepresented and disadvantaged communities. EcoRise pays students but faces challenges when some do not have social security numbers or bank accounts. Solar One offers job placement services and solar installation training to show students that solar installation can be a viable career option. The Faunero Center, a resilience hub in D.C., challenges students to identify a career and explore green aspects within it. Kettering University is working with Flint non-profits M.A.D.E Institute and Environmental Transformation Movement of Flint to develop a climate and environmental literacy program for veterans or previous offenders seeking to reintegrate back into the workplace through green infrastructure pathways. The project aims to contribute to the growing market of green infrastructure in Michigan. Members of Kettering University grant believe that understanding history is crucial to building a strong community. These programs aim to help individuals facing barriers to employment and create job opportunities in the growing sector of green infrastructure, while also recognizing and mitigating any potential harm that black, indigenous, and people of color (i.e., BIPOC) students may face in a white-dominated field.

Panel Discussion

The first discussion after the panel overview focused on successful individuals who have gone through the projects' work-based learning programs. A student in Solar One's program, for example, interned with a solar installation company in NYC. This experience was transformational and led the student to pursue an undergraduate degree in solar engineering. Faunero Center offers a construction apprenticeship program for adults

and a pathways program for high school students. One student in the electrical program is too young to officially participate, but is working as a summer assistant. Through partnerships, students have been able to explore various options available in the industry, including AmeriCorps programs. Finally, EcoRise mentored a participant during a heat mapping campaign in his neighborhood, which helped him gain confidence and communication skills. He was then able to work with a community partner and had a role in energy auditing.

The second discussion revolved around the terminology used in workforce development. Some workshop participants believe that "workforce development" can be a barrier for people to see themselves in these pathways. Others think that there are no specific terms to avoid and want colleagues to get more comfortable with the term "workforce development." The discussion closed with how terms like "internship" and "apprenticeship" can be misunderstood, and panelists advised to consider the audience when choosing the language to describe specific terminology.

The final discussion point was about how different approaches and collaborators are needed to promote workforce development when there is no specific sector to support this. EcoRise, for instance, educates people about climate change through student-led projects, and Kettering University is working to bring green infrastructure companies into the conversation. The Faunteroy Center offers a program to subsidize homeowners to flood-proof their homes, and contractors are required to include people from their workforce development program. Solar One has some students participating in virtual internships, which reduces the cost of participation and expands the people that can be involved.

Breakout Group

These were the most discussed topics among this breakout group:

- Workforce development aspects in projects can be *incorporated in a variety of ways* and can help students at different points of their career. They can coach first generation college students to navigate the career process, help students explore different career options, or even work with school districts themselves to help manage their own programs.
- Breakout group participants discussed how to connect workforce development participants to *labor and union jobs* that also build climate resilience. It was noted that unions used to be a lot stronger; they are still trying to bring people in through apprenticeship programs, and unions may still play a critical role in certain communities, but it is more fragmented now. Additionally, there are some

workforce development councils that are taking on roles on things that used to be done through unions.

- *Some levels of government may already be playing a role in this field*, so explore existing partnerships that may already exist, such as the state's governor's office or another federal agency.
- In terms of the *role of K-12 in workforce development programs*, breakout group participants encouraged programs to introduce students to as many options as possible, so that they can find careers that resonate personally. Participants warned that some jobs are going to disappear, and some are going to change, so it is important to understand what the future workforce will look like. As an example of what programs are doing with K-12 students, the Ocean Discovery Institute mentioned that, as early as kindergarten, they host Zoom calls with different scientists, as this exposes students to a huge variety of careers and helps them find common ground. Lastly, it is important to help teachers recognize that they too are climate adaptation professionals, as they do not see themselves as such.
- NOAA and other science agencies are typically much more comfortable hosting academic internships, but breakout group participants stressed the importance of leaning *into apprenticeships*. What area an apprenticeship may typically fall into can be expanded upon, perhaps by exploring new terminology for both apprenticeships and internships. Because there is an aging workforce and no built infrastructure to bring new folks into careers that typically have apprenticeships, this is a big opportunity for programs to expand their scope. Working on communications tactics and exposing students at early stages of their education to these apprenticeship roles are helpful steps at filling this gap.
- Lastly, the breakout group highlighted the *importance of ethical workforce development*. Program leads should make sure that hosts are not being harmful to participants, to look out for implicit and explicit biases. Therefore, it is essential to find the right fit for a mentor and to address imposter syndrome, particularly concerning where students may be placed. The group wondered where their responsibility lay as organizations; for example, if they need to mandate cultural sensitivity training. As the green workforce grows and diversifies, such training is needed to make sure that all feel comfortable in these much needed roles in our society.

Takeaways and Next Steps

By the end of the three-day workshop, participants had connected with other community of practice members, shared ideas, and thought about how their own projects relate to pertinent topics such as DEIJ.

A post-workshop survey was performed, to which half of the attendees responded. About 70% of the respondents indicated that networking was the most valuable aspect of the event. The feedback received that will be useful for future workshops was, the need for more interactive sessions, desire for a group social evening event, more time to interact among attendees, takeaways with more actionable items, and, more time for discussion after each talk.

Participants found the event in which multiple grantees shared products and experiences about their projects particularly valuable. Some of the key aspects highlighted by the participants were the opportunity to network and brainstorm ideas for shared issues. Suggestions for future events included allowing more time for this type of exchange, creating a structure that allows people hosting a table to also visit others' tables, and to do a share-a-thon earlier on the workshop.

The other workshop activity that received a lot of praise was the site visit. More specifically, grantees were interested in hearing from experts on the control and impacts of wildfire in the community and the board game developed for the public to learn about best management practices in communities impacted by wildfire. Multiple workshop participants suggested for future meetings to include this localized and active component. Suggestions for improvement include ensuring that speakers represent the diversity of the community being discussed, including acknowledgement of the native populations in the region and how they are impacted by the topic being discussed (e.g., wildfires), and more place-based opportunities to learn in the community hosting the workshop.

Overall, the workshop emphasized the importance of engaging marginalized communities in climate resilience efforts. The workshop also explored citizen science as an effective approach for facing climate change and creating a more resilient future. Workshop participants engaged in conversations and provided important insight about potential models under consideration for future ELP funding. Additional findings were: engagement with tribal, state, and/or local governments is crucial to effective and integrated community resilience education; the impact of climate change on mental health, particularly among youth and the importance of addressing emotions related to climate change; programs that empower youth and give them agency to impact their schools and local leaders around climate resilience can be effective ways to advance resilience in a community; and, finally, the importance of preparing individuals with the skills and knowledge necessary to enter and succeed in the workforce, with a focus on green infrastructure.

With future funding opportunities, workshops, and collaborations through this community of practice, the ELP will continue to build partnerships and work to advance the field of resilience education in communities around the United States.

Appendices

Appendix A: Participants, Organizations, Project Name

Appendix B: Agenda

Appendix C: Resources

Appendix A: Participants, Organizations, Project Name

Name	Institution	Project Name
Theo Lim	Virginia Tech	A Combined Public Health and Urban Planning Approach to Building Heat Resilience in Southwestern Virginia
Clare Cunningham	Manomet	Brockton Kids Lead the Way
Marina Castellino	Manomet	Brockton Kids Lead the Way
Molly Jacobs	Manomet	Brockton Kids Lead the Way
Abby Randall	EcoRise	Building a Green Texas
Brittany Jayroe	EcoRise	Building a Green Texas
Miriam Solis	University of Texas at Austin	Building a Green Texas (EcoRise)
Jaymee Nanasi Davis	University of Hawaii Maui College	Building Environmental Resiliency Leaders
David Sittenfeld	Museum of Science, Boston	Citizen Science, Civics, and Resilient Communities
Rachel Wellman	Florida Atlantic University Pine Jog Environmental Education Center	Climate READY
Ray Coleman	Florida Atlantic University Pine Jog Environmental Education Center	Climate READY
Elli Bosch	Science Museum of Virginia	Climate Resilience and Community-driven Action Within a Hyperlocalized Public Forum in Richmond, VA
Jeremy Hoffman	Science Museum of Virginia	Climate Resilience and Community-driven Action Within a Hyperlocalized Public Forum in Richmond, VA
Ethan Lowenstein	Southeast Michigan Stewardship Coalition/Eastern Michigan University	Climate Resilience From the Youth Up
Pamela Carralero	Kettering University	Climate Resilient Flint
Kathryn Guimond	University of Wisconsin-Superior	Climate Youth Labs (CY-Labs): Elevating Youth Voices to Promote Climate Resiliency in Minnesota and Wisconsin
Noah Newman	Colorado State University	CoCoRaHS
Nicole Goddard	City of Raleigh, North Carolina	Community Climate Education for a Resilient Raleigh
Gayle Bowness	Gulf of Maine Research Institute	Community Resilience Informed by Science and Experience (C-RISE): Developing knowledge, skill, and relationships to build the capacity of rural coastal communities to plan and prepare for a resilient future

Name	Institution	Project Name
Maggie Beetstra	Nurture Nature Center	CREATE Resilience: Community Resilience through Education, Art, Technology, and Engagement
Kathryn Semmens	Nurture Nature Center	CREATE Resilience: Creating Resilience Through Education, Art, Technology and Engagement
Jennifer Jacques	Ocean Discovery Institute	Empowering Climate Change Resiliency through Education in an Underserved Community
Joel Barkan	Ocean Discovery Institute	Empowering Climate Change Resiliency through Education in an Underserved Community
Jen Kretser	The Wild Center	Empowering Rural Youth for Community Climate Resilience in New York State
Nadia Harvieux	Finger Lakes Institute at Hobart and William Smith Colleges	Empowering Rural Youth for Community Climate Resilience in New York State
Tiffany Harvey	Groundwork Ohio River Valley	Engaging Youth and Frontline Communities in Climate Justice Planning and Action in Greater Cincinnati
Sheryl Sotelo	Chugach School District	Environmental Literacy for Alaskan Climate Stewards (ELACS)
Imani Cenac	We Stay/ Nos Quedamos	Environmental Literacy Project: Youth-Led Community Outreach and Education Initiative to Develop and Activate Climate Resiliency Hubs in Melrose Commons
John Sanchez	We Stay/ Nos Quedamos	Environmental Literacy Project: Youth-Led Community Outreach and Education Initiative to develop and activate climate resiliency hubs in Melrose Commons
Adam Ratner	The Marine Mammal Center	Expanding Capacity of the National Network for Ocean and Climate Change Interpretation (NNOCCI): Training Enhancement, Network Resilience, and Equitable, Inclusive Outreach
Alicia Christensen	CIRES, CU Boulder	HEART Force
Anne Gold	CIRES, CU Boulder	HEART Force
Katya Schloesser	CIRES, CU Boulder	HEART Force
Becca Hatheway	UCAR	Hurricane Resilience
Ali Rellinger	Mississippi State University & Dauphin Island Sea Lab	Increasing Sea-Level Rise Resilience in the Northern Gulf of Mexico
Audris B. Torres	Solar One	Newark Resiliency Solar Initiative
Sarah Pidgeon	Solar One	Newark Resilient Solar Initiative
Dennis Chestnut	Ward 7 Resilience Hub Community Coalition	Nothing Without Us: Building Environmental Literacy, Resilience, and Sustainability in DC through a Multi-Partner, Community-Led Approach

Name	Institution	Project Name
Avery Davis Lamb	Creation Justice Ministries	Participatory Education in Faith Communities for Climate Resilience
Nico Zegre	West Virginia University	Preparing Agents of Change for Tomorrow (PACT): Building Youth Confidence and Capacity for Climate Resilient Futures in Appalachia
Robin Saha	University of Montana	ResilienceMT: Montana Rural and Tribal Community Resilience Exhibit and Forums
Nich Weller	Arizona State University	Science Center Public Forums
Adrian Chase	NOAA Science On a Sphere / CIRES	Science on a Sphere
Beth Russell	NOAA Science On a Sphere / CIRES	Science On a Sphere
Hilary Peddicord	NOAA Science On a Sphere / CIRES	Science On a Sphere
Nicki Rosenfeld	The Maritime Aquarium at Norwalk	Sound Resilience: Get Onboard!
Beth Trowbridge	Center for Alaskan Coastal Studies	Southcentral Alaska Collaborative for Resilience through Education and Decision-making (SACRED)
Heather Sioux	National Wildlife Federation	The Resilient Schools Consortium (RiSCNYC)
Allie Durdall	University of the Virgin Islands	U.S. Virgin Islands Storm Strong Program
Kristin Grimes	University of the Virgin Islands	U.S. Virgin Islands Storm Strong Program
Sierrah Mueller	University of the Virgin Islands	U.S. Virgin Islands Storm Strong Program
John McLaughlin	NOAA Office of Education	
Alfonso Macias-Tapia	NOAA Office of Education	
Amy Clark	NOAA Office of Education / NOAA Fisheries	
Amy P. Chen	The GLOBE Program; NASA Earth Sci Division	
Ariel Lumpkins	NAAEE	
Brian Thill	South Carolina Aquarium	
Bronwen Rice	NOAA Office of Education	
Carrie McDougall	NOAA Office of Education	
Christopher Nelson	NOAA Office of Education	

Name	Institution	Project Name
Emily Yam	Aquarium of the Pacific	
Eric Hackathorn	NOAA Science On a Sphere / CIRES	
Frank Niepold	NOAA Climate Program Office	
Jason Morris	Pisces Foundation	
Juan Pablo Hurtado	NOAA Office of Education	
Judy Braus	NAAEE	
Lisa Kim	NOAA Office of Education	
Louisa Koch	NOAA Office of Education	
Maggie Allen	NOAA Office of Education	
Nicole Fernandes	NOAA Office of Education	
Sarah Schoedinger	NOAA Office of Education	
Shae Green	NOAA Office of Education	
Shilpi Gupta	NOAA Science On a Sphere / CIRES	
Tracy Levstik	NOAA Office of Education	
Willis Lyons	NOAA Office of Education	

Appendix B: Agenda

NOAA's Environmental Literacy Program

Grantee Workshop

Wednesday, June 21 – Friday, June 23, 2023

University of Colorado Boulder

Co-hosted by CIRES Education and Outreach

Agenda (all times in MT)

Wednesday, June 21, 2023

University Memorial Center (1669 Euclid Ave, Boulder, CO)

Aspen rooms on the second floor

8:30 - 9:00 am	Registration check in (coffee and light breakfast available)
9:00 - 10:00 am	Welcome Remarks <i>Carrie McDougall and Sarah Schoedinger (Senior Education Program Managers and ELP co-leads)</i> <i>Louisa Koch (NOAA Director of Education)</i> <i>Judy Braus (Executive Director, North American Association for Environmental Education)</i> <i>Christine Wiedinmyer (Associate Director for Science, CIRES)</i> <i>Anne Gold (Director, CIRES Education and Outreach Program)</i>
10:00 - 10:20 am	Participant introductions
10:20 - 10:40 am	Snack break
10:40 - 10:50 am	Mindfulness session
10:50 - 11:50 am	KEYNOTE: Engaging marginalized communities in climate resilience: challenges and best practices (Parker McMullen Bushman)
11:50 - 12:10 pm	Keynote Q&A
12:10 - 1:20 pm	Lunch
1:20 - 3:50 pm	Anti-oppression and inclusive program design training and breakouts
3:50 - 4:10 pm	Break
4:10 - 4:50 pm	Youth Summits Panel

*Moderator: Lisa Kim
Jen Kretser (The Wild Center)
Rachel Wellman (Florida Atlantic University)
Kate Semmens (Nurture Nature Center)
Katya Schloesser (CIRES)*

4:50 - 5:00 pm Daily close

Thursday, June 22, 2023

*University Memorial Center (1669 Euclid Ave, Boulder, CO)
Aspen rooms on the second floor*

8:30 - 9:00 am Arrival and networking (coffee and light breakfast available)

8:50 - 9:00 am Welcome remarks / recap of Day 1 and overview of Day 2

9:00 - 9:50 am KEYNOTE: David Sittenfeld

9:50 - 10:20 am Future of NOAA's Environmental Literacy Program discussion

10:20 - 10:40 am Break

10:40 - 11:10 am Data Talk by Christopher Nelson, ELP's Data Analyst

11:10 - 12:10 pm Addressing Mental Health Panel
*Moderator: Nicole Fernandes
Alicia Christensen (CIRES)
Becca Hatheway (UCAR)
Ethan Lowenstein (Eastern Michigan University)
Jessica Clemente (Nos Quedamos)*

12:10 - 1:30 pm Lunch and bus to field trip site

1:30 - 5:30 pm Field Trip at the NCAR Mesa Lab to view sites affected by wildfire and
receive a demo of a resilience game from the Heartforce CIRES project

6:00 pm Dinner at Southern Sun Pub and Brewery, Pearl Street, or return to hotel

Friday, June 23, 2023

*University Memorial Center (1669 Euclid Ave, Boulder, CO)
Aspen rooms on the second floor*

8:30 - 9:00 am Arrival and networking / expo set up (coffee and light breakfast available)

9:00 - 10:20 am Grantee & NOAA Share-A-Thon

10:20 - 10:40 am Break / Share-A-Thon dissemble

10:40 - 11:30 am	<p>Workforce Development Panel</p> <p><i>Moderator: Frank Niepold</i></p> <p><i>Dennis Chestnut (Faunteroy Center)</i></p> <p><i>Sarah Pidgeon (Solar One)</i></p> <p><i>Pamela Carralero (Kettering University)</i></p> <p><i>Abby Randall (EcoRise)</i></p>
11:30 - 11:35 am	Transition time
11:35 - 12:25 pm	<p>Collaboration with Local, State and Tribal Governments Panel</p> <p><i>Moderator: Sarah Schoedinger</i></p> <p><i>Robin Saha (University of Montana)</i></p> <p><i>Jeremy Hoffman (Science Museum of Virginia / Groundwork USA)</i></p> <p><i>Gayle Bowness (Gulf of Maine Research Institute)</i></p>
12:25 - 1:30 pm	Lunch
1:30 - 1:40 pm	Introduce Breakout Groups and Transition
1:40 - 2:40 pm	Breakout Groups
2:40 - 3:00 pm	Closing Remarks

Appendix C: Resources

- [ELP's Completed project summaries](#)
- [Education resources developed by NOAA's community resilience education grantees](#)
- [HEART Force Wildfire Game](#)
- [NOAA's Community Resilience Education Theory of Change](#)

References

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