



ADVANCING ENVIRONMENTAL HEALTH EQUITY THROUGH IMPLEMENTATION SCIENCE

February 28 – March 1, 2022

National Institutes of Health • U.S. Department of Human Health and Services



Table of Contents

Executive Summary.....	2
Meeting Summary.....	4
Introduction and Welcome.....	4
Keynote Session: Implementation Science – An Introduction.....	5
Panel 1: Implementation Science in the Context of Environmental Health Disparities and Environmental Justice Research.....	5
Implementation Science Research Opportunities and Capacity Building.....	6
Key messages from presenters.....	7
Challenges and Opportunities.....	7
Panel 2: Evidence Based Preventions and Interventions.....	7
Implementation Science Research Opportunities and Capacity Building.....	8
Key messages from presenters.....	9
Challenges and Opportunities.....	9
Panel 3: Emerging Environmental Health Issues – Climate Change and Disasters.....	9
Implementation Science Research Opportunities and Capacity Building.....	10
Key messages from presenters.....	11
Challenges and Opportunities.....	11
Panel 4: Community and Multi-Sectoral Partnerships.....	11
Implementation Science Research Opportunities and Capacity Building.....	12
Key messages from presenters.....	12
Challenges and Opportunities.....	13
Next Steps.....	13
Next Steps in Advancing Environmental Health Equity through Implementation Science.....	13
Closing Remarks.....	14



Workshop Report

National Institute of Environmental Health Science workshop on Advancing Environmental Health Equity Through Implementation Science

February 28 – March 1, 2022

Executive Summary

The National Institute of Environmental Health Sciences (NIEHS) in collaboration with the National Cancer Institute (NCI), Office of Behavioral and Social Sciences Research (OBSSR), National Heart, Lung, and Blood Institute (NHLBI), National Institute of Mental Health (NIMH), Fogarty International Center (FIC), Office of Disease Prevention (ODP), and National Institute of on Minority Health and Health Disparities (NIMHD) hosted a workshop titled 'Advancing Environmental Health Equity Through Implementation Science' on 28th February – 1st March, 2022. The purpose of this workshop was to explore how environmental health scientists can use implementation science to inform the development, adaptation, implementation and scale-up of interventions, practices, and policies to prevent and/or mitigate potentially harmful environmental exposures and ultimately advance environmental health equity.

Implementation Science in the Context of Environmental Health Disparities and Environmental Justice

Research: This session included presentations about using implementation science to advance healthy and affordable housing, using implementation science in the context of Superfund community engagement, and combating environmental injustice of beauty through implementation science. Panelists discussed the need for targeting structural root causes of environmental health disparities and ensuring equitable and diverse representation in decision making spaces. They also commented on the need for developing sustainable strategies, educating policy makers, and funding for community engagement.

Evidence Based Preventions and Interventions: This session explored the role of implementation science in the uptake and sustainment of environmental health prevention and interventions, and included presentations about a large scale greening intervention to reduce cardiovascular disease risk by decreasing air pollution, neighborhood environmental interventions to address the legacies of structural racism, and the use of implementation research to address community level plastic waste burning in rural Guatemala. Panelists stressed the importance of understanding community concerns and establishing community resources to sustain interventions. They identified the need to address structural racism, recognizing that science is political, and funding for sustaining interventions in the long term.

Emerging Environmental Health Issues – Climate Change and Disasters: This panel considered how implementation science can play a role in addressing climate change and disasters and included presentation about extreme heat, indigenous food, energy, and water security and sovereignty during COVID-19, and the role of implementation science in disaster research. Panelists discussed the need to

Advancing Environmental Health Equity Through Implementation Science



adapt interventions to the local context, to engage communities before a disaster and to develop skills to accurately communicate their work with communities. The panel also identified the role of costs in sustaining interventions.

Community & Multi-Sectoral Partnerships: This panel examined the role of community engaged multi-sectoral partnerships supporting the implementation of environmental health interventions. This panel was comprised of presentations on implementing local health policies, community health workers as an implementation strategy for exposure science, and the role of community partnerships in the implementation of a large-scale greening intervention. Panelists discussed the importance of weighing cost and benefits in an intervention and forming collaborative governance structures in multi-sector interventions. They also identified the need to ensure inclusivity in multi-sector interventions and addressing power dynamics.



Meeting Summary

Introduction and Welcome

The National Institute of Environmental Health Sciences (NIEHS) in collaboration with the National Cancer Institute (NCI), Office of Behavioral and Social Sciences Research (OBSSR), National Heart, Lung, and Blood Institute (NHLBI), National Institute of Mental Health (NIMH), Fogarty International Center (FIC), Office of Disease Prevention (ODP), and National Institute of on Minority Health and Health Disparities (NIMHD) hosted a workshop titled ‘Advancing Environmental Health Equity Through Implementation Science’ on 28th February – 1st March, 2022. This workshop marked the first step in connecting implementation science with environmental health science (EHS) research. The workshop goals included:

- Bringing together environmental health scientists and implementation scientists to define the current state of their disciplines in health disparities research and to discuss how implementation science approaches can be used to advance environmental health equity.
- Identifying research opportunities and gap areas to promote equitable implementation of evidence-based environmental health interventions in health disparity and environmental justice communities.
- Identifying resources, training, and capacity building needs as well as opportunities for collaboration to support the use of implementation science that advances environmental health equity.

The workshop covered the following topics:

- What Is Implementation Science & Why Does It Matter for Environmental Health?
- Implementation Science in the Context of Environmental Health Disparities & Environmental Justice Research.
- Evidence-Based Prevention & Interventions.
- Emerging Environmental Health Issues (e.g., climate change, disasters).
- Community & Multi-Sectoral Partnerships.

Each panel began with a presentation from NIEHS staff to set the stage for that topic. This was followed by brief research overviews by environmental health scientists. Implementation scientists then engaged in in-depth discussions exploring implementation science opportunities within each of the research areas and how researchers can work together to build capacity for the work. This report provides an overview of the workshop presentations and the discussions that followed.

NIEHS Director [Rick Woychik, Ph.D.](#), OBSSR Acting Director [Christine Hunter, Ph.D., ABPP](#), NCI Deputy Director for Implementation Science [David Chambers, DPhil.](#), and NHLBI Director of the Center for Translation Research and Implementation Science (CTRIS) [George A.](#)

"In everything we do, we should always move at the speed of trust. Assuring truthfulness, transparency, trustworthiness, and all we do, as we engage communities across our country and abroad." – Dr. George Mensah

Advancing Environmental Health Equity Through Implementation Science



[Mensah, M.D., FACC](#), delivered the opening remarks. They all welcomed workshop participants, expressed their support for the workshop goals, and reiterated the importance of implementation science in fulfilling the NIH mission of turning discoveries into health.

[Lindsey Martin, Ph.D.](#), welcomed all workshop attendees and provided an [overview of the workshop](#). She stated that a call to action to develop evidence-based interventions and to use implementation science to improve the uptake and scale of these interventions led to this workshop. This workshop was the first event of its scale to bring together implementation scientists and environmental health scientists, building a bridge between them. She also briefly discussed workshop goals, shared examples of successful implementation science projects, and provided an overview of the workshop agenda.

Keynote Session: Implementation Science – An Introduction

“...Innovation is pushing the science forward. And so there are ways to innovate in the science, even if the thing itself is not innovative. ...the innovation can be around the study designs that you use, it can be in the integration of citizen scientists and community members into the team.” – Dr. Meghan Lane-Fall

[Rinad Beidas, Ph.D.](#), and [Meghan Lane-Fall, M.D.](#), jointly delivered the keynote session. They introduced and shared their vision about implementation science with workshop participants. They shared the intrinsic assumptions of implementation science and the commonalities that implementation science shares with other disciplines. The presentation included an overview of the theories, models, and frameworks and their use in the practice of implementation science and the different categories of implementation science strategies. Their [presentation](#) is posted on the meeting website. The meeting website also contains more implementation science [resources](#).

Panel 1: Implementation Science in the Context of Environmental Health Disparities and Environmental Justice Research

Moderator: [Marion Koso-Thomas, M.D.](#)

NIEHS health scientist administrator [Melissa M. Smarr, Ph.D.](#), set the stage for this panel by discussing [future directions in environmental health disparities \(EHD\) and environmental justice \(EJ\) research](#). She reminded participants about the current state of EHD research and suggested future directions to achieve and sustain environmental health equity and environmental justice. Dr. Smarr stated that achieving environmental health equity may involve normalizing holistic and culturally appropriate approaches in study design, engaging in multi-sectoral collaborations to inform policy and decision makers, and increasing EHD research that focusses on prevention, intervention, and translations of discoveries. Implementation Science could be the missing puzzle piece to get us from environmental health disparities and environmental justice research to environmental health equity and environmental justice action.

[Veena Singla, PhD.](#), presented an overview of her experience [using implementation science to advance healthier affordable housing](#). Housing is a key factor contributing to health disparities as poor housing

Advancing Environmental Health Equity Through Implementation Science



quality contributes to health disparities for low income and black children. Interventions to improve housing quality are associated with their own set of barriers. Hence, for implementation science, it is important to identify these barriers in different contexts. It is also crucial to understand how to translate effective pilot programs to broader solutions.

[Ami Zota, ScD.](#), shared her work on [combating the environmental injustice of beauty through implementation science](#). Black and Latinx populations use more beauty products across multiple categories and tend to have higher exposures to endocrine disrupting chemicals. Women of color often experience racism and sexism because of beauty norms. While potential solutions exist at several different levels, most interventions have focused only on educating consumers about safer alternatives without considering their cost or efficacy burden. Implementation science may help in developing and assessing the efficacy of potential solutions.

[Tamarra James-Todd, Ph.D.](#), shared her experience on working with [superfund community engagement](#) to develop interventions to reduce metals exposures and improve health. Moving from research to translation to implementation requires multiple steps such as understanding community concerns, identifying barriers, co-designing solutions, and identifying key stakeholders that could help implement effective change.

Implementation Science Research Opportunities and Capacity Building

Implementation science panelists [Leopoldo J. Cabassa, Ph.D.](#), and [Rachel Shelton, Sc.D., M.P.H.](#), reiterated the following key messages from each of the presentations.

Targeting Structural Root Causes:

- It is necessary to understand structural root causes, link them to health, and think about how to dismantle them.
- It is important if to think about multi-sectors outside the context of or upstream of the system at hand since they may also have the ability to address some of the structural root cause.
- Multi-level aspects are very critical, from the social norms all the way to individual behavior, and there are opportunities to intervene at each level.

“We have to reflect on who is and isn't at the table and who isn't reflected in the evidence base. ...We've thought about the community defined evidence and opportunities for partnering to go along with that.”
– Dr. Rachel Shelton

Developing Interventions:

- When selecting interventions or developing them, it is crucial to think about representation in the decision-making process and who is and isn't reflected in the evidence base.
- In the context of implementation, thinking about who has access to interventions, which settings are included, and whether the populations being included or not might reinforce inequities through the implementation research.
- Rapid return of data builds trust and builds partnerships since it holds researchers accountable. Accountability in real time is powerful.

Implementation Strategy:

- It is important to think about not only the intervention and what works but if it can be implemented, adapted, and sustained in the community.

Advancing Environmental Health Equity Through Implementation Science



- Doing capacity building on the ground is necessary, so that the communities have resources.
- It is important to communicate using multiple forms because different audiences may consume the same information in different ways.

Key messages from presenters

- Dismantling existing structures is hard and community support is key in doing so.
- When starting something, listening to what community members want and need and taking the time to do trust building exercises is key.
- Environmental health literacy can be helpful in engaging the community and influencing individual and family level behaviors.
- When advocating for communities, an important piece is connecting those who have not had access to decision making spaces to those spaces. Finding spaces where community partners can be connected and where they can influence decisions being made is important. Participatory approaches can be used to connect people to decision makers.
- Representation matters - thinking about who is being engaged and how, the diversity of research teams, making changes in institutions, distribution of decision makers and resources in the context of grants with community partners and how are they actually being supported to participate in this research, requires shifts not just at the individual level but also at grant level.

Challenges and Opportunities

- It is very hard in the context of implementation science and intervention research to study sustainability. It is often understudied but has huge implications for trust and partnership building with communities. It is necessary to think about not just building implementation strategies but also thinking about sustainability strategies.
- One challenge is not only finding a way to translate information to people but also understand what works. Blending of hybrid model effectiveness work with implementation work may help us understand what is most effective but also what is being taken on to identify what is the most effective tool but also what is sustainable down the line.
- Educating decision makers is important for implementation science and partnering with decision makers might be an interesting and relevant area to think about.
- Compensating overburdened communities for their time is a challenge in the funding model from federal agencies.
- Need funding to support community engaged work.

Panel 2: Evidence Based Preventions and Interventions

Moderator: [Christopher Gordon, Ph.D.](#)

[Gwen W. Collman, Ph.D.](#), started the panel with an overview on [conceptualizing implementation science approaches for environmental public health problems](#). She discussed the current efforts in environmental public health and steps required to move from documenting health disparities to interventions. She shared a few of examples of how changes to infrastructure have been helpful in mitigating environmental health disparities and shared suggestions on developing new best practices.

[Aruni Bhatnagar, Ph.D.](#), presented an overview of the [Green Heart Louisville](#) project which aimed to quantify the effects of neighborhood greenery on the risk of cardiovascular disease by decreasing the

Advancing Environmental Health Equity Through Implementation Science



levels of air pollution. The project required extensive community engagement combined with an environmental assessment to design a greening intervention. Success of this intervention may pave the way to creating healthier cities by offering new ways to decrease air pollution, prevent heart disease, and create a new model of healthy urban living that could be replicated worldwide.

[Eugenia C. South, M.D.](#), described her project on [making neighborhood investments to promote health and safety](#). Health is affected by neighborhood

physical environment and social environment and segregation results in unequally distributed neighborhood level resources and risks.

Neighborhood environment interventions such as vacant lot greening, abandoned house remediation, and structural repairs were found to reduce incidents of gun violence, and violent crimes.

[Lisa Thompson, Ph.D.](#), shared her experience of working with communities in rural Guatemala to address the [combustion of plastic waste and its effects on human health](#).

The study evaluated implementation strategies to reduce household-level plastic burning in rural Guatemalan indigenous communities. As a complex intervention in a low resource setting, the project relied on an interdisciplinary team to carry out extensive community engagement with multiple stakeholders to identify and adapt an effective pilot program to reduce plastic waste burning and implement better waste management practices.

“...But science is political. We have to acknowledge that if we 're going to address some implementation gaps. ...If we are going to truly address these issues as scientists, we have to be able to take on the hard issues of structural racism and politics.” – Dr. Gina South

Implementation Science Research Opportunities and Capacity Building

Implementation science panelists [Nanette Benbow M.A.S.](#), and [Maria Fernandez, Ph.D.](#), reiterated the following key messages from each of the presentations.

Implementation Strategy:

- Meeting with the community to identify their concerns and barriers to adopting interventions.
- Establishing community resources to for long term sustainability of the intervention.
- Incorporating into the work the perspectives of residents in the neighborhoods where intervention is being implemented and hiring full-time members of the community as part of the research team to shape actual delivery of intervention.
- Partnering with relevant organizations for delivery of economic interventions.
- Identifying regional or system level strategies by working with policy makers to implement intervention on a broader scale.
- Creating appropriate incentives for community members to sustain the intervention.

Communication:

- Communicating appropriately with the community is important. Thinking about how the intervention can be communicated in a way that people see a connection between their needs and intervention.
- It is important for to engage with community members in a way that they feel empowered to be the implementers.



Key messages from presenters

- Understanding what the cost of implementation is, and how to convince policy makers that it is worth investment. Translating interventions into cost and benefit ratio might be one way to inform strategy.
- Gentrification is a barrier in many ways, and it is also an issue to be aware of when talking about making improvements in neighborhoods. Being knowledgeable about history and gentrification in the city and hearing people's concerns. Also sharing with people that work is meant to help people stay where they are and working with policy makers to choose appropriate areas for intervention.
- Local context is important; everybody has to figure out which particular way the intervention has to be adopted.
- Working with kids and youth in the neighborhood to develop awareness for sustainability.
- Thinking about how institutions feed back into the communities that have let us into their communities to do research is also important.
- Power is important. It can cause doom, or it can lead to success, but it has to be acknowledged.

Challenges and Opportunities

- Interrogating the role that structural racism plays in creating the environmental health problems that exist in the first place and exploring the ways that structural racism remains a barrier to implementation. This may be achieved by thinking about hard issues like power and money and who has access to opportunity and decision-making power and influence; those are difficult to address.
- Many of these questions have political undertones and implications. The world of scientists believes that science is not political. But science is political and acknowledging that is necessary to address implementation gaps and to take on the hard issues of structural racism and politics.
- There is still a big knowledge gap across the board regarding the impact of these interventions. Part of this problem is that organizations are siloed, and departments are not communicating to each other or sharing data in a way that maximizes efficiency. There are a lot of questions that remain, like how to best communicate with policy makers to get these evidence-based practices funded and implemented.
- Working through ethical issues is one thing to be careful about communicating. NIH could think about allowing to build in money for issues of sustainability or fairness with these types of interventions that are done in a trial.

Panel 3: Emerging Environmental Health Issues – Climate Change and Disasters

Moderator: [Gila Neta, Ph.D.](#)

[Aubrey K. Miller, M.D.,M.P.H.](#), prefaced this panel with an [overview of the NIH Climate Change and Health strategic framework](#). He summarized the process of drafting the [strategic framework](#), its purpose, and the four key focus areas for fostering partnerships across the globe, cross-sector, and interagency. He also shared his thoughts on addressing climate change and disasters via health research and implementation science.

Advancing Environmental Health Equity Through Implementation Science



[Karletta Chief, Ph.D.](#), shared her experience with [co-designing off-grid water systems on Navajo Nation](#) to address amplified water insecurities. Food and water insecurities on the Navajo Nation were amplified during the COVID-19 pandemic. The Navajo Nation was part of a partnership that co-designed a mobile, solar, nanofiltration water system that can treat non potable water to produce enough drinking water for several families. The University of Arizona partnered with Navajo Nation and other organizations to engage the community and obtain IRB approval to address water and food insecurities.

[Perry E. Sheffield, M.D.](#), discussed her experience with [integrating climate orientation planning and action](#) in public health initiatives. Several studies have demonstrated the historical legacy of structural racism (such as redlining) and have helped us understand why some city neighborhoods, particularly those with more black and brown residents, are hotter. The potential for implementation science is across three perspectives: epidemiology, clinical, and public health.

[Nicole Errett, Ph.D.](#), described [challenges and opportunities in implementation science and disaster research](#). Studying implementation in disasters introduces additional challenges – varied contexts, short implementation windows, unique implementation environments, “imperfect” and evolving evidence. Implementation science can help identify barriers to implementation of disaster preparedness, response, and recovery strategies, inform incident- and context-specific implementation strategies, and promote learning about effectiveness of response and recovery strategies at community-scale.

Implementation Science Research Opportunities and Capacity Building

Implementation science panelists [James Dearing, Ph.D.](#), and [Russell E. Glasgow, Ph.D.](#), engaged with the panelists about key messages from the presentations.

Implementation Strategy:

- Designing interventions as low cost as possible so they can be robust in effect.
- Identifying needs of the community to generate local action.
- Localizing interventions in communities as interventions cannot be one size fits all.

Communication:

- Using the detailing approach by going in person and developing short key messages to orient people to the messages.
- Showing up and getting to know people before any talking about research and going at the speed of trust.
- Talking to people about a problem they are currently experiencing regardless of their political affiliation and centering the conversation around that.
- Engaging practitioners, emergency personnel, and community members and increasingly integrate disaster

preparedness and response into those conversations.

**"Reminding researchers the importance of not always trying to design the perfect solution to the practical problems our communities face. Because very often in relation to cost, the perfect solutions are just too expensive. Especially if where we want them is disadvantaged communities."
– Dr. Jim Dearing**



Key messages from presenters

- Community knowledge was important to the response and failure to consider that led to mistrust during the COVID-19 disaster. Traditional knowledge may be used as guidance and collaborating with community partners and experts helps with that.
- No science is too important to override the community's needs.
- Cost is very important, especially when working in communities where economy is still developing. Considering long term goals and what the cost will be of maintaining systems as cost is critical to the work.
- Different stakeholders are concerned about different types of cost, and often it is time driven. Think about cost from perspective of different stakeholders and implementers. Cost is often a key driver of adaptations and sustainability.
- Training on cultural humility with staff on projects, so they understand the culture before doing community engagement. It's an ongoing process, not a onetime thing and happens in a variety of different spaces.

Challenges and Opportunities

- Balancing the need of having to move at the speed of trust with having to act fast or slow depending on disaster.
- It is important to engage communities before disaster, as much as possible and compensating them equitably.
- It is important to find skills to accurately communicate the work.
- Translating jargon is an ongoing process, being deep within the work limits abilities to communicate.
- Reminding researchers of the importance of not always designing the perfect solutions to the practical problems, because very often in relation to costs, the perfect solutions are just too expensive.

Panel 4: Community and Multi-Sectoral Partnerships

Moderator: [Dara R. Blachman-Demner, Ph.D.](#)

[Liam R. O'Fallon, M.A.](#), set the stage for this panel with his overview on [community engagement and implementation science](#). He provided a historical context to community engagement in environmental health sciences and its importance. He also discussed the history of community engagement at NIEHS through its [Partnerships for Environmental Public Health](#) initiative. His presentation discussed future opportunities for community engagement in implementation science.

[Paloma Beamer, Ph.D.](#), shared her experiences working with [community health workers to mitigate environmental exposures](#). As members of the community, community health workers, or "promotoras," have an unusual understanding of

**" ...Working with them (community partners) as equal partners is essential to our work and recognizing that they know way more about the work than we do and we are just trying to document it and it's efficacy with the science that we are trained to do."
– Dr. Paloma Beamer**



the community and are instrumental in helping community members access many different sources and services available to them. In Arizona, community health workers have been active in multiple projects to conduct outreach and training in the community about different environmental exposures.

[Natasha DeJarnett, Ph.D.](#), provided an overview of the community engagement strategies in the [Green Heart Study](#). The study was a randomized control trial where trees were used as an intervention to improve air quality. Researchers partnered with community advisory boards populated by residents living in the Green Heart neighborhoods, and other community organizations to identify and overcome implementation barriers. From an implementation science perspective, it is important to understand the contextual factors that may influence the usefulness and success of this intervention.

[Katrina Korfmacher, Ph.D.](#), described her experience with [implementing local lead policies in the city of Rochester](#). The city of Rochester formed a coalition of different community groups and members with the goal of eliminating lead poisoning by the year 2010. The coalition was instrumental in the passing of a law in 2005, which added lead to the existing zoning laws and resulted in a 2.4 times faster decline in rate of lead poisoning in Rochester compared to the rest of New York state. This implementation was targeted across multiple sectors such as the city leadership, community health partners, city inspectors, landlords, and renters.

Implementation Science Research Opportunities and Capacity Building

Implementation science panelists [Glen Mays, Ph.D.](#), and [Lisa Saldana, Ph.D.](#), engaged with the panelists about key messages from the presentations.

Implementation Strategy

- In a multi-sectoral intervention, benefits and costs of an intervention might be distributed differently across different sectors which can be a potential barrier. Collaborative governance and decision-making structures may help navigate these barriers.
- Collaborative multi-sector governance in decision making can be important from the implementation science perspective in helping sectors come together and reach agreements.
- Viewing the community as an equal partner, partnering with others in areas of expertise and experience that the research team does not have, engaging the community early, and involving the community in determining what the research question is all help to ensure community buy-in. There will be competing priorities and identifying that common ground to moving forward is key.
- Listening to the needs of the community meaningfully, objectively, and being able to put that into action.
- It is important to state upfront with the community what the project goals are and keeping eyes and ears open for opportunities to address other issues affecting the community.
- If we can give partners a win along the way, even when they are building that governing structure. Building in those little wins and not having those wins only target whatever is important to us. Those little wins go a long way in building partnerships.

Key messages from presenters

- An essential starting point to even begin the research is to understand the problems, and to recognize that the community knows what the problems are. Working with community partners



is essential and recognizing that they know much more about the work than we do, and we are just documenting the process as part of our research.

- The issue of sustainability is critical for complex interventions.
- We always approach with what is our end goal but there are so many micro-steps along the way. Each of our different community partners might have a different metric about what they are considering to be success.
- We had focus groups in the beginning, and you get a lot of very helpful information to inform the direction and to uncover if there are issues of structural racism that the community brings to light. You also must have participation that is representative of the community in these focus groups. Ensuring adequate representation could be quite helpful to uncovering any potential challenges that exist but also keeping the communication channels open is part of bidirectional communication.
- Environmental health practitioners are very well positioned for community engagement and implementing the science informed intervention.
- Implementation science feels like that ideal bridge between environmental health research and environmental health practice. We are uniquely positioned to do this work because we are in the community and implementation science feels like the link that could connect all and ensure the success of the intervention.

Challenges and Opportunities

- Distribution of cost benefit can often pose challenges. If cost and benefit are inequitably distributed across shareholders, there might be concerns about unintended policy consequence.
- One place where conflicts can be exposed, communicated, and managed is the governance structure created for multisectoral interventions. Thinking carefully about inclusivity on that government structures, who is represented, what sectors are represented, thinking about balance in that structure; that's one place where clear, inclusive, and transparent governing decision-making structures can be helpful.
- Perspective on power dynamics may be challenging from early on if the community partner knows way more about how things work. Constantly working on that power dynamics is essential. Most communities of color do not have the oversight that the Navajo Nation has on research conducted within Navajo Nation. We should think about how to employ that more nationally.

Next Steps

Next Steps in Advancing Environmental Health Equity through Implementation Science Program staff from NIH interacted with workshop participants using collaborative software. The audience was asked open-ended questions pertaining to possible next steps in the realm of implementation science and environmental health. When asked what most inspired participants about the workshop, participants highlighted topics such as collaboration, community engagement, trust, and innovation. Participants hoped to apply what they learned in the workshop by accessing tools and references, including a dissemination and implementation scientist in their work, and applying frameworks and models. They would like to learn more about best practices for forging partnerships and have examples of large- and small-scale projects of successful implementation and sustainability.

Advancing Environmental Health Equity Through Implementation Science



Participants look forward to more workshops like this one, and felt that more training, free resources, funding, mentorship and trainings are needed to build capacity in implementation science in environmental health.

Closing Remarks

[Claudia L. Thompson, Ph.D.](#), provided closing remarks at the workshop. She noted that clean cookstoves emerged as one of the first examples where implementation science was applied to an environmental health issue, household air pollution, that affects so many across the globe. Dr. Thompson stated that it is an exciting time where we can think about observation to intervention to uptake and sustainability for the improvement of public health. Equity is the cornerstone of what was discussed during the workshop and needs to be front and center of how we think about science. She remarked that implementation science needs to be the engine of the train, so we can work quickly at the speed to trust to move what we have learned into action.