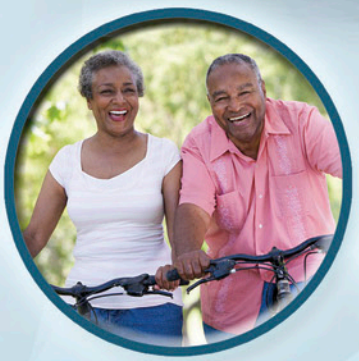
National Institute of
Environmental Health Sciences

Environmental Health Disparities and Environmental Justice Meeting

July 29-31, 2013



Co-sponsored by

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

Environmental Health Disparities and Environmental Justice Meeting

July 29-31, 2013 | NIEHS, Bldg. 101, Rodbell Auditorium | Research Triangle Park, NC

Table of Contents

Welcome Letter **1**

Agenda **3**

Session Abstracts **7**

Keynote 8

Concurrent Sessions #1 9

Concurrent Sessions #2 13

Day 1 General Session 18

Day 2 General Session 19

Concurrent Sessions #3 21

Poster Abstracts **25**

Workshop Abstracts **65**

Morning Workshops 66

Afternoon Workshops 74

Speaker Bios **81**

Background Materials, Session Resources, and Recommendations **121**

Meeting Participant List **153**

Environmental Health Disparities and Environmental Justice Meeting

July 29-31, 2013 | NIEHS, Bldg. 101, Rodbell Auditorium | Research Triangle

Welcome!

On behalf of the planning committee, welcome to the National Institute of Environmental Health Sciences (NIEHS) in Research Triangle Park, North Carolina for the Environmental Health Disparities and Environmental Justice Meeting. We are enthusiastic about the collaborative nature of this event as it brings together grantees, community partners, health care professionals, and government representatives from different federal grant programs, as well as potential new partners, committed to addressing the environmental contributions to health disparities. The meeting offers us the opportunity to share, listen, and promote best practices of current and past environmental health disparities (EHD) research and environmental justice (EJ) projects, and identify emerging issues and new directions in research, communication, capacity building, training, and evaluation. We hope that this meeting will foster new partnerships at the local, state, regional, tribal, and national levels.

Environmental Health Disparities:
The unique contribution of the environment to health disparities.

Environmental Justice:
"the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."

The main goals of this meeting are to:

1. Acknowledge and build off past meetings that have identified historical EHD & EJ issues
2. Prioritize research areas to ensure the most vulnerable populations' issues are addressed
3. Identify emerging EHD or EJ issues (new exposures that have not been considered in the past that may lead to new or additional health disparities) and,
4. Develop a set of priorities that enables participants to set multi-year plans to address the most critical EHD and EJ issues and promote more collaborative efforts on the most salient issues across government agencies

Meeting Overview

Concurrent Sessions

There are three sets of concurrent sessions. The purpose of these sessions is to have smaller group discussions to identify priorities and next steps for that topic area. Each session will have its own unique aspects, but they all share the following format: panel presentation, group discussion around a set of questions, and then priority identification. You should have received a list of the sessions you signed up for and related discussion questions. If you didn't, please identify the sessions you wish to attend when you check in on Monday morning.

Report Back

On Tuesday after lunch, we will have a report back session, where representatives for each of the concurrent sessions will highlight key priority actions for that topic.

Poster Session
We invite poster presenters to put up their posters Monday morning so that people have ample time to view them throughout the meeting. The official poster session will take place on Tuesday after the report back sessions.

Workshops
The meeting culminates with hands-on workshops on Wednesday. You should have received confirmation of the workshops you signed up for. If not, please visit the registration desk when you check in or during one of the breaks.

Twitter
For those of you who like to use social media, please use #EHD13 as the meeting hashtag.

Overflow Room
Due to the interest in this meeting, we exceeded our capacity. To accommodate all who wish to attend, we have set up an overflow room that will have the General Sessions displayed on the projection screen. Participants in the overflow room will be able to text their questions to a meeting organizer who will ask the question on their behalf.

Appreciation

Planning meetings of this nature require a great deal of hard work and commitment from a core group of individuals. This meeting has been a collaborative effort among the National Institute of Environmental Health Sciences (NIEHS), U.S. Environmental Protection Agency (EPA) , National Institute on Minority Health and Health Disparities (NIMHD) , Centers for Disease Control and Prevention (CDC) , Office of Minority Health (OMH) , Indian Health Service (IHS), and several grantees. Please extend a special thanks to the multi-talented planning committee members for this event:

- Beth Anderson (NIEHS)
- Sharon Beard (NIEHS)
- Phil Brown (Northeastern)
- Rich Callan (EPA)
- Justin Crane (MDB, Inc.)
- Caroline Dilworth (NIEHS)
- Christine Ekenga (NIEHS)
- Senaida Fernandez (UCOP)
- Symma Finn (NIEHS)
- Whitney Freberg (MDB, Inc.)
- Neasha Graves (UNC-CH)
- Kimberly Gray (NIEHS)
- Mike Humble (NIEHS)
- Helena Kennedy (NIEHS)
- Pam Miller (ACAT)
- Kerri Moran (MDB, Inc.)
- Liam O'Fallon (NIEHS)
- Joan Packenham (NIEHS)
- Devon Payne Sturges (EPA)
- Molly Puente (NIEHS)
- Nishadi Rajapakse (NIMHD)
- John Sullivan (UTMB)
- Claudia Thompson (NIEHS)
- Alan Trachtenburg (IHS)
- LaToria Whitehead (CDC)
- Sacoby Wilson (U. Maryland)
- Steve Wing (UNC-CH)
- Wilbur Woodis (IHS & OMH)

Green Meeting

We are committed to holding as “green” a meeting as possible. You can do your part! When the meeting ends, please turn in your name tag and lanyard at the registration table and recycle any printed materials.

Agenda

Monday, July 29, 2013

7:30 Registration

9:00 **Welcome** ..... *Rodbell ABC*
Linda Birnbaum, *National Institute of Environmental Health Sciences (NIEHS)*
John Ruffin, *National Institute on Minority Health and Health Disparities (NIMHD)*
James H. Johnson, Jr., *U.S. Environmental Protection Agency (EPA), National Center for Environmental Research (NCER)*

9:45 **Keynote: It Takes a Village: Integrated Methods for Addressing Environmental Health Disparities**..... *Rodbell ABC*
Marie Lynn Miranda, *University of Michigan*

10:30 Break

11:00 Concurrent Sessions #1

- Research to Action: Translational Research to Address Health Disparities and Environmental Inequities.....*Rodbell BC*
- Innovative Tools and Technologies for Environmental Public Health Research.....*Room F193*
- Effectively Reaching Underserved Populations: Lessons Learned on Culturally Appropriate Communication Strategies and Tools .....*Rodbell A*
- Addressing 'Research Disparities': Building Connections to Build Capacity ..... *Room D350*

12:30 Lunch

2:00 Concurrent Sessions #2

- Examining Environmental Determinants of Health and Engaging Communities Around EPH Issues Using Geographic and Spatial Analysis.....*Rodbell BC*
- Inequities Persist: Environmental Justice from a Native American Perspective ..... *Room D350*
- Community Experience of Contaminated Communities: Contributions from the Social Sciences .....*Rodbell A*

3:30 Break

4:00 **Institutional Review Boards and Community Engaged Research: How Can Universities and Community Organizations Work Together to Strengthen the Ethics Review of Community Based Research?** ..... *Rodbell ABC*

Sharon Beard, *NIEHS*
Joan Packenham, *NIEHS*
Alice Park, *Community-Campus Partnerships for Health*
Katie Barnes, *UNC-CH*
Emily Anderson, *Loyola University Chicago*
Eric Wat, *Special Service for Groups*

5:30 Adjourn for the day; buses back to hotels

Tuesday, July 30, 2013

7:30 Registration

9:00 **Welcome** ..... *Rodbell ABC*

Sharunda Buchanan, *Centers for Disease Control and Prevention (CDC)*

9:15 **Challenges and Opportunities for Supporting Community Based Research to Address Environmental Health Disparities and EJ** ..... *Rodbell ABC*

Pamela Miller, *Alaska Community Action on Toxics*
Molly Puente, *NIEHS*
Thomas Arcury, *Wake Forest School of Medicine*
Karla Fortunato, *Health and Environmental Funders Network (HEFN)*

10:30 Break

10:45 Concurrent Sessions #3

- Cumulative Exposures: The Role of Epidemiology in Elucidating Environmental Contributions to Health Disparities.....*Rodbell BC*

- Using Health Impact Assessments (HIAs) to Address Environmental Health Disparities and Create Equity in Communities .....*Rodbell A*

- Conflicts over Research that Identifies Community Impacts of Environmental Exposures ..... *Room D350*

12:15 Lunch

1:15 **Using Research Results to Improve Environmental Public Health** ..... *Rodbell ABC*

Gwen Collman, *NIEHS*

2:00 **Prioritizing Next Steps** ..... *Rodbell ABC*
Report backs from concurrent sessions focusing on key actions
Moderator: Claudia Thompson, *NIEHS*

3:30 **Poster Session** ..... *Lobby*

5:00 Formal Adjourn; buses to RDU airport and hotels

Wednesday, July 31, 2013

8:30 Registration

9:15 Bus from NIEHS Rall Building to NIEHS Keystone Building

10:00 Workshops

- Best Practices for Community-Engaged Research: Including Louisiana Coastal Communities in the Research Agenda ..... *Room D450*
  Tarase Carter, *Tulane University*
  Farah A. Arosemena, *Tulane University*
  Jauna Crear, *Crear Law Firm*

- Community-Academic Engagement through Community Monitoring by Neighborhood Assessment Teams ("A" Teams) and Production of CBPR Manual ..... *Rodbell C*
  Andrea Hricko, *University of Southern California*
  Carla Truax, *University of Southern California*
  Jessica Tovar, *Long Beach Alliance for Children with Asthma*
  Miranda Chien-Hale, *Occidental College*

- Cumulative Impacts and Children's Environmental Health ..... *Rodbell A*
  Amy Kyle, *University of California – Berkeley*

- Enhancing Engagement in Community Research with Theatre of the Oppressed ..... *Room E226*
  John Sullivan, *University of Texas Medical Branch – Galveston*
  Bryan Parras, *T.E.J.A.S. – Texas Environmental Justice Advocacy Services*

- From Theory to Practice: Successful Communication Approaches That Build Trust ..... *Keystone Building, Room 3118*
  Nancy Palate, *California Department of Public Health*

- Macroepigenetics Research and Intervention Design in Action ..... *Keystone Building, Room 3003*
  Renee Dufault, *Food Ingredient and Health Research Institute*
  Zara Berg, *Fort Peck Community College*

- Using Research Data to Educate, Advocate, and Organize: Community-Academic Collaboration as a Way to Enhance EJ Campaigns ..... *Rodbell B*
  Beverly-Xaviera Watkins, *Weill Cornell Medical College*
  Damaris Reyes, *Good Old Lower East Side*
  David Shuffler, *Youth Ministries for Peace and Justice*

12:00 Lunch and buses from NIEHS Keystone Building to NIEHS Rall Building

1:00 Workshops

- Community Outreach and Collaboration with Philadelphia Inner City Neighborhoods Impacted by Former Lead Smelters ..... *Room D450*
  Barbara Allerton, *Pennsylvania Department of Health*
  Ana Pomales, *U.S. EPA*
  Drew Serres, *New Kensington Community Development Corporation*

- Creating, Collecting, and Telling Our Stories: Tools for Multi-Stakeholder Engagement ..... *Rodbell A*
  Ogonnaya Dotson Newman, *WE ACT for Environmental Justice, Inc.*

- Environmental Health Research and Environmental Injustice: Do No Harm ..... *Rodbell B*
  Madeleine Kangsen Scammell, *Boston University*
  Naeema Muhammad, *North Carolina Environmental Justice Network*
  Steve Wing, *University of North Carolina – Chapel Hill*

- Evaluating PEPH Activities ..... *Room D250*
  Christie Drew, *NIEHS*
  Kristi Pettibone, *NIEHS*

- Methods to Collect and Organize Information for Community-Based Cumulative Risk Assessments ..... *Rodbell C*
  Tim Barzyk, *U.S. EPA*

- Community Training to Inform Policy Makers About Environmental Exposures and Health ..... *Room D350*
  Amy Schulz, *University of Michigan*
  Donele Wilkins, *Green Door Initiative*
  Myra Tetteh, *University of Michigan*

3:00 Adjourn; buses to RDU airport and hotels

Session Abstracts

Keynote 8
It Takes a Village: Integrated Methods for Addressing Environmental Health Disparities 8
Concurrent Sessions #1 9
Research to Action: Translational Research to Address Health Disparities and Environmental Inequities 9
Innovative Tools and Technologies for Environmental Public Health Research 10
Effectively Reaching Underserved Populations: Lessons Learned on Culturally Appropriate Communication Strategies and Tools 11
Addressing 'Research Disparities': Building Connections to Build Capacity 12
Concurrent Sessions #2 13
Examining Environmental Determinants of Health and Engaging Communities around EPH Issues Using Geographic and Spatial Analysis 13
Inequities Persist: Environmental Justice from a Native American Perspective 15
Community Experience of Contaminated Communities: Contributions from the Social Sciences 17
Day 1 General Session 18
Institutional Review Boards and Community-Engaged Research: How can Universities and Community Organizations Work Together to Strengthen the Ethics Review of Community-Based Research? 18
Day 2 General Session 19
Challenges and Opportunities for Supporting Community-Based Research to Address Environmental Health Disparities and Environmental Justice 19
Concurrent Sessions #3 21
Cumulative Exposures: The Role of Epidemiology in Elucidating Environmental Contributions to Health Disparities 21
Using Health Impact Assessments (HIAs) to Address Environmental Health Disparities and Create Equity in Communities 22
Conflicts over Research that Identifies Community Impacts of Environmental Exposures 23

Keynote

It Takes a Village: Integrated Methods for Addressing Environmental Health Disparities

Speaker: Marie Lynn Miranda, *University of Michigan*

Room: Rodbell ABC

Keynote Description:

Although it is widely agreed that health and well-being are determined by multiple forces, surprisingly little is known about the interactions of those forces. Adverse environmental contaminant exposures often occur in communities facing multiple social stressors like deteriorating housing, inadequate access to health care, poor schools, high unemployment, crime, and poverty — all of which may compound the effects of environmental contaminant exposures. Using work focused on air pollution and pregnancy outcomes, this talk highlights the need for collaborative work that crosses disciplines and employs multiple methods, which are necessary if we are to succeed in addressing the many health disparities that persist in our country. Understanding, and then intervening, to prevent adverse environmental and social exposures is of critical importance to the health of our nation.

Concurrent Sessions #1

Research to Action: Translational Research to Address Health Disparities and Environmental Inequities

Moderator: Caroline Dilworth, *NIEHS*
Presenters: Laurel Schaider, *Harvard School of Public Health*
Rebecca Jim, *L.E.A.D. Agency*
Linda McCauley, *Emory University*
Patrick Ryan, *Cincinnati Children's Hospital Medical Center*
Jeannie Economos, *Farmworker Association of Florida*

Room: Rodbell BC

Session Description:

Studies funded through the NIEHS Research to Action program have focused on health disparities from environmental and occupational exposures that community members identify as a local concern. This session highlights three Research to Action projects and the close collaborations formed with community partners from health disparate communities who, together with their academic partners, sought to address environmental inequities and health disparities at the local level. These academic-community partnerships led to the development of education, prevention, and intervention programs and to the translation and dissemination of the research findings in culturally appropriate language and formats. The presenters will discuss their interactions with community partners in research and how these active partnerships have implemented public health initiatives and policy changes that are leading to the prevention or reduction of harmful environmental and occupational exposures as well as to improvements in human health. This includes research conducted with Latino farmworkers in Florida exposed to high doses of pesticides, with parents and teachers in Ohio to address a high prevalence of asthma among schoolchildren, and with community members in northeastern Oklahoma to address mercury exposure resulting from subsistence and recreational fishing.

Discussion Questions:

- Has the coupling of research with an identified public health action plan in a single project led to greater progress in addressing environmental health disparities than if these activities were conducted separately? If so, what are the specific attributes of the project that have led to this synergy?
- How can this type of research help address structural problems responsible for health disparities in the communities?
- How can this research be translated into improved clinical practices in community health centers?
- What are you and your partners doing to ensure these projects are sustainable? What is needed to keep the momentum going?
- How well have expectations going into the study matched actual study findings? How have you reconciled differences between what you expected to find and what you actually found?

Innovative Tools and Technologies for Environmental Public Health Research

Moderator: Symma Finn, *NIEHS*
Presenters: Sharon Croisant, *University of Texas Medical Branch*
Jose Antonio Tovar, *Farmworker Association of Florida*
Sara Wylie, *Northeastern University*

Room: F193

Session Description:

Researchers in environmental public health and related fields have been developing new modalities for measuring and assessing environmental risks and adapting existing tools specifically for use in environmental health research. These methods, approaches, and tools are often developed to allow the fuller engagement of community partners in the research process and have the potential to be used by community organizations to sustain environmental assessment activities beyond the period of funding. This session will highlight the work of three researchers who have leveraged existing tools, such as geographic information system (GIS) mapping, for community-based research, and developed new approaches that are being applied in environmental public health research. This includes the use of Social Network Analysis to track family and community connections in a study of post-disaster resilience, and the development of cost effective, open source, Do-It-Yourself tools to stimulate community-based involvement in research and to promote increased environmental health literacy in health disparate communities.

Discussion Questions:

- Is there any advantage to developing new tools and approaches rather than adapting existing ones for use in environmental health sciences research?
- What have been the major challenges to adapting tools and approaches?
- What is the value of developing new approaches or tools that measure risk in novel ways, if regulations are based on traditional, established measurements of risk? Within a project term, is it reasonable that a research outcome be recommendations to adjust common standards for evaluating risk?
- Does the use of existing tools allow for greater data sharing or generalizability across studies, based on common measurements or assessment tools?
- Should funding agencies and funded researchers be promoting greater sustainability beyond the term of funded projects? Should research projects and programs promote cost-effective and easy-to-use tools and approaches as the optimal means to promote sustainability or are there other ways to achieve sustainability?
- Should the goal to increase scientific literacy, numeracy, and capacity to understand and participate in research be central in or the focus of community-engaged projects? Should funds be designated for such activities in all community-engaged research?

Effectively Reaching Underserved Populations: Lessons Learned on Culturally Appropriate Communication Strategies and Tools

Moderator: Marti Lindsey, *University of Arizona*
Presenters: Neasha Graves, *University of North Carolina, Chapel Hill*
Sara Quandt, *Wake Forest School of Medicine*
Monica Ramirez-Andreotta, *Northeastern University*

Room: Rodbell A

Session Description:

The purpose of this session is to examine the ways in which projects are communicating environmental health disparities (EHD) research findings in culturally appropriate ways. Communication and dialogue among all research partners is central to effective community-engaged research. Such communication requires that community residents, health care professionals, and decision-makers understand the connection between environmental factors and health and have the ability and capacity to act on this knowledge to prevent, mitigate or regulate exposures. In this session, panelists will begin the conversation by sharing how they investigated the educational needs of young African American women, Latino farmworker families, and rural gardening communities to understand environmental health science on breast cancer risk and exposure to arsenic and pesticide. They will highlight the culturally appropriate materials and tools developed in response to those needs. The panelists will describe how they are translating their findings about the systemic issues affecting black women's breast health, farmworkers' pesticide exposure, and a rural Arizona community's exposure to arsenic near a Superfund site into information that can be used by policy makers, community members, and health care professionals in addressing environmental health disparities. Meeting participants will then discuss other approaches and identify priority actions to further advance translational work.

Discussion Questions:

- Which projects presented by the panelists resonated with you as you consider communication strategies and tools for your own constituents (communities)?
- What specific EHD and environmental justice (EJ) issues/communities is your organization working to address/impact?
- Based on what you learned from the panel presentations about culturally appropriate communication strategies and tools, what are some potential opportunities (or gaps) in addressing EHD/EJ issues? What are some challenges?
- What resources are needed (knowledge, partners, funding, etc.) to address EHD/EJ through effective communication strategies and tools?
- In terms of effective communication to address EHD/EJ, what are the priority next steps? How can we evaluate the success of these next steps?
- What steps can we take to help community partners frame their environmental health research questions? How do we help them locate and partner with researchers who conduct studies that could answer those questions?

Addressing 'Research Disparities': Building Connections to Build Capacity

Moderator: Liam O'Fallon, *NIEHS*
Presenters: Senaida Fernandez, *University of California*
Sacoby Wilson, *University of Maryland*
Doug Stevens, *Salish Kootenai College*
Alice Park, *Community-Campus Partnerships for Health*

Room: D350

Session Description:

Through a variety of federal, state, and foundation-supported programs, many community-engaged (community-university) projects have been supported, developed, and implemented to address environmental health concerns of community residents. However, as noted in several recent reports, there are communities that are not able to tap into and benefit from federal and foundation support. Such 'research disparities' present a challenge and an opportunity. In this session, panelists will describe training programs they have developed or benefited from, reflect on the importance of filling the gaps of these research disparities, and consider ways in which existing models can be built upon. Panelists will discuss multiple excellent examples of training activities and curricula, all designed to build the capacity of community residents, health care professionals, and researchers to work collaboratively in the full research process. Special attention will be given to issues surrounding project sustainability and transitions from capacity to research to implementation. Participants will consider how various programs and partnerships (for example, federal, state, and foundation programs as well as public-private partnerships) can advance the training needs to address EHD and EJ.

At the end of the 90-minute session, the group will identify two to three priority next steps that can be implemented by participants of all levels of involvement (community, researcher, and federal).

Discussion Questions:

- What are best practices and/or successful models?
- What are the opportunities/strategies to advance those efforts?
- How can the challenges to addressing 'research disparities' be met?
- What are the different pipelines? What are the unique needs of those pipelines? What are the similarities?
- Are there examples of scaling up activities? How can existing initiatives be scaled up? Should they? Why or why not?
- What strategies have been used to sustain capacity-building efforts? What made them work?
- How can we ensure smooth transitions from capacity to research to application? How do we show impact along the continuum?
- What are the priority next steps (for each level) in addressing 'research disparities?'
    - What can people do at an individual level?
    - What can community organizations and academia do?
    - What can funding agencies do?

Concurrent Sessions #2

Examining Environmental Determinants of Health and Engaging Communities around EPH Issues Using Geographic and Spatial Analysis

Session Leads: Richard Callan, *U.S. EPA*
Nishadi Rajapakse, *NIMHD*
Moderator: Ken Olden, *U.S. EPA National Center for Environmental Assessment*
Panelists: Paul Juarez, *University of Tennessee Health Science Center*
Sacoby Wilson, *University of Maryland*
Beverly-Xaviera Watkins, *Weill Cornell Medical College*

Room: Rodbell BC

Session Description:

There is a substantial body of evidence linking social and physical environmental factors (i.e., increased exposures to toxins and pollution) and limited access to healthy foods and recreational activities, to adverse health outcomes. Adverse health outcomes include acute conditions such as respiratory illnesses (including asthma) to more chronic conditions such as cardiovascular disease, obesity, cancer and poor mental health. Efforts to both engage communities around environmental public health issues and examine environmental determinants of health disparities can be enhanced by the use of spatial analysis system and geographic information system (GIS) community level mapping of data on:

- *Socioeconomic and demographic indicators*: Income levels, housing, vital statistics, census, and employment data
- *Natural and built environment characteristics*: Indoor and outdoor air quality, surface and ground water quality, food safety, contamination of soils, and placement of noxious land uses
- *Local environmental health risk factors*: Emissions from vehicles, waste removal and disposal, use of pesticides, local industry (i.e. dry cleaners, restaurants)
- *Health care services*: Outreach services, clinics, hospitals, and first responder organizations
- *Ecological data*: Land use changes including flooding risk related to climate change
- *Health data*: available from local, state, and federal agencies

These provide a visual tool for identifying disease outcomes that may be environmentally linked and developing interventions to diminish physical hazards, increase positive attributes in the community, and reduce vulnerability to environmental harms and negative health effects. In addition, these maps enable local community-based organizations to increase public awareness of environmental public health issues and advocate for policy change.

This panel will provide an overview of their research with community level mapping of GIS data.

Discussion Questions:

- How can GIS be integrated into exposure science?
- What is the role of community in GIS related research?
- What environmental exposures increase the risk of development and/or progression of cancer?
- Does exposure to toxins at different life stages increase risk for neurodevelopmental disorders?
- GIS mapping has the potential to enhance the capacity of community-based organizations to change public policy, yet it is not mentioned in most community engagement RFAs. Is it time, as was the case for project evaluation, for the funding institutes to consider GIS mapping in its assessment of community engagement research proposals?
- Although linking health outcomes to environmental factors at the neighborhood level is important for the development of targeted interventions and public policy, aggregation of local health data has made it difficult, if not impossible, to conduct these analyses. How can community-based organizations and researchers overcome this barrier?

Inequities Persist: Environmental Justice from a Native American Perspective

Moderator: Symma Finn, *NIEHS*
Presenters: Katsi Cook, *Running Strong for American Indian Youth*
Clarita Lefthand-Begay, *University of Washington*
Johnnye Lewis, *University of New Mexico*

Room: D350

Session Description:

Environmental justice (EJ) has emerged as an important component of environmental public health that moves beyond the identification of environmental health disparities to research and policy changes that attempt to address ongoing grievances and injustices related to environmental exposures. Since the development and implementation of the first DHHS EJ strategy in 1995, progress has been made in identifying and addressing disproportionately high and adverse environmental exposures among low-income populations and Indian tribes, but inequities persist.

These inequities disproportionately affect the 566 federally recognized tribes and 5.2 million Native Americans and Alaskan Natives in the United States who experience high levels of environmental exposures, and the effects of multiple exposures, over the life course. This session will explore several ongoing EJ issues that these tribal groups have mobilized around for many years and highlight the ongoing health and environmental health disparities that disproportionately affect these groups. The case studies presented exemplify culturally sensitive approaches that have successfully addressed EJ issues and that do not represent "forced acculturation" of investigator-driven, evidence-based interventions. The session will also touch upon issues that remain unresolved despite existing efforts to mitigate or prevent environmental exposures that are known to be harmful. This includes the harmful effects of mining on tribal lands, the contamination of traditional foods by persistent organic pollutants, and the disruption of Native Americans' sustainable and reciprocal relation with the environment from policies, environmental threats, and global climate change.

Discussion Questions:

- What priority issues cut across tribal nations?
- Can we leverage past successes and apply these methods in different Native American settings, or should tribal groups work at a more regional and local level to address inequities unique to their region?
- Should we be increasing researchers' and government officials' understanding of the differences between tribal groups, or is there greater power in being considered a single, unified ethnic community with common issues?
- How are we addressing the historical issues? What are the challenges? What strategies should we recommend for keeping these historical inequities a priority in the context of the current national movement to address environmental justice?
- Should funding agencies and funded researchers be mandating greater sustainability beyond the term of funded projects? Should research projects and programs require cost-effective and easy-to-

use tools and approaches as the optimal means to promote sustainability, or are there other ways to achieve sustainability?

- Should the goal to increase scientific literacy, numeracy, and capacity to understand and participate in research be required as a component of community-engaged projects? Should funds be designated for such activities in all community-engaged research?

Community Experience of Contaminated Communities: Contributions from the Social Sciences

Moderator: Beth Anderson, *NIEHS*
Presenters: Phil Brown, *Northeastern University*
Michael Edelstein, *Ramapo College of New Jersey*
Elizabeth Hoover, *Brown University*

Room: Rodbell A

Session Description:

Social scientists have been central to improving our understanding of the impacts of Superfund and other hazardous waste sites, chemical explosions, oil spills, and human-exacerbated natural disasters. This session focuses on ethnographic case studies that explored environmental inequities. Some of these are "stand-alone" studies by social scientists, and some of them are parts of interdisciplinary collaborations with environmental health scientists. In both cases, social science research offers much for environmental health science and to environmental policy. We will additionally address the past and potential future role of NIEHS in advancing such research. NIEHS has played an important role in supporting environmental justice and community-based participatory research, which has contributed to the study of communities impacted by environmental hazards. Community-level understanding of contaminated communities has also benefited from the community engagement cores that are part of center grants: Superfund Research Program, Children's Environmental Health Center, Environmental Health Core Centers, and Breast Cancer and the Environment Research Centers. A 2012 Superfund Research Program workshop at Brown University further contributed to this research area.

This panel includes scholars from sociology, anthropology, and psychology, who will review the state of knowledge about community experience of contaminated communities.

Discussion Questions:

- Should contaminated communities undergo a "social and cultural impacts assessment" by social scientists in addition to an environmental impacts assessment and a health impacts assessment?
- How could we develop a few long-term research sites to provide longitudinal research on contaminated communities?
- The stress of dealing with the post-contamination process is roughly equal to the stress of becoming "contaminated" to begin with. How do we minimize that "post-discovery" stress to the people in the contaminated community?
- What is the role of community activist organizations in pushing government and business to adequately clean up hazardous sites?
- How can we best partner with affected residents in order to incorporate community input into study design and implementation to thoroughly research social impacts? How do we best present our research to the communities that we study?

Day 1 General Session

Institutional Review Boards and Community-Engaged Research: How can Universities and Community Organizations Work Together to Strengthen the Ethics Review of Community-Based Research?

Session Leads: Sharon Beard, *NIEHS*
Joan Packenham, *NIEHS*
Moderator & Presenter:
Alice Park, *Community-Campus Partnerships for Health*
Presenters: Katie Barnes, *University of North Carolina, Chapel Hill*
Emily Anderson, *Loyola University Chicago*
Eric Wat, *Special Service for Groups*

Room: Rodbell ABC

Session Description:

Community engaged research raises ethical questions that go beyond individual level of protections to include those at the community level. This session will address the successful integration of community based organizations into the human ethics review process by sharing best practices and lessons learned on engaging community members on University Institutional Review Boards, Community-based Research Review Boards or Community Investigations Review Boards. These concerns can range from training all individuals involved in community engaged research on IRB processes and the protection of human subjects, proper informed consent processes, understanding cultural and community influences towards human research, return of data and data sharing with the community and determining effective training to meet community and academic researcher needs.

Discussion Questions:

- How can we strengthen community involvement in the research ethics review process?
- What can we do to support community member's involvement in research ethics review processes?
- How can we strengthen the relationship between community review processes and academic IRBs?
- How can we address challenges faced by community review processes?
- What factors contribute to effectiveness of community review processes? What impact do community review processes have?
- What changes could be made to strengthen community review processes?
- What recommendations can we offer to community organizations that are interested in developing their own processes for research ethics review?
- What training opportunities and resources are available for training community and researchers on the IRB process?

Day 2 General Session

Challenges and Opportunities for Supporting Community-Based Research to Address Environmental Health Disparities and Environmental Justice

Moderators & Presenters:
Pamela Miller, *Alaska Community Action on Toxics*
Molly Puente, *NIEHS*
Presenters: Thomas Arcury, *Wake Forest School of Medicine*
Karla Fortunato, *Health and Environmental Funders Network*

Room: Rodbell ABC

Session Description:

Community-based research requires building partnerships with many different people and organizations. While the partnerships themselves can provide invaluable resources to conduct environmental health research, often groups need to seek additional resources and funds from other sources. Some groups may face the challenge of identifying potential collaborators and funding sources to initiate new partnerships, while others are looking for opportunities to sustain a successful partnership to continue existing research projects. This session will include a panel of speakers representing the perspectives of community-based organizations, academic institutions, non-profit foundations, and federal agencies. The speakers will discuss what their organization can bring to the table in terms of providing resources and some ideas they have on where their organization has been successful in providing or securing resources in the past. Additionally, there will be a larger discussion of the challenges and best practices for engaging communities that tend to fall outside the reach of most federally funded research programs.

Discussion Questions:

General:

- What are the major factors that limit community/non-profit organizations participation in grant-funded projects?
- What makes a particular funding source a good match for an organization or project? How can an organization adapt if its traditional funding source no longer meets its needs?

For Non-Profit/Community Organizations:

- Beyond training in environmental health and research methods, what are the topics for which you (your organization) need additional training in order to participate in grant-funded projects? Are there any helpful resources your organization has developed or used to address some of these training needs?
- Beyond funding support, what types of support would help your participation in research grant-funded projects? How does this change as a project/collaboration matures? Are there ways to leverage resources to get this support (e.g., access to a general IRB)?

- Federal government grants work on a cost-reimbursement basis, but many non-profits do not have the cash flow or cash on hand to undertake expensive programs and wait for reimbursement. How has your community organization handled cash flow issues? Does your role on a grant — as a consultant, consortium partner, or the prime grantee — impact your organization's ability to manage cash flow?
- The time from application to award can often be up to a year. Does this cause any unique problems for organizations working on environmental health disparity/environmental justice issues? How has your organization dealt with start-up delays?
- The model that federal research grants use for tracking effort levels is based on an academic appointment system. For organizations that do not primarily conduct research, staff are hired to do other activities and may not be able to devote a set amount of time to a research project. Do the way research grants handle personnel commitments prohibit community partners from participating on projects? Does other support make sense? How has your community organization worked with this?

For Academic Partners:

- How have you collaborated with community-based organizations to secure and manage federal grants, and to ensure that the community-based organization has the capacity to support their participation in the project?
- As a university partner, it is likely that you have a grants management infrastructure to manage your grants. Do you offer training opportunities or assist community-based organizations to participate in federally funded projects?

For Funding Partners:

- What types of community-based research projects have been supported through your organization? How does the level of support for community-based research compare with support for work in other areas such as advocacy and policy work?
- What are the major differences in private foundation support and federal support for environmental justice & environmental health disparities research? How are their processes and scope of research considered different?
- What opportunities do private foundations offer for support of community-based research? Are there particular foundations that emphasize this area of support?

Concurrent Sessions #3

Cumulative Exposures: The Role of Epidemiology in Elucidating Environmental Contributions to Health Disparities

Moderator: Christine Ekenga, *NIEHS*
Presenters: Paul Juarez, *University of Tennessee Health Science Center*
Gary Miller, *Emory University*
Amy Schulz, *University of Michigan*

Room: Rodbell BC

Session Description:

Epidemiology aims to evaluate the relative contributions of different types of exposures on health outcomes. It has long been recognized that the single-exposure approach to exposure assessment does not capture the multifactorial nature of many chronic diseases. The session will include presentations on the exposome and the study of environmental exposures from multiple sources, including the internal biological environment, the physical environment, and the social environment. Panelists will provide an overview of their research and discuss current approaches to evaluating the relationship between multiple environmental exposures and health outcomes. The session will conclude with a discussion on how these methods can be used to improve our understanding of health disparities.

Discussion Questions:

- What are the best practices and emerging trends for studying multiple environmental exposures?
- What are the major challenges to cumulative exposure assessment?
- How should we engage communities in this research?
- How can we incorporate emerging technologies for data collection and analysis (e.g. GIS, GPS, online data collection, and high throughput “omics” methods) into this research?
- How do we ensure that technological advances do not have the unintended consequences of excluding populations of interest (e.g. minority, low SES, people unwilling to donate specimens, people who lack internet access, etc…)?

Using Health Impact Assessments (HIAs) to Address Environmental Health Disparities and Create Equity in Communities

Moderator: LaToria Whitehead, *CDC*
Presenters: Ogonnaya Dotson-Newman, *WE ACT for Environmental Justice*
Kenneth Smith, *National Association of County and City Health Officials*
Alexandra Nolen, *Center to Eliminate Health Disparities, University of Texas Medical Branch*

Room: Rodbell A

Session Description:

The purpose of this session is to explore the use of health impact assessments (HIAs) in (or by) environmental justice communities to build capacity and improve environmental conditions potentially linked to disease outcomes or health disparities, as well as move toward a health-in-all-policies framework.

Objectives: Participants will understand the use of HIA to create equity in communities, as well as become familiar with actions taken that impact policy at the local level by environmental justice organizations.

Discussion Questions:

- What are some of the local political challenges communities face in implementing Health Impact Assessments (HIAs)?
- What are some of the "tools" used by communities to understand environmental exposures and outcomes?
- What other ethical issues/challenges have you seen of researchers and community representatives working together in creating change in environmental justice communities?
- What are some practical ways environmental justice advocates can use an Health Impact Assessment (HIA) to bring about systems changes leading to health in all policies?

Conflicts over Research that Identifies Community Impacts of Environmental Exposures

Session Leads: Steven Wing, *University of North Carolina, Chapel Hill*
John Sullivan, *University of Texas Medical Branch*
Presenters: Wilma Subra, *Subra Company*
Gary Grant, *North Carolina Environmental Justice Network*
David Lewis, *Neural Dynamics Research Group, University of British Columbia*
Sharon Croisant, *University of Texas Medical Branch*

Room: D350

Session Description:

When evidence of exposure or health impacts is released, environmental health and environmental justice researchers sometimes experience negative responses from polluters or groups that represent them. Threats to the confidentiality of research participants, personal attacks, or challenges to funding agencies that provide research support, may occur. This session offers perspectives from research groups and community organizations that have experienced such responses, describes the kinds of problems that can be expected, and will help to prepare others to best navigate conflicts that could occur because of their research.

Discussion Questions:

- Do environmental health researchers avoid topics viewed as controversial by polluters and regulatory agencies? How does choice of research questions affect the ability of researchers to serve the interests of people exposed to pollutants?
- How can researchers and community members prepare for possible retaliation by polluters, government agencies, industry trade associations, and institutions that receive financial support from these entities?
- How can scientists from institutions with resources (e.g., universities, government agencies) help community research partners avoid harms that could come from retaliation?
- How can independent scientists collaborate with communities that experience environmental injustice to address research needs that are not met by universities and government?

Poster Abstracts

1. A Community-Based Assessment of Vulnerability and Resiliency 27

2. Addressing Disparities in Safe Drinking Water Access on the Crow Reservation, Montana 28

3. Applying a Community-based Participatory Research Framework to Assess Soil Contamination Levels in North Charleston, South Carolina 29

4. Can Zinc Reverse Uranium Toxicity? Potential for a Community-Based Intervention 30

5. Community-Based Participatory Research Projects and Policy Engagement to Protect Environmental Health on St. Lawrence Island, Alaska 31

6. Community-Based Risk Assessment of Exposure to Waterborne Contaminants, Crow Reservation, Montana 33

7. Data Quality Challenges in a Participatory, Repeated-Measures Study with Adolescents Attending Schools near Concentrated Animal Feeding Operations 35

8. Defining Environmental Health Literacy - The University of Arizona & The University of Rochester 36

9. Disparities, Hazards, and Health: An Assessment of Brownfields and Health Care Access in Maryland 37

10. Disparities in the Burden of Disease Attributable to Drinking Water Pollution in North Carolina 38

11. Engaging East Baltimore Residents Through a "Day at the Market" Event 39

12. Environmental Research Translation at Contaminated Sites for Improving Community Engagement and Citizen Science: The Gardenroots Case Study 40

13. The Health Environment Launch Project 41

14. Highway Pollution and Health in Boston Chinatown: Preliminary Observations 42

15. Hospitals for a Healthy Environment in Rhode Island 43

16. "Open Data" Practices for Environmental Health Studies 44

17. Partners in Environmental Health Research: PBB Citizens Advisory Board and the Michigan PBB Research Team 45

18. Reducing Exposure to Endocrine Disruptors from Personal Care Products in Adolescent Latinas: The HERMOSA Study 46

19. Translating Popular and Scientific Knowledge to Reduce Occupational Risks among Female Farmworkers 47

20. The Use of Segregation Indices, Townsend Index, and Air Toxics Data to Assess Cancer Risk Disparities in Metropolitan Charleston, South Carolina 48

21. Using Art as Advocacy in Communities Near the Tar Creek Superfund Site 49

22. Healthy Community Design in Somerville MA - Using Local Volunteers and Regional Allies to Re-Shape the Land Use / Transportation / Air Quality / Public Health Continuum 50

23. Using public School Enrollment Records for Examining Asthma in School Children in Eugene, Oregon 51

24. The ALERT Model: Advancing Community-Based Research through Environmental Health Data Capacity and Co-Learning Activities 52

25. Community Outreach and Education Core (COEC): Increasing Capacity of Environmental Public Health Issues and Policy Strategies 53

26. Developing a Research Oasis for Farmworkers: The Community Based Research Network 54

27. Developing Novel, Collaborative Models for Tribal Environmental Health Research 55

28. Environmental Health Disparities Intervention Research at UNM 56

29. Environmental Justice: How Certain? Constructing Proper Confidence Intervals from Aggregated Geospatial Data Using Stochastic Simulation 57

30. The Impact of Worker Education and Training on Communities: A Qualitative and Quantitative View 58

31. Restoring The Research Desert In American Indian Communities 59

32. Building Partnerships with Communities to Address the Unique Contributions of Environment to Health Disparities 60

33. NIEHS Investment in Social and Behavioral Research: Exploring the Totality of Exposures to Understand the Multiple Causes of Diseases 61

34. Partnerships for Environmental Health Resource Center: Connect & Share 62

35. PEPH Evaluation Tools 63

1. A Community-Based Assessment of Vulnerability and Resiliency

Joan Flocks (flocks@law.ufl.edu)

Contributing Authors:
Mayer, B., University of Arizonia
Flocks, J., University of Florida
Cantwell, R., Cedar Key Aquaculture Association Inc.
Colson, S., Cedar Key Aquaculture Association Inc.
Ishmael, F., Citizens Against Toxic Exposure
Jones, D., Alabama Seafood Association
Taylor, J., Franklin's Promise Coalition

Organization:
Center for Governmental Responsibility,
Levin College of Law, University of Florida

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Community-Engaged Research

Abstract:
Our project seeks to advance the current knowledge on community vulnerability and resiliency by using community-based participatory research (CBPR) to qualitatively assess and improve upon indicators of social vulnerability and resiliency to technological disasters and identify successful strategies for resiliency in resource dependent communities along the Gulf Coast. This poster presents an overview of the community partners involved and how we have used CBPR in four communities to collect formative research data.

2. Addressing Disparities in Safe Drinking Water Access on the Crow Reservation, Montana

John Doyle (doylej@lbhc.edu)

Contributing Authors:

Doyle, J., Crow Environmental Health Steering Committee; Apsaalooke Water and Wastewater Authority; Little Big Horn College; Crow Tribal member

Kindness, L., Crow Environmental Health Steering Committee; Apsaalooke Water and Wastewater Authority; Crow Tribe Infrastructure Department; Crow Tribal member

Bear Don't Walk, U. Attorney At Law; Crow Tribal member

Realbird, J., Apsaalooke Water and Wastewater Authority; Crow Tribal member

Crow Environmental Health Steering Committee (Crow Tribal members)

Eggers, M.J., Little Big Horn College; Montana State University Bozeman

Ford, T.E., University of New England

Camper, A.K., Montana State University Bozeman

Organization:

Crow Environmental Health Steering Committee, Little Big Horn College

Topic area(s):

Cumulative Risk/Exposure

Track(s):

Community-Engaged Research; Translation, Dissemination, and Communication

Abstract:

The Apsaalooke [Crow] Water and Wastewater Authority (AWWA) and the Crow Environmental Health Steering Committee (CEHSC) have been collaborating on a community-based risk assessment of exposure to waterborne contaminants on the Crow Reservation, since 2006. This presentation will describe lessons learned in conducting community-based participatory research on water quality in our community (through the CEHSC), and in working to upgrade water and wastewater infrastructure in the complex legal and jurisdictional Reservation environment (as the AWWA). This risk assessment has provided the baseline surface and groundwater quality data required by the AWWA to raise funds for infrastructure improvement (> $20 million to date); these data are also being disseminated to the community to reduce health risks from waterborne contaminants. The CEHSC, which represents diverse Tribal stakeholders, could provide a model for how federal agencies can successfully work with Reservation communities, as well as how to support local environmental research. We have learned that upgrading water and wastewater infrastructure is made substantially more difficult by the legal and regulatory gaps and jurisdictional complexities of Indian country. We will explain these challenges and solutions we have found for resolving them. While every Reservation community is different, we hope our experiences will be useful to other Tribes and to federal agencies working with them to address water quality and safe drinking water issues in Indian country. The presenter is a founding member of both the AWWA and the CEHSC, and is a Tribal member.

3. Applying a Community-based Participatory Research Framework to Assess Soil Contamination Levels in North Charleston, South Carolina

Laura Dalemarre (ldalemar@umd.edu)

Contributing Authors:
Wilson, S., University of Maryland
Rice, L., University of South Carolina
Jiang, C., University of Maryland
Burwell, K., University of Maryland
Zhang, H., University of South Carolina
Williams, E., University of South Carolina
Dalemarre, L., University of Maryland
Fraser-Rahim, H., Lowcountry Alliance for Model Communities

Organization:
University of Maryland - College Park

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Community-Engaged Research

Abstract:
Background: The Lowcountry Alliance for Model Communities (LAMC) neighborhoods host various hazardous waste sites, are surrounded by heavily trafficked roadways, and may be further impacted by the expansion of the Port of Charleston. The purpose of this study was to conduct a Phase I (baseline) and Phase II (follow-up) soil assessment to determine the magnitude of contamination in North Charleston, South Carolina prior to the construction of the new port terminal. **Methods:** Community members were recruited to collect soil samples in North Charleston neighborhoods. Samples were collected near heavily trafficked roadways, background and major industrial sites, brownfields, Superfund sites, schools, and community centers. Fifty samples were collected during Phase I while 150 samples were collected in Phase II. Samples were analyzed for 13 pollutants and mean, 5th, 95th and quartiles of pollutants were calculated for all neighborhoods. Correlation and respective significance levels were estimated between pollutants and minimum and maximum concentrations were documented. The USEPA's screening level data was matched by CAS number with pollutants measured in the samples. **Results:** Arsenic, barium, beryllium, cadmium, copper, iron, lead, magnesium, manganese, mercury, nickel, and zinc concentrations were measured in all samples. The Meeting & Spruill location (a heavily trafficked area) had a maximum measurement of seven pollutants which was the highest of all stations. In Phase I, arsenic concentrations were 7 times higher than the Residential Screening Level and almost 2 times higher than the Industrial Screening Level in half of the stations. In Phase II, four pollutants (arsenic, beryllium, cadmium, and mercury) had a measurement under the detection limit and cadmium had 30 (21.1% of all samples) samples under the detection limit. Arsenic concentrations were 10 times higher than Residential Screening Level and 2 times higher than the Industrial Screen Level in half of the samples.Conclusion: The high concentration and array of contaminants identified in samples may be indicative of the differential exposure burden among populations who live near environmental hazards in LAMC neighborhoods and in the Charleston region.

4. Can Zinc Reverse Uranium Toxicity? Potential for a Community-Based Intervention

Johnnye Lewis (jlewis@cybermesa.com)

Contributing Authors:
Cooper, L.
Tsosie, R.
Begay, D.
Lewis, J.
Hudson, L.

Organization:
University of New Mexico, College of Pharmacy

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Community-Engaged Research

Abstract:
Many Navajo people have been, and continue to be, exposed to uranium through the legacy of uranium mining. 1100 abandoned Cold War uranium waste sites remain within Navajo communities and numerous wells exceed maximum contaminant levels for uranium and other metals such as arsenic. Certain metals can disrupt protein function by interacting with zinc finger structures and thus inhibit important cellular processes including DNA repair. Based on this mechanism, many metals are now viewed as co-carcinogens and amplify the DNA damaging capacity and tumorigenicity of other carcinogens even at levels where the metals alone are not carcinogenic. The carcinogenicity of uranium is well established in the literature, but there is little known regarding uranium interaction with zinc finger protein structures. Published reports demonstrating that uranium exposure leads to deficiency in DNA repair processes suggest that uranium may interfere with zinc finger DNA repair proteins. Our work with arsenic demonstrates that very low levels of arsenic cause zinc depletion from target zinc finger DNA repair proteins, leading to increased DNA damage and mutagenesis that can be reversed by zinc. Based on these findings, we investigated the effect of uranium on DNA repair and the activity of a specific zinc finger DNA repair protein target (PARP-1). Uranium in the form of uranyl acetate (UA) demonstrated little cytotoxicity in an immortalized human embryonic kidney cell line (HEK293) at concentrations at or below 10 µM. UA at concentrations of 10 or 100 µM inhibited the DNA repair protein PARP-1 and caused retention of ultraviolet radiation-induced DNA lesions (CPDs and pH2Ax). The addition of zinc ameliorated PARP-1 inhibition and partially decreased the retention of DNA damage. These findings suggest that one mechanism of uranium toxicity may rely on disruption of zinc finger protein function, so this work will inform a planned assessment of the potential for zinc to block uranium toxicity as an additional component of the Navajo Birth Cohort Study.

5. Community-Based Participatory Research Projects and Policy Engagement to Protect Environmental Health on St. Lawrence Island, Alaska

Pamela K. Miller (pamela@akaction.com)
Vi Waghiyi (vi@akaction.org)

Contributing Authors:
Miller, P.K., Alaska Community Action on Toxics (ACAT)
Waghiyi, V., ACAT
Welfinger-Smith, G., University at Albany, Institute for Health and the Environment; Albany, NY
Carter Byrne, S., University at Albany, Institute for Health and the Environment; ACAT
Carter Byrne, S., University at Albany, Institute for Health and the Environment; ACAT
Kava, J., Native Village of Savoonga, St. Lawrence Island; AC AT
Gologergen, J., Native Village of Savoonga, St. Lawrence Island; ACAT
Eckstein, L., ACAT
Scrudato, R., University at Albany, Institute for Health and the Environment; Albany, NY
Chiarenzelli, J., St. Lawrence University, Department of Geology; Canton, NY
Carpenter, D.O., University at Albany, Institute for Health and the Environment; Albany, NY
Seguinot-Medina, S., ACAT

Organization:
Alaska Community Action on Toxics (ACAT)

Topic area(s):
Cumulative Risk/Exposure; Research Deserts

Track(s):
Community-Engaged Research

Abstract:
This poster synthesizes discussion of collaborative research results, interventions, and policy engagement for St. Lawrence Island during the years 2000-2012. As part of ongoing community-based participatory research (CBPR) studies with the leadership and communities of St. Lawrence Island, Alaska, five discrete exposure-assessment projects were conducted: (1) a biomonitoring study of human blood serum; (2-4) three investigations of levels of contaminants in environmental media at an abandoned military site at Northeast Cape using sediment cores and plants, semi-permeable membrane devices, and blackfish, respectively, and 5) a study of traditional foods. Blood serum in the Yupik residents of St. Lawrence Island showed elevated levels of PCBs with higher levels among those exposed to the military site at Northeast Cape, an important traditional subsistence-use area. Environmental studies at the military site demonstrated that the site is a continuing source of PCBs to a major watershed, and that cleanup operations at the military site generated PCB-contaminated dust on plants in the region. Important traditional foods eaten by the people of St. Lawrence Island showed elevated concentrations of PCBs, which are primarily derived from the long-range transport of persistent pollutants that are transported by atmospheric and marine currents from more southerly latitudes to the north. An important task for all CBPR projects is to

conduct intervention strategies as needed in response to research results. Because of the findings of the CBPR projects on St. Lawrence Island, the CBPR team and the people of the Island are actively engaging in interventions to ensure cleanup of the formerly-used military sites; reform chemicals policy on a national level; and eliminate persistent pollutants internationally. The goal is to make the Island and other northern/Arctic communities safe for themselves and future generations. As part of the CBPR projects conducted from 2000-2012, a series of exposure assessments demonstrate that the leaders and community members of St. Lawrence Island have reason to be concerned about the health and well-being of people due to the presence of carcinogenic chemicals as measured in biomonitoring and environmental samples and important traditional foods.

6. Community-Based Risk Assessment of Exposure to Waterborne Contaminants, Crow Reservation, Montana

Margaret Eggers (eggersm@lbhc.edu)
Dayle "Candy" Felicia (candylafrance@yahoo.com)

Contributing Authors:
Eggers, M., Little Big Horn College; MSU, Bozeman
Doyle, J., Crow Environmental Health Steering Committee; Apsaalooke Water and Wastewater Authority; Little Big Horn College; Crow Tribal member
Lefthand, M., Crow Environmental Health Steering Committee; Indian Health Service Hospital; Crow Tribal Member
Kindness, L., Crow Environmental Health Steering Committee; Crow Tribal Infrastructure Department; Apsaalooke Water and Wastewater Authority; Crow Tribal member
Bear Don't Walk, U., Crow Environmental Health Steering Committee; Crow Tribal member
Young, S., Crow Environmental Health Steering Committee; MSU, Bozeman; Crow Tribal member
Good Luck, B., Crow Environmental Health Steering Committee; Crow Tribal Environmental Protection Department; Crow Tribal member
McCormick, A. Knows His Gun, Crow Environmental Health Steering Committee; Messengers for Health; Crow Tribal Member
Dietrich, E., MSU, Bozeman
Felicia, D., MSU, Bozeman; Crow Tribal member
Ford, T., University of New England
Roberts, D., MSU, Bozeman
Camper, A., MSU, Bozeman

Organization:
Crow Environmental Health Steering Committee / Little Big Horn College / Montana State University Bozeman

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Community-Engaged Research; Translation, Dissemination, and Communication

Abstract:
Crow Reservation community members concerned about health risks from poor water quality formed the Crow Environmental Health Steering Committee (CEHSC) in 2004. Our community-based risk assessment addresses exposures to mineral and microbial contaminants via domestic, cultural, and recreational water sources. We hypothesize that rural residents are at risk due to reliance on shallow wells, subsistence practices, cultural traditions, limited financial resources to treat bad well water, and other factors characterizing Reservation communities. Our objective is to reduce health risks through research, education, mitigation, and community capacity building. Little Big Horn College (the local Tribal College), the Crow Tribal Administration and Environmental Protection and Infrastructure Departments, the Apsaalooke Water

and Wastewater Authority, the Indian Health Service Hospital, Messengers for Health, and academic partners guide this work through monthly CEHSC meetings. Little Big Horn College science majors participate as research interns. Bacterial and chemical analyses of residents' well water and of local rivers and springs were conducted. Families completed surveys to assess uses and maintenance of wells and septic systems, exposure routes from all water sources, and chronic health conditions. Key informant interviews provided qualitative data. Well water contaminants were mapped using GIS. All participating families have received a printed report and explanation of their well water test results, and in person follow-ups are being conducted. A multivariate analysis of factors associated with microbial contamination of wells is being conducted. Survey data is being analyzed against well water data to determine the extent to which families are consuming contaminated well water. Of 160+ wells tested, 54% present health risks from heavy metals, nitrates and/or coliform contamination. The metal-rich area geology, agriculture, and multiple sources of bacterial contamination are all factors. All rivers and some springs are fecally contaminated, resulting in health risks as water from these sources is consumed untreated and used for bathing in ceremonial practices and/or recreationally by children all summer. Mitigation strategies implemented include homeowner and community education, shock chlorination of wells, GIS mapping, municipal water/wastewater infrastructure improvements, and pilot testing of an affordable, high-tech home water treatment system.

7. Data Quality Challenges in a Participatory, Repeated-Measures Study with Adolescents Attending Schools near Concentrated Animal Feeding Operations

Virginia Guidry (virginia.guidry@unc.edu)

Contributing Authors:
Guidry, V.
Wing, S.
Gray, C.

Organization:
University of North Carolina, School of Public Health, Department of Epidemiology

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Epidemiology; Community-Engaged Research

Abstract:

Background: Concentrated animal feeding operations (CAFOs) can produce substantial quantities of water and air pollution. North Carolina CAFOs are disproportionately located in low-income communities and communities of color. Although schools' proximity to CAFOs has been linked with prevalence of asthma-related illness in children, community health effects are difficult to investigate due to lack of medical and pollution data and industry influences. The Rural Air Pollutants and Children's Health (RAPCH) study used a participatory, repeated-measures design to investigate health impacts in adolescents attending schools near CAFOs while providing educational benefits and increasing community environmental health awareness. **Methods:** In 2009, fifteen science classes (N=340 students) from three middle schools participated for 3-5 weeks in 5 sequential waves. Weekday diary reports included current symptoms and 24 hour recall of odor and time outside; participants also measured their own weekday lung function. Ambient particulate matter less than 10 µm in diameter (PM10) and hydrogen sulfide (H2S) were measured outside of schools. Diary entries were checked daily for completeness by study staff. We used frequency counts and multivariate linear regression to examine odor reports for plausibility. We plotted air pollutants over time and used linear and logistic fixed effects regression to assess average reported levels by day in study. **Results:** 25% of students reported no episodes of livestock odor, despite home and school proximity to CAFOs. However, mean odor reported across the study period (0-4 scale) was highest for those whose families raised livestock or were involved in frequent livestock chores ($\beta = 0.27$, 95%CI = 0.16,0.38). Lung function measurements decreased and diary reports of livestock odor, illness symptoms, and time outside grew less frequent with study day for most waves. Linear trends by wave for log odds of reporting ranged from -0.041 to -0.206 for runny nose and -0.003 to -0.202 for odor. We saw no obvious time trends in ambient pollutant measurements. **Conclusions:** Measurements of most exposures and outcomes decreased over the study period, indicating study fatigue despite continued complete data and participant engagement, which can confound epidemiologic analysis of repeated-measures. Future repeated-measures studies with adolescents should carefully consider the length of study participation and strategies to maintain high data quality over time.

8. Defining Environmental Health Literacy - The University of Arizona & The University of Rochester

Marti Lindsey (lindsey@pharmacy.arizona.edu)

Contributing Authors:
Valdez, M.K., University of Arizona
Velez, M.D., University of Rochester
Chen, S., University of Rochester
Lindsey, M., University of Arizona

Organization:
Southwest Environmental Health Sciences Center

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Translation, Dissemination, and Communication

Abstract:
The focus on the consequences of poor health literacy has spawned interest in specific content areas of health. As providers of environmental health information and services who have first-hand experience with the difficulties of risk communication and interpretation, we are interested in the unique content and skills associated with processing environmental health hazards. We are interested in the question, "What makes someone environmentally health literate?" We seek to answer this question by actively seeking the input of diverse groups, identifying areas of agreement, and negotiating differences. The aim of this project is to produce a consensus definition of environmental health literacy. It will use the perspectives of four groups that have an interest in environmental health information: clinicians, environmental health researchers, environmental public health educators, and users of environmental health information in the public. In depth interviews are being conducted with environmental health professionals and a grounded theory approach is being used to identify common themes regarding skills and knowledge required for identifying, understanding, and taking action regarding environmental exposures. A model describing a scale of environmental health literacy is being built based on information collected from interviews with professionals. In the next phase, users of environmental health information from the general public will be asked to participate in focus group interviews to determine how they process and use information concerning environmental health hazards and risks. The questions for the focus group interviews are being formulated based on the developing model. The focus group responses will be compared to the process and skills identified by the environmental health professionals. The final stage will be a survey of environmental health professionals across the NIEHS community, both intramural and extramural. We will use areas of agreement to develop a definition of environmental health literacy, describe the skills needed to be environmentally health literate, and compare it to how different at-risk groups process environmental information. This will set the stage for further research that includes developing comprehensive measures, identifying the consequences of low versus high EHL, and implementing methods of improving environmental health literacy.

9. Disparities, Hazards, and Health: An Assessment of Brownfields and Health Care Access in Maryland

Rianna Murray (rmurray@umd.edu)

Contributing Authors:
Murray, R.
Jiang, C.
Zhang, H.
Wilson, S.
Rehr, R.
Naney, C.

Organization:
University of Maryland - College Park

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Epidemiology

Abstract:

Background: In order for brownfield redevelopment to be used as a tool to correct environmental injustice, we must first understand which populations are disproportionately burdened. The purpose of this study was to assess spatial disparities in the distribution of brownfields across Maryland to determine which groups are differentially burdened and then further evaluate inequalities in health care infrastructure in communities impacted by brownfields. **Methods:** The FRS 2010 brownfield state file was obtained from the US EPA's ACRES Geospatial Data Download Service. US census tract and block level data (2010) were used to enumerate population and community-level characteristics such as race/ethnicity, poverty and employment status, education, home ownership, home built before 1950, and urban area. Additional measures were used to assess segregation (Diversity Index), deprivation (Townsend index), SES (median household income), and health care infrastructure (Health Professional Shortage Areas (HPSA)). Geographic Information System (GIS) were used to map the distance between brownfields and closest census tracts. Spatial methods (mean distance analysis, buffer analysis, and spatial approximation) were employed and regression analysis was performed to evaluate the relationship between the distribution and number of brownfields and the aforementioned factors. **Results:** Low-income and non-white census tracts were located closer to brownfields. A 10% increase in black or non-white populations in census tracts decreased the distance of the census tracts to brownfields by 0.5 or 0.4 km. In contrast, increasing the white population would increase the distance to a brownfield by 0.4 km. In urban areas, the HSPA census tracts were located closer to a brownfield by 2.81 km when compared to non-HSPA census tracts (p-value <0.001) while rural areas were located closer to a brownfield by 5.16 km (p-value 0.054). **Conclusion:** Disparities exist in the distribution of brownfields in regards to race/ethnicity, socioeconomic status, segregation, and access to health care infrastructure. Through a strong revitalization plan that follows equitable development principles, brownfields can be used as a resource to promote greater sustainability and quality of life in host communities.

10. Disparities in the Burden of Disease Attributable to Drinking Water Pollution in North Carolina

Jacqueline MacDonald Gibson (jackie.macdonald@unc.edu)

Contributing Authors:
DeFelice, N.
Leker, H.

Organization:
University of North Carolina at Chapel Hill

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Epidemiology

Abstract:
This research is assessing disparities in access to municipal water services in North Carolina and the health effects of those disparities. The advent of community water and sanitation services was one of the greatest public health advances of the twentieth century, yet there is evidence of disparities in access to community water systems and of quality of delivered water among community water supplies. For example, evidence suggests that in North Carolina and throughout the South, policies and practices limiting voting access and segregating towns created a legacy of racial and ethnic minorities underserved by water and sanitation utilities. This poster will present preliminary findings regarding disparities in access to water services for portions of North Carolina and comparisons of cancer risks in communities with and without municipal water service. While anecdotal information provides evidence of disparities in the quality of water services in North Carolina, this project is the first systematic statewide analysis to document the extent of these disparities and quantify the resulting public health consequences.

11. Engaging East Baltimore Residents Through a "Day at the Market" Event

Michael Trush (mtrush@jhsph.edu)

Contributing Authors:
Trush,M.
Bates-Hopkins,B.
Tracey,P.

Organization:
Johns Hopkins Center in Urban Environmental Health

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Translation, Dissemination, and Communication

Abstract:
Baltimore City has 6 city-run markets for food and other vendors. One of the mechanisms by which the NIEHS Johns Hopkins Center in Urban Environmental Health has engaged community members is through an activity called "Day at the Market." It is currently a joint Environmental Justice Partnership and Community Outreach and Education Core (COEC) program that has been ongoing for the past 6 years. This informal event engages Baltimore residents, disseminates materials, obtains feedback from the community, and promotes interactions between residents and researchers. "Day at the Market" is used to discuss environmental health issues relevant to the community; to disseminate materials; to introduce researchers and their research project to the community; and to assist investigators in the recruitment of community residents for Community Advisory Boards, focus groups and participation in translation-oriented research. We have provided information about research in environmental health and justice issues to residents including how to safeguard against environmental hazards such as lead poisoning, mold, community demolition hazards, cancer, smoking, COPD, and asthma. In 2013, we have expanded this event to two days a month through a grant from the Maryland Cigarette Restitution Fund. Accordingly, COEC is working closely with the community outreach committee of the Sidney Kimmel Comprehensive Cancer Center to assure that this event is supplied with appropriate materials.

12. Environmental Research Translation at Contaminated Sites for Improving Community Engagement and Citizen Science: The Gardenroots Case Study

Monica Ramirez-Andreotta (m.ramirezandreotta@neu.edu)

Contributing Authors:
Ramirez-Andreotta, M., Northeastern University
Brusseau, M., The University of Arizona
Artiola, J., The University of Arizona
Maier, R., The University of Arizona
Gandolfi, A.J., The University of Arizona

Organization:
Northeastern University

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Community-Engaged Research; Translation, Dissemination, and Communication

Abstract:
Background: Challenges associated with hazardous waste and contaminated sites are persistent and complex and are compounded by the different needs and goals of involved parties. Holistic solutions that incorporate all affected parties are needed. Objective: As a solution, we propose Environmental Research Translation (ERT), a holistic methodology that includes a transdisciplinary research team, effective collaboration, information transfer, public participation in scientific research, and a cultural model of risk communication. **Methods:** Using Gardenroots: The Dewey-Humboldt, Arizona Garden Project as a case study, we demonstrate how implementing ERT methods led to the formation of a community-academic partnership that included a co-created citizen science program. ERT methods were used to design a place-based, community-driven project where academics and community members maintained a reciprocal dialogue, and together, successfully converted the basic findings into resources of direct use for the community members. **Results:** ERT methods improved environmental health research, information transfer, and risk communication efforts. Further, incorporating the community in the scientific process produced both individual learning outcomes (e.g. increased understanding of environmental science and the scientific process that informed their decisions) and community-level outcomes (e.g. community capacity and trust with an academic institution). One highlight of the project was the individualized booklets designed to report back the "raw" data (i.e. milligrams of arsenic per kilogram of vegetable) and how much participants could eat from their garden at different excess target risks. **Conclusions:** Our experience has shown that complex problems arise in communities neighboring a contaminated site, but implementing ERT can increase the community's understanding and involvement in decision-making and risk communication, which can mitigate exposure and lessen the impact of the problem. Although there are challenges associated with ERT, the benefits of this proposed translational science methodology can advance environmental health research and communication efforts.

13. The Health Environment Launch Project

Andrea T. Guajardo (andieguajardo@gmail.com)

Contributing Authors:
Guajardo, A.T.

Organization:
Conejos County Clean Water, Inc

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Community-Engaged Research

Abstract:
Conejos County Clean Water, Inc. (CCCW), a citizens' non-profit 501(c)(3) organization based in Antonito, Colorado, is submitting this project proposal in response to the Request for Application (RFA) for the Environmental Justice Small Grants Program. The project title is Health and Environment Launch Project (HELP).

The purpose of this project is to create a baseline data set for ambient air, water, soil, and health in Conejos County with regard to radioactive, hazardous, and toxic contaminants and respective diseases that can be caused by exposure to said contaminants. A second goal is to establish an air monitor station that will have the ability to collect radioactive, hazardous, and toxic contaminants for laboratory analysis. This project proposes activities that are authorized by the Clean Water Act, Section 104 (b) (3), specifically researching, monitoring, relating to health and welfare effects of control of water pollution; Clean Air Act, Section 103 (b) research, monitoring, relating to health and welfare effects of control of air pollution; and, Toxic Substances Control Act, Section 10 (a), monitoring on toxic substances.

14. Highway Pollution and Health in Boston Chinatown: Preliminary Observations

Xianbin Yin (chinatownresidents@gmail.com)

Contributing Authors:
Wang, F., Tufts University School of Medicine
Yin, X., Chinatown Resident Association
Zamore, W., Somerville Transportation Equity Partnership
Corlin, L., Tufts University School of Engineering
MacNaughton, P., Harvard School of Public Health
Lane, K., Boston University School of Public Health
Wu, C.-D., Harvard School of Public Health
Wang, D.D., Tufts University School of Medicine
Bright, O.-J., Tufts University School of Medicine
Patton, A., Tufts University School of Engineering
Durant, J., Tufts University School of Engineering
Brugge, D., Tufts University School of Medicine

Organization:
Tufts University School of Medicine

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Community-Engaged Research

Abstract:
Boston Chinatown is a small, low-income neighborhood located next to two major highways, I-93 and I-90, a passively-vented tunnel exit on I-93 and diesel commuter rail lines. The Community Assessment of Freeway Exposure and Health study (CAFEH) measured traffic-related air pollution for one year and recruited residents in Chinatown to collect health data. Despite lower income and education, participants born in China were significantly less likely to have asthma (OR, 0.21; CI = 0.10-0.45), high cholesterol (OR, 0.47; CI = 0.30-0.72), angina (OR, 0.29; CI = 0.08-1.02), or congestive heart failure (OR = 0.14; CI = 0.03-0.60) than U.S. born whites. There were no significant differences for self-reported heart attacks, strokes, high blood pressure, diabetes, or arthritis.Mobile air pollution monitoring in Chinatown showed that there was a discernible gradient of ultrafine particles (UFP) from I-90, but not from I-93. There are occasional days with very high levels of UFP across the entire neighborhood. A sub-study looked at the variation in pollution levels and population with apartment elevation in Chinatown. UFP and PM2.5 were found to decrease slightly with elevation, however, since we restricted recruitment to the first four floors, vertical distance did appear to not affect UFP exposure appreciably.Chinatown poses a challenge in terms of modeling and assignment of UFP exposures due to the complexity of multiple transportation sources, street canyons, and participants living in multifamily buildings with different air circulating systems. Chinatown participants reported spending significantly more time inside of their home on work/weekday (18.27 hrs) than each of our two other neighborhoods (17.14 hrs; $P < 0.05$; and 17.33 hrs; $P < 0.05$) and traveled less on highways (0.14 hrs vs. 0.4 hrs; $p < 0.05$; and 0.41 hrs; $P < 0.05$).The demographic characteristics of the residents of Chinatown and the dense housing next to major transportation pollution sources make it an interesting neighborhood. Exposure assessment and testing associations with cardiovascular risk will be the next steps in CAFEH. There has previously been little attention paid to air pollution exposure in North American Chinatowns.

15. Hospitals for a Healthy Environment in Rhode Island

Phil Brown (p.brown@neu.edu)

Contributing Authors:
Panikkar , B.
Brown, P.

Organization:
Northeastern University

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Translation, Dissemination, and Communication

Abstract:
The poster presentation will feature the activities of the Hospitals for a Healthy Environment in Rhode Island, a coalition that promotes cost-effective, healthy, and environmentally sustainable health care in Rhode Island. This coalition was started by the Community Outreach and Translation Core of the Brown University Children's Environmental Health Center and the Brown University Superfund Research Program, in partnership with nurses at Women and Infants Hospital (WIH). The origins at WIH were the Nurse Manager's success at removing DEHP- and PVC-based medical equipment from its Neonatal Intensive Care Unit (NICU), and our desire to spread this throughout the hospital. Under the guidance of Health Care Without Harm, Practice Greenhealth, and Maryland Hospitals for a Healthy Environment, this initiative was broadened to address a range of issues in health care, including waste management, environmentally preferable procurement, metrics for sustainability, healthy food and beverage, sustainable landscaping, greening the OR, setting up green teams to guide hospital's environmental sustainability work, and instituting the first Environmental Sustainability Awards for health care in Rhode Island. This presentation will feature our accomplishments as well as the challenges we face in promoting environmental sustainability in health care.

16. "Open Data" Practices for Environmental Health Studies

Oscar Zarate (zarate@silentspring.org)

Contributing Authors:
Zarate, O., Silent Spring Institute
Brody, J., Silent Spring Institute
Brown, P., Northeastern University
Sweeney, L., Harvard University
Ramirez-Andreotta, M., Northeastern University
Rudel, R., Silent Spring Institute

Organization:
Silent Spring Institute

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Translation, Dissemination, and Communication

Abstract:
Biomonitoring and other personal exposure assessments — such as chemical measurements in blood, urine, homes, and breathing space — are crucial tools for finding the environmental causes of disease, tracking trends in exposures, and investigating events like the Deepwater Horizon accident and Hurricane Sandy. As more researchers collect these valuable personal exposure measurements, sharing data online or through collaborative agreements can accelerate discovery and solve community health problems. This type of data sharing is already common for genetic information and HIPAA-protected medical records. Environmental health needs to develop parallel practices that maximize data access while protecting the privacy of study participants and communities. This poster will discuss how environmental health measurements potentially raise new ethical concerns about the possibility that the identity of study participants might be revealed even in data considered anonymized, a process called re-identification. Release of personal environmental data could result in stigma for individuals and communities; affect property values, insurance, employability, and legal obligations; or reveal embarrassing or illegal activity. It could damage trust in research as well. We will demonstrate a software tool developed by co-PI Latanya Sweeney to help people evaluate the likelihood that they can be re-identified from basic demographic data (birth date, ZIP code, and gender, a combination that uniquely identifies about 87% of the US population). In addition, we will consider data sharing issues that are unique to environmental studies. We will discuss new informed consent protocols that address online data sharing up-front, using the example of the Personal Genome Project (PGP), which requires participants to complete a novel training module about open data. We have interviewed over 30 participants in the PGP - a long-term genetic study that uses open consent and posts genetic, medical, and other study data on its website for public access. Interviews covered a variety of issues including open consent, online access to study data, re-identification, and environmental exposure data. This project is a collaboration of environmental health scientists, sociologists, and computer scientists at Silent Spring Institute, Northeastern University, and Harvard University with additional input from an advisory council that also includes community activists, ethicists, and lawyers.

17. Partners in Environmental Health Research: PBB Citizens Advisory Board and the Michigan PBB Research Team

M. Elizabeth Marder (mekeati@emory.edu)

Contributing Authors:
Halbert, L., The PBB Citizens Advisory Board
Kelly, R., The PBB Citizens Advisory Board
Marcus, M., Emory University; Kaiser Permanente Center for Health Research
Marder, M., Emory University
Muldoon, C., The PBB Citizens Advisory Board
Muldoon, P., The PBB Citizens Advisory Board
Neyer, G., The PBB Citizens Advisory Board
Nyerges, J., The PBB Citizens Advisory Board
Pearson, M., Emory University
Robbe, J., The PBB Citizens Advisory Board
Smith, C., The PBB Citizens Advisory Board
Suszko, V., The PBB Citizens Advisory Board
Theunick, M., The PBB Citizens Advisory Board

Organization:
Rollins School of Public Health, Emory University

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Community-Engaged Research

Abstract:

Background: The Michigan PBB Registry consists of ~4,000 people exposed to polybrominated biphenyl (PBB) following accidental introduction of a flame retardant compound to animal feed in Michigan (1973-1974). Although research has continued with the Registry for forty years, community engagement has been minimal. As part of the transition of the Registry to Emory University, the research team directly engages the community, with goals of disseminating research findings to those affected, providing a mechanism for community input into research, and establishing a forum for collective action to address shared concerns. Our activities to date include multimedia outreach, community meetings with presentations of research findings and roundtable discussions, and formation of a community advisory board. **Objective:** Utilize NIEHS PEPH metrics to evaluate advisory board development and ensuing collaborations. This poster shows the evolution of our partnership and research-related successes with a related logic model. **Discussion:** The PBB Citizens Advisory Board is now a valuable, active partner in the PBB Health Study. Potential board members were identified at the first PBB Community meeting, from discussions with those who expressed interest in the PBB Health Study, and from referrals by Registry members. The ten member board and the research team have met formally five times in 16 months (> 90% attendance) with regular remote interaction. The board has established its own identity via legal registration of the PBB Citizens Advisory Board, issuance of a press release and letter of introduction, and maintains a multimedia presence. Board members have served as discussion facilitators at community meetings, contributed to research design and hypotheses regarding health effects, and drafting of research results letters. The board has successfully advocated for a five-year extension from the state of Michigan to continue tracking of, and outreach to, original Registry members. **Conclusion:** Integration of qualitative and quantitative data and subsequent evaluation allows PBB researchers and the PBB Citizens Advisory Board to assess our collaboration and identify ways in which we can improve. Researchers and advisory board members alike value this collaboration and are committed to its continuation.

18. Reducing Exposure to Endocrine Disruptors from Personal Care Products in Adolescent Latinas: The HERMOSA Study

Daniel Madrigal (dsmadrigal@berkeley.edu)

Contributing Authors:

Madrigal, D., Center for Environmental Research and Children's Health, University of California, Berkeley

Parra, K., Clinica de Salud del Valle de Salinas

Elianna, F., Center for Environmental Research and Children's Health, University of California, Berkeley

Harley, K., Center for Environmental Research and Children's Health, University of California, Berkeley

Organization:

Center for Environmental Research and Children's Health, School of Publich Health, UC Berkeley

Topic area(s):

Cumulative Risk/Exposure

Track(s):

Community-Engaged Research

Abstract:

The average woman in the U.S. uses about 12 personal care and cosmetic products (PCCPs) daily. The average man uses about 6. Many of these products contain endocrine disrupting chemicals (EDCs) including triclosan, parabens, phthalates, and oxybenzone. These EDCs have been identified as chemicals of concern because of their potential links to cancer, infertility, and developmental harm for children. Although there is little known about the distribution of human exposure to EDCs in PCCPs, data from the National Health and Nutrition Examination Survey (NHANES) indicate that exposure levels can vary by gender, age, race and income. Adolescent females and Mexican Americans were found to have higher elevated concentrations in some of the previously mentioned EDCs compared to other demographic groups. To investigate these exposures and reduce levels in a population of adolescent teens, we have initiated the community engaged research project the HERMOSA study, (an acronym for Health and Environmental Research in Make-up Of Salinas Adolescents). The project has two goals: 1) Conduct an intervention study to determine if using low-chemical PCCPs can reduce exposure levels to the four endocrine disruptors mentioned above and 2) Reduce the exposure to endocrine disruptors in Latina teens through a multi-pronged advocacy strategy. The project is a joint effort between UC Berkeley, a network of community clinics in the Salinas Valley, and a team of youth researchers.

19. Translating Popular and Scientific Knowledge to Reduce Occupational Risks among Female Farmworkers

Antonio Tovar-Aguilar (tonytovar@hotmail.com)

Contributing Authors:
Economos, E., Farmworker Association of Florida
Culley, J., CATA - The Farmworkers Support Committee
Flocks, J., University of Florida
Runkle, J., Emory Unviersity
Mac, V., Emory University
McCauley, L., Emory University

Organization:
Farmworker Association of Florida

Topic area(s):
Cumulative Risk/Exposure; Disease Outcome

Track(s):
Translation, Dissemination, and Communication

Abstract:
Few studies focus on how agricultural work affects female farmworker health or pregnancy outcomes and little of this research is accessible to workers. This poster presents a web-based training for female farmworkers developed through community-based participatory research (CBPR) on farmworker knowledge and perceptions of occupational and environmental risks to health and pregnancy. Guided by a community advisory board, the project team translated research results into an accessible final product, yielding an evidence-based training combining workers' knowledge with information on pregnancy health, pesticide safety, heat stress, ergonomic risk factors, and prevention measures. Research results incorporated into the training include organophosphate and fungicide exposure levels and qualitative data on pregnancy and workplace hazards and farmworker patient-doctor relations. The training uses popular education techniques, web-based interactive visual presentation, and video vignettes featuring local community members to reach low-literacy farmworker populations. It was piloted and evaluated using (1) role-play to test content assimilation and (2) focus groups to query about the delivery process. Role-play analysis showed a good level of content assimilation; whereby women demonstrated their newly acquired knowledge and resources to devise action plans, implement injury-prevention strategies, and provide assistance to workers in need. Focus group participants reported receiving valuable information and learning new content; pesticide information was rated the most useful. Participants suggested the length of the training be modified, so trainers revised and reduced it from 3.5 hours to less than 2.5 hours. The training is available in English and Spanish and can be conducted online or onsite, according to technical capability. Because it is available in an electronic format online dissemination and distribution is easy, cost-effective and can be modified to fit other fields.

20. The Use of Segregation Indices, Townsend Index, and Air Toxics Data to Assess Cancer Risk Disparities in Metropolitan Charleston, South Carolina

Kristen Burwell (kburwell@umd.edu)

Contributing Authors:
Rice, L., University of South Carolina
Jiang, C., University of Maryland
Burwell, K., University of Maryland
Wilson, S., University of Maryland
Dalemarre, L., University of Maryland

Organization:
University of Maryland - College Park

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Epidemiology

Abstract:

Background: Differences in cancer risk may exist in Metropolitan Charleston, South Carolina due to the numerous environmental hazards, port activity, and heavily trafficked roadways that are currently impacting the health of the community. The purpose of this study was to identify air toxics that may affect low-income and non-white populations in Metropolitan Charleston and to estimate cancer risk by socioeconomic status (SES) and racial/ethnic composition. **Methods:** The US EPA's National-scale Air Toxics Assessment (NATA) data for cancer risk categories were linked with 2000 census data by the Federal Information Processing Standard (FIPS) and mapped using ArcGIS version 10. Simple linear regression was calculated between all variables (segregation indices or sociodemographic variables) and cancer risk while controlling for urban-rural effects. The percentage of high cancer risk tracts (cancer risk > 90th percentile of all tracts) were calculated in each quartile (Q1 to Q4) for all variables. Relative risk and 95% confidence intervals (CI) were estimated by comparing the first and latter three quartiles. The level of significance for differences in the percentage of high cancer risk between the first and latter quartiles was calculated for all cancer risk categories. **Results:** Cancer risk from on-road sources was the highest among all sources with the exception of background sources. The Townsend Index had the highest correlation with cancer risk among all indices. Furthermore, the strongest correlation was found between the Townsend Index and all source risk (0.69) which was the highest among all variables. Although the Townsend Index had the highest R2 value, cancer risk increased by only 1.3 ppl/million. In contrast, a one unit increase in the Isolation Index increased cancer risk by 12.6 ppl/million. The percent of households without a car explained 43% of the variance in cancer risk, which was the highest among all sociodemographic variables. **Conclusion:** Cancer risk disparities exist in Metropolitan Charleston which were mostly attributable to on-road sources. Policies that focus on equitable planning, zoning, and development may reduce segregation and deprivation and also environmental and health disparities.

21. Using Art as Advocacy in Communities Near the Tar Creek Superfund Site

Elizabeth Guzy (eguzy@hsph.harvard.edu)

Contributing Authors:
Jim, R., LEAD Agency
Wascovich, V., Texas A&M University, Commerce
Dotter, E., Photojournalist
Guzy, E., Research Translation Core, Harvard School of Public Health Superfund Research Program

Organization:
Harvard School of Public Health Superfund Research Program

Topic area(s):
Cumulative Risk/Exposure

Track(s):
Community-Engaged Research; Translation, Dissemination, and Communication

Abstract:
Communities living in and around Superfund sites experience disproportionate environmental burdens, and it can be extremely difficult for children, in particular, living in these communities to understand these inequalities and express themselves when grappling with the many effects of living near a Superfund site. In the communities surrounding one of the nation's largest Superfund site in Tar Creek, Oklahoma community leader, Rebecca Jim, and many local artists, including photojournalist Earl Dotter and photographic educator, Vaughn Wascovich, have created "art as advocacy" programs that motivate students to express their feelings about living near a Superfund site through art. Art has become a powerful way of communication for the students near Tar Creek, and they have expressed themselves using photography, poetry, written essays, digital media, painting, drawing, and video. Many of these art projects are featured at the annual Tar Creek Conference and Science Fair, which is cosponsored by the Superfund Research Program at the Harvard School of Public Health. Photographers Earl Dotter and Vaughn Wascovich have served as visiting scholars in the Harvard School of Public Health NIEHS Center for Environmental Health Outreach Program. The art as advocacy projects have not only helped students express themselves creatively over the last eighteen years, but it has given them a way to communicate important environmental health messages to their communities. We provide an overview of the environmental justice issues at Tar Creek in addition to a compilation of student artwork and success stories from the art as advocacy project.

22. Healthy Community Design in Somerville MA - Using Local Volunteers and Regional Allies to Re-Shape the Land Use / Transportation / Air Quality / Public Health Continuum

Wig Zamore (wigzamore@gmail.com)

Contributing Authors:
Zamore, W.
Reisner, E.

Organization:
Somerville Transportation Equity Partnership

Topic area(s):
Disease Outcomes; Cumulative Risk/Exposure; Research Deserts

Track(s):
Epidemiology; Community-Engaged Research; Translation, Dissemination, and Communication

Abstract:
Somerville is a diverse median income community that houses the densest population in Massachusetts- about 20,000 people per square mile. It is also overrun daily by the state's most intense traffic - 200,000 vehicle miles travelled per square mile - and diesel rail - 200 trains per day. Few of the commuters travelling through live or work here, less than 10%. Although Somerville has the second greatest density of immigrants and of college educated adults out of the 351 municipalities in the state, we also have the greatest shortage of local employment relative to resident workers - a jobs deficit of over 5,000 per square mile. The city is also strained by a lack of commercial tax base and a severe shortage of public green space - less than two acres per 1000 residents. In part led by two volunteer based community groups, the Mystic View Task Force (MVTF) and Somerville Transportation Equity Partnership (STEP), the city is evolving toward a robust clean transit and active transportation system and, hopefully, a more sustainable live work balance, while also protecting housing alternatives and small business diversity. Construction is underway here on the state's first new subway station and first two new light rail branches in a generation, a billion dollar investment, as well as the extension of a regionally significant community path. Access to clean rail-based transit will go from 15% of the population to 85% in a few short years. Local job development will be able to be based on the new transit, rather than on the highways and diesel rail which have been local environmental burdens. Five million square feet of transit oriented mixed use are underway on Somerville's previously neglected Mystic River waterfront and the new Comprehensive Plan calls for a balance of workers and jobs within 25 years. Attention to the serious local health disparities associated with large regional highway and diesel rail networks, aided by translation of environmental health literature, has been at the forefront of our advocacy and helped to re-shape Somerville. Along with these changes, in partnership with Tufts University, we have evolved from an environmental health science desert into a significant center of community based participatory research.

23. Using public School Enrollment Records for Examining Asthma in School Children in Eugene, Oregon

Eric Coker (cokerer@onid.orst.edu)

Contributing Authors:
Coker, E., Oregon State University
Arkin, L., Beyond Toxics
Guzman, A., Beyond Toxics
Kincl, L., Oregon State University
Kile, M., Oregon State University
Molitor, J., Oregon State University

Organization:
Oregon State University

Topic area(s):
Disease Outcomes

Track(s):
Epidemiology

Abstract:
Residents in Eugene, Oregon are concerned by poor respiratory health and emissions from local industrial activity. Community concerns have focused on Eugene's industrial corridor and adjacent neighborhoods in the 97402 zip code. The US EPA toxic release inventory industrial site density is highest in 97402. Over 90% of Eugene's reported air toxics releases from regulated sites are located in 97402. Households in 97402 have the highest level of residents below the poverty-line and the highest percentage of Hispanics compared to the other five zip codes that comprise Eugene (2010 U.S. Census). Community groups in 97402 partnered with Beyond Toxics, a non-profit organization that works to guarantee environmental protection and health for all communities and residents. Beyond Toxics was awarded a US EPA Environmental Justice grant to investigate these concerns, which was completed in 2012. This spurred Beyond Toxics to obtain additional data from public schools in Eugene (N=43) that indicate if a child currently has asthma (N=21,740). Beyond Toxics shared this information with public health researchers at Oregon State University's Environmental Health Sciences Center, who examined geographical distribution of asthma prevalence and its relationship with the percentage of children who qualified for a free lunch. This data showed asthma prevalence in Eugene was 8.6%, 10.9%, and 10.7% in children enrolled in elementary, middle, and high schools, respectively. A comparison by school district showed that the children in 97402 had significantly higher asthma prevalence compared to children enrolled in the other five zip codes (14.3% vs. 8.1%). This trend was observed in elementary school students (10.9% vs. 7.6%) and middle/high school students (18.5% vs. 8.5%). We also observed that children from low-income schools (defined as the upper 75th percentile of qualifying for the federal free lunch program) had significantly higher odds of asthma (odds ratio = 1.33; 95%CI: 1.19-1.49) compared to children from higher-income schools. These initial observations of asthma prevalence patterns by zip code and low-income school status warrant further investigation. Employing community-based participatory research is ideal to determine if childhood asthma is associated with air pollution by geographical area and socioeconomic factors in Eugene. Such research can inform and empower residents regarding their environmental health.

24. The ALERT Model: Advancing Community-Based Research through Environmental Health Data Capacity and Co-Learning Activities

Peggy Toy (peggytoy@ucla.edu)

Contributing Authors:
Toy, P., UCLA Center for Health Policy Research
Zane, J., UCLA Center for Health Policy Research
Parks, A., UCLA Center for Health Policy Research
Johnson, P., UCLA Center for Health Policy Research
Meng, Y., UCLA Center for Health Policy Research
Scully, J., Asthma Coalition of Los Angeles County
Vinetz, R., Asthma Coalition of Los Angeles County
Gracian I., East LA Community Corporation
Nicholas, E., The Children's Clinic, "Serving Children & Their Families"
Ponce, J., The Children's Clinic, "Serving Children & Their Families"
Luong, J., City of Long Beach Department of Health and Human Services
Ornelas Diaz, H., Los Angeles County Department of Public Health
Wallace, S., UCLA Center for Health Policy Research

Organization:
UCLA Center for Health Policy Research, Health DATA Program

Topic area(s):
Research Deserts

Track(s):
Community-Engaged Research

Abstract:
Assessment of Local Environmental Risk Training to Reduce Health Disparities (ALERT) is a training and education project designed to foster community-academic partnerships to address disproportionate exposure to air pollution among communities of color, low-income neighborhoods, and immigrant populations in Los Angeles County. The ALERT project trained community members and groups to understand and use scientific data on air quality, while also enhancing the ability of academics and researchers to work with communities through co-learning activities, including a train-the-trainer course and subsequent workshops and events. ALERT demonstrated the efficacy of a model for fostering trust and collaboration among community members and researchers. To realize actual collaboration, ALERT funded two pilot studies during the course of the project. Community members expressed high motivation to advance collaboration with researchers and to explore potential studies to expand their knowledge of environmental factors that impact their health. The train-the-trainer course increased community members confidence towards taking actions, which also revealed frustration when there was a lack of opportunities to move forward. In response to community concern, project partners sought and obtained additional funding through the CDC REACH CORE program that built upon the environmental health action plans produced in the ALERT project. The subsequent project, Turning Data into Action: Fighting Air Pollution in Two Immigrant Communities (TDA), engaged ALERT participants and expanded community stakeholders in a strategic planning process to assess policy and system changes needed to reduce disproportionate exposure to air pollution and its effect on asthma, cardiovascular disease, and birth weight. Both ALERT and TDA highlighted the value of data capacity for communities with disproportionate expose to air pollution, and they revealed an increased interest in efforts to advance community-researcher engagement.

25. Community Outreach and Education Core (COEC): Increasing Capacity of Environmental Public Health Issues and Policy Strategies

Myra Tetteh (mtetteh@umich.edu)

Contributing Authors:
Clement, J., Henry Ford Health Systems
Harbin, P., Institute for Population Health
Opperman, A., Warren Conner Development Coalition
Ramirez, E., Community Health and Social Services Center
Reyes, A., Detroit Hispanic Development Corporation
Shellman-Weir, S., Michigan Department of Community Health
Sills, R., Michigan Department of Environmental Quality
Smith, S., Community Resident
Wilkins, D., Green Door Initiative
Williams, G., Detroiters Working for Environmental Justice
Tetteh, M., University of Michigan
Coombe, C., University of Michigan
Mandell, R., University of Michigan
Schulz, A., University of Michigan
Israel, B., University of Michigan

Organization:
University of Michigan - Environmental Health Science Lifestage Exposure and Adult Disease Center

Topic area(s):
Research Deserts

Track(s):
Community-Engaged Research; Translation, Dissemination, and Communication

Abstract:
The Community Outreach and Education Core (COEC) is part of the NIEHS-funded University of Michigan (UM) Environmental Health Science (EHS) Lifestage Exposure and Adult Disease (LEAD) Center. The COEC fosters enhanced understanding among community members, policymakers and public health decision-makers concerning the role of environmental exposures in adult disease. The UM EHS LEAD Center specifically focuses on how environmental exposures over the lifecourse are linked to asthma, early life development, diabetes, and cancer through three pathways: epigenetic regulation, oxidative stress, and endocrine disruptors. Detroit and southeast Michigan, in particular, are disproportionately impacted by environmental exposures (e.g., air pollution) and have reduced access to resources that might protect against the negative effects of those exposures (e.g., access to foods rich in antioxidants), thus increasing vulnerability to negative effects of those exposures. Over the lifecourse, these increased environmental exposures and increased vulnerabilities contribute to racial, ethnic, and socioeconomic health disparities.We will describe the activities used to increase awareness among community members that build policy advocacy skills used to promote improved environmental health decisions made by policy makers at the local, state, and federal level. The activities include policy fact sheets and community policy advocacy training providing the community with the capacity needed to serve as their own advocate for improved environmental health conditions. Additionally, we will describe activities used to increase the awareness of community members and decision makers of recent scientific findings on the association between environmental exposures across the lifestage and adult disease. The activities include the development of the Oxidative Stress in Your Everyday Life video, a video on endocrine disruptors and early life development, and fact sheets.

26. Developing a Research Oasis for Farmworkers: The Community Based Research Network

Sharon Cooper (sharon.p.cooper@uth.tmc.edu)

Contributing Authors:
Ryder, E., National Center for Farmworker Health
Hendrikson, E., Salud Family Health Centers
Cooper, S., University of Texas School of Public Health
Heyer, N., Battelle
Shipp, E., Texas A&M School of Rural Public Health
Del Junco, D., University of Texas Medical School Houston
Partida, S., National Center for Farmworker Health
Valerio, M., University of Texas School of Public Health
Socias, C., University of Texas School of Public Health/NIOSH
Henry, N., University of Texas School of Public Health
Zottarelli, J., University of Texas School of Public Health

Organization:
U. of Texas School of Public Health

Topic area(s):
Research Deserts

Track(s):
Community-Engaged Research

Abstract:
U.S. farmworkers experience a disproportionate frequency of injuries and illnesses associated with their work and significant barriers to health care access. The lack of aggregated longitudinal health data on this vulnerable population has created a research desert that has severely limited opportunities to conduct research to improve their health status. Funded by the National Institute of Environmental Health Sciences over the past three years, we have built a national community-based research network anchored by a reciprocal and equitable partnership between well-established farmworker community advocates, clinics, and dedicated academic leaders that will transform the capacity to conduct such research. The consortium of six existing HRSA-funded Community/Migrant Health Centers will provide the necessary infrastructure — both a cooperative framework and an electronic linkage of medical data — to build previously unattainable research opportunities capable of addressing both preventive (including occupational exposures) and primary care services in relation to adverse health outcomes for this at-risk population. Future research will be guided by mutually-engaged partners including health care providers, community health organizations, and academic researchers. We have initiated an evaluation of the frequency and strength of our community-academic partnership that we have built over these last three years. With a goal to build trust with our research partners and participants, we are also developing a webinar to highlight and promote ethical research practices that maximize health and community benefits and reduce risk as much as possible, and to contribute to high-impact research by applying principles of community-based participatory research. The electronic linkage and resulting database will finally provide the basis for a national source of medical data to conduct research to improve health outcomes, reduce health disparities, and increase access to health care for underserved populations, including immigrant, Latino, and young workers in the agricultural sector. Expansion of this research network to other Community/Migrant Health Centers could evolve into a pioneering demonstration of a national health information exchange.

27. Developing Novel, Collaborative Models for Tribal Environmental Health Research

Doug Stevens (doug_stevens@skc.edu)

Contributing Authors:
Stevens, D.
Saddler, T.
Smiley, W.

Organization:
Salish Kootenai College

Topic area(s):
Research Deserts

Track(s):
Community-Engaged Research

Abstract:
Tribes generally lack the resources and expertise to address pressing environmental health research on Native lands. We are developing a working model where a lead tribal college, acting as a "Center," would coordinate the research interests of a larger tribal consortium, or "Network." Native undergraduate and graduate students at partnering tribal colleges and native-serving mainstream institutions represent a human resource that could be used to address these issues in a culturally competent way. Through the Network, individual projects that would be difficult to fund as stand alone proposals, make up a much larger portfolio that could be more attractive to funding institutions, while at the same time, providing the students with valuable research experiences and ownership of their science. This model was successfully tested by the Department of Life Sciences (LS), Salish Kootenai College (SKC) - a tribal college on the Flathead Indian Reservation in western Montana acting as the "Center," and the Aroostook Band of Micmac in northern Maine. From a distance of nearly 3,000 miles, a pilot community-based participatory research (CBPR) project was developed and executed during the summer of 2012. SKC LS faculty and students traveled to Maine and worked with the Micmac community to establish a Micmac Research Steering Committee (MRSC), developed a CBPR project to examine fish consumption patterns among Micmac women of childbearing age and to assess the potential of individuals for risk from mercury exposure from this traditional food. Local Micmac community members were trained by SKC LS students to administer the consumption surveys and take hair samples from Micmac volunteers. Hair samples and completed surveys were collected at the end of the summer during a return visit. SKC LS students performed the hair mercury survey analyses back in Montana. The data was then shared with the MRSC and disseminated to the community.

28. Environmental Health Disparities Intervention Research at UNM

Melissa Gonzales (mgonzales@salud.unm.edu)

Contributing Authors:
Gonzales, M., Univeristy of New Mexico
Torres, S., University of New Mexico
Saul, G., University of New Mexico
Scott, A., University of New Mexico
Page-Reeves, J., University of New Mexico
Moffett, M., University of New Mexico
Lewis, J., University of New Mexico

Organization:
University of New Mexico

Topic area(s):
Research Deserts

Track(s):
Community-Engaged Research

Abstract:
The Environmental Health Core (EHC) of the New Mexico CARES Health Disparities Center, represents a shift in focus from studying environmental health (EH) problems to creating effective, sustainable solutions to reducing EH disparities in New Mexico. Applying NIEHS Partnerships for Environmental Public Health (PEPH) Program evaluation metrics, we examine the activities, products, and impacts of the EHC towards attaining our goals.We apply the PEPH evaluation metrics to critique our progress in establishing EH intervention research that is based on sound research practices, informed by community needs, and focused on identifying and informing EH knowledge gaps in policy and clinical care. The three aims of the EHC are systematically assessed based on the evaluation criteria. EHC investigators have built upon established partnerships with communities, researchers, policy makers, and health care providers state-wide. A central tenet of our evaluation focuses on how the EHC activities meet the needs of these community partners.

29. Environmental Justice: How Certain? Constructing Proper Confidence Intervals from Aggregated Geospatial Data Using Stochastic Simulation

Nathaniel MacHardy (machardy@unc.edu)

Contributing Authors:
MacHardy, N.

Organization:
University of North Carolina at Chapel Hill, Department of Epidemiology

Topic area(s):
Research Deserts

Track(s):
Epidemiology

Abstract:
Despite widespread citizen and academic interest in environmental justice (EJ), EJ researchers continue to use statistical tools developed for causal inference from experimental data, such as data from Randomized Controlled Trials (RCTs). Several authors have identified problems with applying these methods to EJ studies, most notably the problems of interference and spatial dependence of analytic units. Here, I illustrate a third problem: that traditional measures of precision used for RCTs are premised on describing sampling error and ignoring measurement error. EJ studies are typically built on data with negligible sampling error and bounded measurement error induced through spatial aggregation, suggesting a systematic underestimate of precision in the existing EJ literature. Here, I propose a simple alternative method of quantifying the uncertainty induced through spatial aggregation through an extensible stochastic simulation. The example of airborne toxic release in Louisiana is used to demonstrate the technique, which is widely applicable to EJ studies using U.S. Census data and can simultaneously accommodate variables aggregated at different spatial scales.

30. The Impact of Worker Education and Training on Communities: A Qualitative and Quantitative View

Ebony Turner (turner1596@aol.com)

Contributing Authors:
Turner, E.

Organization:
Dillard University Deep South Center for Environmental Justice

Topic area(s):
Research Deserts

Track(s):
Community-Engaged Research

Abstract:
The Minority Worker Training Program (MWTP) was established in September 1995 by the National Institute for Environmental Health Sciences to provide a series of national pilot programs to test a range of strategies for the recruitment and training of young persons. These are individuals who live near hazardous waste sites or in the community at risk of exposure to contaminated properties with the specific focus to obtain work in the environmental field. These environmental career-oriented projects are developed within the context of other social and health needs of the community. The main goal of this program is to increase the number of underrepresented minorities in the construction and environmental remediation industries. This poster presentation will deliver information about the NIEHS Worker Education Training Program and will focus on the Deep South Center for Environmental Justice's MWT Program. The presentation will highlight the program administration's holistic approach to workforce development training, addressing the academic, social, psychological and physical needs of the trainees. The presentation will include information on the training program's structure which includes outreach and recruitment, basic and job readiness skills development, environmental justice, career training, job placement and tracking.

31. Restoring The Research Desert In American Indian Communities

Marti Lindsey (lindsey@pharmacy.arizona.edu)

Contributing Authors:
Wilson, E., Inter Tribal Council of Arizona

Organization:
Southwest Environmental Health Sciences Center

Topic area(s):
Research Deserts

Track(s):
Community-Engaged Research

Abstract:
We know a research desert exists in American Indian communities because of a plethora of comments such as, “They study us and our problems, but the research does not benefit us or the community; it only benefits the researcher, and once the study has ended, we never want to see the researcher (or any other researcher) again.” This poster identifies the problems in Arizona that have impacted research in American Indian communities. It addresses restoring the research desert by presenting principles for best practices for researchers and outreach personnel to adopt and follow when approaching American Indian individuals, entities, and communities to investigate and promote information about environmental health. Suggestions to researchers emanate from the understanding that tribes are sovereign nations and from the principles of tribal control of the process and data generated by research. How the Southwest Environmental Health Sciences Center (SWEHSC) has developed relationships and trust with tribal communities in Arizona over the past ten years is discussed. Building trust with the Gila River Indian Community was essential for development of interactions and collaborations with other tribes and the Inter Tribal Council of Arizona (ITCA). Lindsey, the SWEHSC community outreach and engagement core director, became a member of the coordinating group of the Gila River Indian Community Community Action for a Renewed Environment (CARE) project. This group includes (i) community members, (ii) employees from the Gila River Indian Community Departments of Environmental Quality (DEQ) and Public Health, and (iii) members from ITCA. This lead to the development of messages and materials for the Gila River Indian Community and to Environmental Health Leadership Trainings. SWEHSC members spoke about; “Environmental Causes of Cancer” (Lantz), “Air Pollution and Human Health” (Riley), “Environment and Genetics Interactions” (Klimecki), and “Asthma, the Environment, and the National Children’s Study” (Martinez). Lindsey has partnered with ITCA to present environmental health information to environmental managers and staff every six months since 2008, presenting virtually in April 2013. The Environmental Director’s thank you note included: “Although you were not able to be present, we appreciate you sending us the video, which served as the next best thing to having you there doing the presentation. We look forward to seeing you at the next meeting and future collaborations.”

32. Building Partnerships with Communities to Address the Unique Contributions of Environment to Health Disparities

Liam O'Fallon (ofallon@niehs.nih.gov)

Contributing Authors:
Gray, K.A.
O'Fallon, L.R.
Thompson, C.
Finn, S.

Organization:
Division of Extramural Research and Training
National Institute of Environmental Health Sciences, NIH, DHHS

Topic area(s):
Other

Track(s):
Community Engaged Research

Abstract:
The National Institute of Environmental Health Sciences (NIEHS) has a history of commitment to Environmental Health Disparities (EHD) research. These programs address inequitable exposures among vulnerable populations through communication, capacity building, and research. They highlight local community needs for health care or policy change that would address exposure related health outcomes and provide evidence that action taken by communities leads to positive results.
This poster addresses the importance of engaging communities in EHD research projects and highlights three examples of community-engaged research that align with the NIH HD Strategic Plan. It also makes the case that environmental stressors need to be incorporated as a recognized component in the national health disparities research agenda.

33. NIEHS Investment in Social and Behavioral Research: Exploring the Totality of Exposures to Understand the Multiple Causes of Diseases

Symma Finn (finns@niehs.nih.gov)

Contributing Authors:
Finn, S.

Organization:
Division of Extramural Research and Training, NIEHS

Topic area(s):
Other

Track(s):
Community Engaged Research; Translation, Dissemination, and Communication

Abstract:
Since 2008, NIEHS has provided over $75M in support for social and behavioral studies. Over 100 of the projects funded by NIEHS since 2008 have focused on the exploration of the social determinants of health in the context of environmental exposures. Research topics of current interest and that are included in the 2012 NIEHS strategic plan include community engagement research, capacity building, community and individual resilience and Environmental health disparities (EHD) and Environmental Justice (EJ). In addition, since 2008, NIEHS has supported over 20 projects that explored behavioral aspects in the context of EHS. Several of NIEHS' landmark environmental health science (EHS) programs focus on or include BSSR components including autism research, Breast Cancer and the Environment Research Program, Centers for Children's Environmental Health and Disease Prevention Research, Deepwater Horizon Research Consortium, and the Partnerships in Environmental Public Health network of projects and programs.

Lessons learned from the NIEHS investment in social and behavioral research include the recognition of the complexity of risk communication given uncertainties about the etiology of disease from specific exposures or the effects of multiple exposures over the lifespan; the value of community engagement in research to ensure culturally appropriate translation and implementation of findings, e.g. community-based prevention or mitigation activities, or the initiation of policy or regulatory change; and the link between heavy metal and other environmental factors on neurodevelopment and neurobehavior.

34. Partnerships for Environmental Health Resource Center: Connect & Share

Justin Crane (cranej2@niehs.nih.gov)

Contributing Authors:
Crane, J.
O'Fallon, L.

Organization:
NIEHS, Partnerships for Environmental Public Health

Topic area(s):
Other

Track(s):
Community Engaged Research; Translation, Dissemination and Communication

Abstract:
Through the Partnerships for Environmental Public Health (PEPH) program, the NIEHS has supported the PEPH Resource Center (https://connect.niehs.nih.gov/peph/index.cfm) to foster sharing and exchange of materials created by NEIHS grantees and community partners that are part of the PEPH network. A goal of the Resource Center has been to reduce the duplication of efforts, promote interactions, and stimulate the advancement of new communication strategies. As a tool for grantees and their partners, the PEPH Resource Center facilitates entry, management, viewing, and publishing of educational and outreach materials.

This poster highlights the "Connect" and "Share" aspects of the Resource Center and emphasizes user benefits. Over the past year, we have made exciting changes to the Resource Center based on user feedback. These enhancements include:

- Grantee user profiles
- "Trending Topics/Materials" on the Resource Center homepage
- Comment functions that allow users to give and receive peer-feedback on published materials
- A Resource Center user's listserv

These social media-like enhancements should increase the ability of PEPH grantees and community partners to share, connect, and collaborate, so that the PEPH network can increase the impact of environmental public health research.

35. PEPH Evaluation Tools

Kristi Pettibone (pettibonekg@niehs.nih.gov)

Contributing Authors:
Pettibone, K., NIEHS
Drew, C., NIEHS

Organization:
NIEHS/DERT/PAB

Topic area(s):
Other

Track(s):
Translation, Dissemination, and Communication

Abstract:
This poster will highlight evaluation tools available to PEPH grantees, including the PEPH Evaluation Metrics Manual and an associated web-based training. The poster will detail the components of the metrics manual, including the logic models, Metrics in Action examples, case studies, and metrics examples. The poster will also provide information on a web-based training that is available to complement the metrics manual.

Workshop Abstracts

Morning Workshops 66
Best Practices for Community-Engaged Research: Including Louisiana Coastal Communities in the Research Agenda 66
Community-Academic Engagement through Community Monitoring by Neighborhood Assessment Teams ("A" Teams) and Production of CBPR Manual 67
Cumulative Impacts and Children's Environmental Health 68
Enhancing Engagement in Community Research with Theatre of the Oppressed 69
From Theory to Practice: Successful Communication Approaches That Build Trust 70
Macroepigenetics Research and Intervention Design in Action 71
Using Research Data to Educate, Advocate, and Organize: Community-Academic Collaboration as a Way to Enhance EJ Campaigns 72

Afternoon Workshops 74
Community Outreach and Collaboration with Philadelphia Inner City Neighborhoods Impacted by Former Lead Smelters 74
Creating, Collecting, and Telling Our Stories: Tools for Multi-Stakeholder Engagement 75
Environmental Health Research and Environmental Injustice: Do No Harm 76
Evaluating PEPH Activities 77
Methods to Collect and Organize Information for Community-Based Cumulative Risk Assessments 78
Community Training to Inform Policy Makers about Environmental Exposures and Health . 79

Morning Workshops

Best Practices for Community-Engaged Research: Including Louisiana Coastal Communities in the Research Agenda

Presenters: Tarase Carter, *Tulane University*
Farah A. Arosemena, *Tulane University*
Jauna Crear, *Crear Law Firm*

Room: D450

Topic: Community-Engaged Research

Abstract:
The training workshop will target how the Crescent Region Covering Kids & Families Coalition transitioned into a community-academic initiative and became the Crescent Region Collaborative Coalition. The integration of the coalition and the collaborative problem-solving framework into the Tulane University Center for Environmental Health, Leadership, and Strategic Initiatives was an evolutionary step based upon the need for Global Environmental Health Sciences faculty to garner skills and knowledge relating to community engagement, community engaged research, and community-based participatory research. As these skills are increasingly in demand at academic institutions, it was a natural transition to embed these essential components across funded projects. In 2012, representatives from five urban and rural Southeast Louisiana parish community-based groups participated in a coalition leadership team planning meeting designed to identify elements of an effective community-academic partnership to address health disparities more holistically, rather than from a silo-driven approach. Realizing that stakeholder investment is maximized when community leaders and the academic investigative team commit to the benefits to be derived and contributions to be made by the partnership, the Crescent Region Collaborative was formed. Key elements of partnership building, social advocacy, and navigation to services by way of the Coalition have been closely explored to uncover programmatic facilitators and potential barriers that can significantly impact program sustainability and future planning.

Community-Academic Engagement through Community Monitoring by Neighborhood Assessment Teams ("A" Teams) and Production of CBPR Manual

Presenters: Andrea Hricko, *University of Southern California*
Carla Truax, *University of Southern California*
Jessica Tovar, *Long Beach Alliance for Children with Asthma*
Miranda Chien-Hale, *Occidental College*

Room: Rodbell C

Topic: Community-Engaged Research

Abstract:
In collaboration with community partners in THE Impact Project, USC has developed several neighborhood assessment teams, or A-Teams. These teams are made of community/EJ group staff and volunteers (paid with stipends) who count traffic and measure ultrafine particles. Team members attend several training sessions by USC and UCLA scientists who are members of the NIEHS-funded Southern California Environmental Health Sciences Center (Center). This "street science," coupled with new USC and UCLA epidemiologic studies linking traffic exposures to higher levels of asthma and reduced lung function, as well as low birth weight and premature babies, helped build the science base for this work. The A-Team members have presented their findings to community members and policymakers. But perhaps more importantly, the team members have become empowered by their A-Team efforts because they report a deeper understanding of the science and are more comfortable sharing their results through public speaking. The EJ and community groups also have offered extensive training on environmental health and community organizing issues to the team members. Most of the members are Latinas, speak Spanish as their first language, are mothers of children with asthma, and some have only a high school education. They have become effective community leaders advocating for clean air policies through these community-academic collaborative efforts. The COEC and the community organizations have produced an instruction manual on community-based research, featuring case studies of their experiences. It is in English and Spanish and intended to serve as a resource for other organizations.

Participants in this workshop will experience an A-Team training. They will handle the P-Trak portable air monitors (taking measurements outside), review field protocols and use them to count traffic (as displayed on a video monitor), record real-time P-trak measurements, see a demonstration of P-Trak graphing techniques, and review the instruction manual regarding CBPR techniques for investigating traffic pollution.

Cumulative Impacts and Children's Environmental Health

Presenter: Amy D. Kyle, *University of California, Berkeley*

Room: Rodbell A

Topics: Translation, Communication, Dissemination
Cumulative Risk Exposure

Abstract:
The objective of this workshop is to examine cumulative impacts with children's environmental health.

Many children face disparities considered under the rubric of cumulative impacts: environmental exposures, interaction of environmental exposures with psychosocial factors, and effects at the individual and community level. In addition, children are often more susceptible to effects of such exposures, and early life exposures contribute to disease throughout the life course. Consequently, the most impacted populations may be children in environmental justice communities or other such contexts.

The workshop has four parts:

1. Technical update on the evolution and current status of methods for assessing and addressing cumulative impacts/risks (20 min. presentation; 10 min. questions and comments)
2. Technical update and discussion of current findings about the susceptibility of children to cumulative impacts (20 min. presentation; 10m questions and comments)
3. Discussion of needs to better assess and address cumulative impacts and children's environmental health (20 min.)
4. Identification of key next steps (10 min.)

This is based in part on a symposium that took place in January 2013 in Sacramento involving the western Children's Environmental Health Research Centers and Pediatric Environmental Health Specialty Units.

Critical points are to incorporate additional needs of children and significance of early life exposure in approaches used to examine cumulative impacts and health disparities. This workshop would pose a great opportunity to get feedback and coalescence of thinking about best approaches.

A long term goal would be to bring together researchers and activists from the children's environmental health and the environmental justice/health disparities/cumulative impacts (and risks) communities for further collaboration and investigation in the future.

Enhancing Engagement in Community Research with Theatre of the Oppressed

Presenters: John Sullivan, *University of Texas Medical Branch, Galveston*
Bryan Parras, *T.E.J.A.S. – Texas Environmental Justice Advocacy Services*

Room: E226

Topics: Community-Engaged Research
Translation, Communication, Dissemination
Cumulative Risk Exposure

Abstract:
Workshop will offer overview of basic concepts/techniques used in applying Theatre of the Oppressed (TO) to Community Engaged Research, particularly with reference to translation, communication, and dissemination of research findings/environmental health guidelines, and implementation of major values and principles of CBPR within the community research social dynamic. Applied use of TO techniques will focus on creation of community ethnographies keyed to overarching concepts of environmental justice, social determinants of health/health disparities, and special vulnerabilities within populations. Ethnography building culminates in a "thick description" of cumulative risk from the community perspective in terms of how multiple stressors bear on the life-ways of an environmental justice community. We will also unpack the social dynamic among researchers, community advocates, and residents using Image Theatre (a special application of TO).

From Theory to Practice: Successful Communication Approaches That Build Trust

Presenters: Nancy Palate, *California Department of Public Health*

Room: Keystone Building, Room 3118

Topic: Translation, Communication, Dissemination

Abstract:
The purpose for this workshop is to provide participants with ideas for the practical application of standards such as the national standards for Culturally and Linguistically Appropriate Services (CLAS) in health care while conducting community outreach and education. These standards were published in 2001 by the Department of Health and Human Services Office of Minority Health as a way to address the needs of racial, ethnic, and linguistic population groups that experience unequal access to health care services. The California Department of Public Health has implemented the principles of the CLAS standards in a number of projects that involve Environmental Justice communities.

During the workshop, one or more examples of the California Department of Public Health's approaches will be presented and discussed. At the end of the workshop participants will be able to identify ways in which a message can be communicated, translated, and disseminated to make sure that the targeted communities are reached.

The workshop will consist of a 15 minute round of introductions and icebreaker, a 15 minute presentation, 30 minutes of an interactive small-group activity, and 30 minutes of a round table discussion/Q&A session where participants will be sharing information and their best-practices or examples in which their programs, agencies, and/or organizations have contributed to eliminate the racial and ethnic health or environmental disparities.

Macroepigenetics Research and Intervention Design in Action

Presenters: Renee Dufault, *Food Ingredient and Health Research Institute*
Zara Berg, *Fort Peck Community College*

Room: Keystone Building, Room 3003

Topics: Community-Engaged Research
Translation, Communication, Dissemination

Abstract
The objective of the workshop is to teach participants how to use a macroepigenetics research method to design community-based studies and interventions to promote dietary changes and reductions in disease prevalence. Participants will be introduced to the concept of epigenetics through a 17 minute NOVA video clip. They will learn to access and utilize two important government databases to identify specific factors contributing to disease development via a small group exercise. They will see an example of the development of a successful macroepigenetic model to explain autism prevalence (Dufault et al., 2012). A handout will be provided that gives an example of a successful study and educational intervention to reduce pre-diabetes in a small Indian community using a macroepigenetic approach. Through discussion in their small groups, participants will plan a study and educational intervention to determine the role of at least one diet related factor in the development of one of the following disease conditions: autism, cardiovascular disease, ADHD, and type-2 diabetes.

Using Research Data to Educate, Advocate, and Organize: Community-Academic Collaboration as a Way to Enhance EJ Campaigns

Presenters: Beverly-Xaviera Watkins, *Weill Cornell Medical College*
Damaris Reyes, *Good Old Lower East Side - GOLES*
David Shuffler, *Youth Ministries for Peace and Justice*

Room: Rodbell B

Topics: Community-Engaged Research
Research Deserts

Abstract:
Failures in community-academic collaboration are largely related to four areas:

- *Inequitable distribution of financial and intellectual resources* — increased and uncompensated time demand on the community partner
- *Inequitable decision-making processes* — a lack of transparency in the process of planning, implementing, and disseminating of results that renders the community partners role in the research as advisory
- *Inequitable distribution of risks and rewards* — inadequate disclosure of project specific community risks in research, such as stigmatization, and of potential community impact of remediation efforts (for example, the mandatory evacuation of housing after exposures are identified) and/or exclusion from the rewards of research such as data ownership, publication input, and authorship
- *Inequitable burdens* — failure of either the academic or community partner to fulfill its obligation to the partnership in particular bidirectional capacity building

The objective of this interactive workshop is to examine a set of best practices that community-based organizations can use as a blueprint for engaging in environmental health research. Participants will learn strategies to ensure that: 1. The community drives the research conceptualization process from inception, in collaboration with the academic partner; 2. The community sets the research agenda based upon its needs, concerns, and priorities 3. The academic partner provides adequate scientific expertise, assistance, and support; 4. The research data collected can be used to educate, advocate, and organize the community. The workshop will be led by two local NYC community leaders currently engaged in building EJ campaigns using environmental health research data from the NIEHS-funded GOLES EJ Collaborative and NIMHD/EPA-funded Environmental Health Disparities Research Core at Weill Cornell Medical College.

Skills Building:

Step 1: Deciding Whether to Partner with Researchers
<u>Assess the benefits and risks of collaborating</u>

- Evaluate the research partnership using the CACSH partnership self-assessment tool

Using Research Data to Educate, Advocate, and Organize (cont'd)

- Collaboratively develop the research agenda in a theory of change logic model workshop
- Create a detailed work plan that outlines all of your project responsibilities and the data and support you will receive from the research
- Ensure that you will have adequate financial and intellectual resources to complete the work

Step 2: Defining the Community's EJ Issues

Identify local environmental and health concerns

- Create an Environmental Health Community Profile that can be used to educate community members including elected officials
- Conduct interviews with community members and community and government leaders
- Rank environmental issues based on community concerns and priorities
- Gauge community mistrust and distrust of research

Step 3: Creating an EJ Campaign Work Plan

Determine what changes in policies, systems, and power dynamics could address these issues

- Develop strategies to address identified community mistrust and distrust of research
- Select target environmental issues for the campaign
- Define the set of conditions that cause these issues
- Discuss potential opposition and barriers to change
- Set campaign goals, strategies, and tactics
- Use research data to bolster campaign

Step 4: Building a Base through Community Outreach

Invest residents in the environmental justice campaign

- Conduct One on Ones to facilitate ownership of the issues
- Door knock and phone bank to build support and gauge resistance
- Hold community meetings to provide information and answer questions
- Foster the growth of residents as campaign leaders
- Engage local government leaders to support campaign and advocate for policy change

Step 5: Developing an Environmental Justice Campaign Toolbox

Capitalize on campaign success and failure

- Use the research data to educate community members and community and government leaders
- Conduct interviews to get community feedback on the campaign and the collaboration
- Identify campaign plan strengths and weaknesses
- Discuss and monitor resultant changes in policy, systems, and power dynamics
- Develop a tracking system to identify emerging community environmental health concerns and threats
- Evaluate the research partnership using the CACSH partnership self-assessment tool

Afternoon Workshops

Community Outreach and Collaboration with Philadelphia Inner City Neighborhoods Impacted by Former Lead Smelters

Presenters: Barbara Allerton, *Pennsylvania Department of Health*
Ana Pomales, *ATSDR- Agency for Toxic Substances and Disease Registry*
Drew Serres, *New Kensington Community Development Corporation*

Room: D450

Topics: Translation, Communication, Dissemination
Disease Outcomes

Abstract:
Former lead smelters pose a potential serious health risk for many children living near these former industrial sites, including the J.T. Lewis former lead smelter in inner city Philadelphia. This workshop will describe various collaborative and complimentary approaches the Pennsylvania Department of Health and the Agency for Toxic Substances and Disease Registry conducted in collaboration with the New Kensington Community Development Corporation and other agencies to address this important public health problem. This workshop will demonstrate the community mapping and planning techniques used in conjunction with a soil kitchen where backyard soil samples are tested for lead and other metals. We will help prepare people to run a soil kitchen-type workshop in their own communities, and participants will break out into groups to analyze relevant case studies and develop responses. Also, we will brainstorm how to utilize community mapping to improve outreach to health professionals and community members who live and work in the footprint of the former smelter. For the last part of the workshop, participants will create an action plan for their own event/program based on their community dynamics. This will allow us to see where people still have questions or issues. After completing these two activities, the groups will come back together and share what the main best practices they found to be useful (along with sharing our own).

Creating, Collecting, and Telling Our Stories: Tools for Multi-Stakeholder Engagement

Presenter: Ogonnaya Dotson-Newman, *WE ACT for Environmental Justice, Inc.*

Room: Rodbell A

Topics: Community-Engaged Research
Translation, Communication, Dissemination
Cumulative Risk Exposure
Research Deserts

Abstract:
You don't have to be a scientist or a researcher to find and use statistical info about your community. Harlem's WE ACT for Environmental Justice created an "Environmental Health Report Card" for advocacy and organizing. The Report Card combines health surveys, data from city, state and national agencies, and common sense. In this session, we'll examine how WE ACT developed and uses the Report Card. We will also explore what resources are out there to help you get started and what skills you might need to use these types of tools through a case study exercise.

Environmental Health Research and Environmental Injustice: Do No Harm

Presenters: Madeleine Kangsen Scammell, *Boston University School of Public Health*
Naeema Muhammad, *North Carolina Environmental Justice Network*
Steve Wing, *University of North Carolina, Chapel Hill*

Room: Rodbell B

Topics: Epidemiology
Community-Engaged Research
Translation, Communication, Dissemination

Abstract:
This workshop will demonstrate a tool and a process for working with communities (i.e., potential community partners on CBPR) so that they are informed as to the risks of conducting research that may not answer their questions, may be a substantial drain on economic and human resources, and may produce data that could be used against them. This workshop will involve story telling and role playing, and will engage conference participants in the continuous development and evaluation of the tool.

We will use modules from a recently-released health studies guide, "Is a health study the answer for your community? A guide for making informed decisions" (www.busrp.org/hsg). The health studies guide is meant to assist community groups and individuals who think that some form of environmental health investigation or health study may be useful or necessary in their community. However, health studies may not help resolve a community's environmental problems, and they can delay action or distract from essential community organizing. Not all community problems are best addressed with research questions. And some useful investigations are not formal epidemiologic studies. The health studies guide was created with contributions from numerous individuals and environmental health organizations, with funding from NIEHS.

Evaluating PEPH Activities

Presenters: Christie Drew, *National Institute of Environmental Health Sciences*
Kristi Pettibone, *National Institute of Environmental Health Sciences*

Room: D250

Topic: Translation, Communication, Dissemination

Abstract:
Identifying, evaluating, and reporting on activities, outputs, and impacts can be crucial in making the case for program success. However, measuring these kinds of activities and impacts presents several challenges. Grantees may struggle with knowing when to evaluate or with obtaining appropriate data. Other challenges may include storing, maintaining, and formatting data for analysis. Grantees may also be concerned with issues related to the attribution or contribution of their projects to an impact.

The purpose of this workshop is to provide grantees with an opportunity to obtain input and guidance on evaluating their work. Christie Drew, the Program Analysis Branch (PAB) Chief, and Kristi Pettibone, an evaluator in PAB will conduct training on evaluating PEPH work, using the PEPH Metrics Manual as a framework. We invite grantees to bring a specific project they are working on to this hands-on training. Examples might include challenging activities such as evaluating work related to advocacy, engagement, and policy. We will provide opportunities to discuss the projects in small groups, and staff from the program analysis branch will facilitate discussions at the small groups and will provide tailored technical assistance. Towards the end of the training, groups will report out on the strategies, metrics, and approaches identified.

Grantees who select to participate in this workshop are encouraged to contact Kristi Pettibone at pettibonekg@niehs.nih.gov prior to the meeting to describe your project and your questions or challenges so that we can identify resources that may be helpful to you.

Methods to Collect and Organize Information for Community-Based Cumulative Risk Assessments

Presenter: Tim Barzyk, *U.S. Environmental Protection Agency*

Room: Rodbell B

Topic: Cumulative Risk Exposure

Abstract:
The objective of the workshop is to work through a novel method to organize information, rank chemical and non-chemical stressors, and develop a to-do list to mitigate risks related to community-based cumulative assessments. The skill-building activity will be to have the group work through a "mock" cumulative risk assessment — building a partnership, considering a variety of chemical and socio-economic stressors, determining which stressors are most likely to occur and have the highest consequences, and determining feasible risk reduction actions. This method was developed with the assistance of community-based stakeholders and draws from current science of cumulative assessments. Ultimately, the EPA plans to develop this method into an online tool for widescale use, and would like to have as much collaborative feedback as possible during its final stages of development.

Community Training to Inform Policy Makers about Environmental Exposures and Health

Presenters: Amy J. Schulz, *University of Michigan*
Donele Wilkins, *Green Door Initiative*
Myra Tettah, *University of Michigan*

Room: D350

Topics: Translation, Communication, Dissemination
Cumulative Risk Exposure

Abstract:
Translation of research findings related to the impact of environmental exposures on health involves communication of those findings to policy and other decision makers (e.g., public health decision makers). Promoting new, and enforcing existing, policies that protect public health and promote environmental justice requires sustained attention, including education and effective advocacy. In this workshop, we will describe the design and implementation of policy advocacy trainings intended to build skills, leadership, and community capacity more broadly to advocate for policy changes that address environmental exposures. There will be a particular focus on building capacity among residents who experience disproportionate exposure to toxic environments. Specifically, we will describe the adaptation of policy advocacy training workshops initially developed by the Detroit Community-Academic Urban Research Center that are being offered to community groups and organizations actively addressing issues of environmental justice in Detroit through the Community Outreach and Education Core of the University of Michigan Lifetime Exposure and Adult Disease Core Center. We will describe the design and implementation of the workshops, the process of tailoring them to local groups' priority environmental issues, preliminary evaluation results, and lessons learned to date. The structure of the workshop will include presentation, demonstration, interactive discussion, and skill building through experiential learning activities. Finally, we will situate this work in the broader context of efforts to reduce lifetime exposures and promote health, with a particular focus on achieving environmental justice and health equity.

Speaker Bios

Barbara Allerton*, Pennsylvania Department of Health*
Workshop Presenter: "Community Outreach and Collaboration with Philadelphia Inner City Neighborhoods Impacted by Former Lead Smelters"

Barbara Allerton, M.P.H., has been with the Pennsylvania Department of Health since 1989, working in the Bureau of Community Health Systems for seven years, and then moving to the Health Assessment Program. Her responsibilities at the Pennsylvania Department of Health are to provide health education to community members about the health effects of hazardous substances, on how to reduce their exposure to hazardous substances, and to provide health professional education to health care providers serving communities impacted by hazardous waste sites. She has written site-specific fact sheets and conducted health care provider education for many Superfund and other hazardous waste site communities. Also, she has partnered with citizen and stakeholder workgroups on numerous sites.

Beth Anderson*, National Institute of Environmental Health Sciences*
Session Moderator: "Community Experience of Contaminated Communities: Contributions from the Social Sciences"

Serving as a program analyst for the Superfund Research Program, Beth Anderson, M.A., seeks varied avenues for the application of the research that the program supports. By-lines for the program such as 'research-to-relevance,' 'connect-the-dots,' or recently 'problem-based, solution-oriented research' reflect her goal of ensuring that SRP research outcomes have application to real world issues. In support of this goal, two areas that she currently pursues are partnering with other federal agencies and actively encouraging and advocating for the research translation of the science by our grantees.

Anderson is also committed to advancing the SRP community engagement component of the program. Over the last few years, she has been involved in the enhancement of SRP Community Engagement Cores and now promotes the visibility of these efforts to a user community that is positioned to gain from SRP research advances. Currently, she is involved in the coordination of the SRP community engagement cores and integrates these core activities with the NIEHS Partnerships for Environmental Public Health (PEPH) program. Anderson received a Master of Art in liberal studies from Duke University.

Emily Anderson*, Loyola University Chicago*

Presenter: "Institutional Review Boards and Community Engaged Research: How can Universities and Community Organizations Work Together to Strengthen the Ethics Review of Community Based Research?"

Emily E. Anderson, Ph.D., is an assistant professor in the Neiswanger Institute for Bioethics. Her areas of interest and expertise include ethical issues in community engaged research; research with vulnerable populations; research ethics and institutional review board (IRB) policy; ethical issues related to emerging biotechnologies; ethical issues in public health and health disparities; and the application of qualitative research techniques to the study of research ethics. She also over seven years of experience serving on an IRB and is a member of the faculty of Public Responsibility in Medicine and Research (PRIM&R). Anderson is also a co-investigator on several federally-funded research and educational projects and developer of CIRTification: Community Involvement in Research Training (http://go.uic.edu/CIRTification), a training program in human research protections that is tailored to the unique roles of community research partners.

Thomas Arcury*, Wake Forest School of Medicine*

Presenter: "Challenges and Opportunities for Supporting Community Based Research to Address Environmental Health Disparities and Environmental Justice"

Thomas A. Arcury, Ph.D., is professor and vice chair for research in the Department of Family and Community Medicine, director of the Center for Worker Health, and director of the Program in Community Engagement of the Translational Science Institute, Wake Forest School of Medicine. He is a cultural anthropologist and public health scientist with a research program focused on improving health in rural and minority communities. Since 1996, he has collaborated in a program of community-based participatory research with immigrant farmworkers, poultry processing workers, and construction workers focused on occupational and environmental health and justice. He has authored numerous refereed articles, and he is the co-editor (with Sara A. Quandt) of a volume on the health, safety, and justice of farmworkers in the eastern United States. He is dedicated to making study results available to community members in a format that they can use to attain health sovereignty; to this end, he has participated in the development of diverse educational materials that summarize research results for immigrant communities. He has worked to affect policy change through collaborating with advocates in the implementation of projects that address policy issues and through the development of policy briefs that summarize research results.

Farah A. Arosemena*, Tulane University*

Workshop Presenter: "Best Practices for Community-Engaged Research: Including Louisiana Coastal Communities in the Research Agenda"

Farah Arosemena, Ph.D., has devoted her career in public health to improving the wellbeing of high-risk populations, such as the underserved, ethnic minorities, and for the past five years, disaster prone communities. Arosemena specifically focuses her interests on the psychosocial aspects of disease, exploring cumulative stressors and the role of race and ethnicity on health outcomes. She brings a diverse educational

and professional background to Tulane, having worked both domestically and internationally with vulnerable communities, implementing interventions to augment local health care systems with holistic, homegrown, community informed, and culturally tailored programs. As the associate director of the *Center for Environmental Health Research, Leadership, and Strategic Initiatives*, Arosemena is an integral part of the investigative team to develop, connect and leverage active research and broaden capacity building initiatives in environmental health for coastal communities.

Katie Barnes*, University of North Carolina, Chapel Hill*
Presenter: "Institutional Review Boards and Community Engaged Research: How can Universities and Community Organizations Work Together to Strengthen the Ethics Review of Community Based Research?"

Katie Barnes is the project manager for Seeds of HOPE (Health, Opportunities, Partnerships, Empowerment), the core research project for the UNC Center for Health Promotion and Disease Prevention a Prevention Research Center (PRC) funded by the Centers for Disease Control and Prevention. She is the most recent past chair of the National Community Committee, comprised of community representatives from each of the 37 PRCs. Ms. Barnes' research interests include community based participatory research and the health of rural women.

Tim Barzyk*, U.S. Environmental Protection Agency (EPA)*
Workshop Presenter: "Methods to Collect and Organize Information for Community-Based Cumulative Risk Assessments"

Tim Barzyk is a Research Scientist with the Environmental Protection Agency. He has been working closely with EPA Regions and Community Organizers in the last few years to develop meaningful approaches that sort through the many potential risks that communities face in their everyday lives, and to use this information to develop to-do lists to improve community health. His work incorporates the latest scientific principles related to cumulative risk, tempered by feedback from community residents and real-world applications.

Sharon Beard*, National Institute of Environmental Health Sciences*
Session lead: "Institutional Review Boards and Community Engaged Research: How can Universities and Community Organizations Work Together to Strengthen the Ethics Review of Community Based Research?"

Sharon Beard, M.S., is an industrial hygienist in the Worker Education and Training Program of the Division of Extramural Research and Training at NIEHS. As an industrial hygienist, Beard is primarily responsible for coordinating, evaluating, and improving the nation-wide worker education and training program especially in the area of the Minority Worker Training Program initiative. She uses her background in industrial hygiene to provide expert review, guidance, and leadership in managing a multi-million dollar portfolio of worker training grants in the area of hazardous waste, emergency response, and nuclear weapons/radiation

reaching communities all over the US. She has also worked within DERT, assisting with efforts to facilitate and coordinate translational research through the PEPH Program.

Building on her environmental and occupational health experience acquired while working in the Environmental Restoration and Industrial Hygiene & Safety Departments at Westinghouse Savannah River Company in S.C., she is currently a member of the NIEHS Science Advisory Committee, HHS Environmental Justice Working Group, and the Brownfields Federal Partnership Interagency Working Group. She is also a member of the American Public Health Association and ACGIH. Beard holds a Master of Science in Environmental Science and Management from Tufts University where she received the prestigious Environmental Science and Management Fellowship from the National Urban Fellows, Inc. She also holds a Bachelor of Science degree in Biology with minor in Business from Western Carolina University.

Zara Berg*, Fort Peck Community College*

Workshop Presenter: "Macroepigenetics Research and Intervention Design in Action"

As a first generation college student, Zara Berg, M.S., attended college at Montana Tech of the University of Montana and graduated with a major in biology. She then went to Texas A & M to obtain her M.S. Interdisciplinary Toxicology degree. Currently Berg is a science instructor and serving as the chair of the science department at Fort Peck Community College in North Eastern Montana. She is a new investigator and an EPA Eco-ambassador.

Linda Birnbaum*, National Institute of Environmental Health Sciences*

Welcome Speaker

Linda S. Birnbaum, Ph.D., became the director of the NIEHS and the National Toxicology Program (NTP) on January 18, 2009. In these roles Birnbaum oversees federal funding for biomedical research to discover how the environment influences human health and disease. Several advisory boards and councils provide Birnbaum and NIEHS/ NTP staff with input to accomplish this large task.

Birnbaum is the first toxicologist and the first woman to lead the NIEHS/NTP. She has spent most of her career as a federal scientist. Birnbaum has received numerous awards and recognitions, including being elected to the Institute of Medicine of the National Academies in October 2010, one of the highest honors in the fields of medicine and health. Birnbaum's own research and many of her publications focus on the pharmacokinetic behavior of environmental chemicals; mechanisms of actions of toxicants, including endocrine disruption; and linking of real-world exposures to health effects.

Birnbaum also finds time to mentor the next generation of environmental health scientists. For example, she served as adjunct professor in the Gillings School of Global Public Health, the Curriculum in Toxicology, and the Department of Environmental Sciences and Engineering at the University of North Carolina, Chapel Hill, as well as in the Integrated Toxicology Program at Duke University. A native of New Jersey, Birnbaum received her M.S. and Ph.D. in microbiology from the University of Illinois at Urbana-Champaign.

Phil Brown*, Northeastern University*

Session Presenter: "Community Experience of Contaminated Communities: Contributions from the Social Sciences"

Phil Brown, Ph.D., is University Distinguished Professor of Sociology and Health Sciences at Northeastern University. He directs the Social Science Environmental Health Research Institute, which extends the work of the Contested Illnesses Research Group, which started in 1999 at Brown University. He is the author of *No Safe Place: Toxic Waste, Leukemia, and Community Action* and *Toxic Exposures: Contested Illnesses and the Environmental Health Movement* and co-editor *of Illness and the Environment: A Reader in Contested Medicine*, *Social Movements in Health*, and *Contested Illnesses: Citizens, Science and Health Social Movements*. His current research includes biomonitoring and household exposure, social policy concerning flame retardants, ethics of reporting back research data to participants, data privacy, and health social movements.

Sharunda Buchanan*, Centers for Disease Control and Prevention (CDC)*

Welcome Speaker

Sharunda Buchanan, Ph.D., currently serves as the director of the Division of Emergency and Environmental Health Services at CDC's National Center for Environmental Health. Buchanan received her B.S. and M.S. degrees in chemistry and toxicology from Texas Southern University and her doctorate degree in biochemistry from Clark Atlanta University. In 1990, Buchanan joined the Agency for Toxic Substances and Disease Registry as an environmental health scientist in the Division of Toxicology. Later she joined CDC as an epidemic intelligence officer assigned to the Division of Environmental Hazards and Health Effects (DEHHE). During her tenure with DEHHE, Buchanan greatly contributed to the expansion of the National Childhood Lead Poisoning Prevention Program and a Healthy Homes Research Agenda.

In 2001, Buchanan became chief of the Environmental Health Services Branch and served in this capacity until becoming director of the Division of Emergency and Environmental Health Services. As a recognized leader in the field of environmental public health practice, Buchanan is committed to developing future leaders and maintaining a national agenda that seeks to improve emergency and environmental public health services across the country. Buchanan led CDC's Division of Emergency and Environmental Health Services in the development of the important lighthouse document, A National Strategy to Revitalize Environmental Public Health Services in the United States. The goals outlined in the strategy highlight objectives for improving local environmental health services that will, in turn, establish an effective and efficient national environmental health services system capable of anticipating, identifying and controlling existing and emerging environmentally related health threats.

Richard Callan*, U.S. Environmental Protection Agency (EPA)*
Session Lead: "Examining Environmental Determinants of Health and Engaging Communities around EPH Issues Using Geographic and Spatial Analysis"

Rich Callan, M.P.H., began work at the U.S. EPA in 2004, first as an ASPH-EPA Fellow and currently as an environmental health scientist and project officer at EPA's National Center for Environmental Research in the Office of Research and Development. He worked with colleagues at EPA and NIMHD to administer the EPA-NIMHD Centers of Excellence on Environment and Health Disparities Research program, aiming to find new evidence-based strategies for alleviating disparities in environmentally mediated health outcomes and expanding access to healthy and sustainable environments. He also works with colleagues and EPA and NIEHS to administer the EPA/NIEHS Children's Environmental Health and Disease Prevention Research Centers Program ("Children's Centers"), which began in 1998 to understand how environmental factors affect children's health, explore ways to reduce children's health risks, and promote translation of research findings into interventions and methods to prevent adverse health outcomes. Callan has an M.P.H in environmental health sciences from Yale and is honored to be working with so many terrific colleagues at EPA, NIMHD, and NIEHS.

Tarase Carter*, Tulane University*
Workshop Presenter: "Best Practices for Community-Engaged Research: Including Louisiana Coastal Communities in the Research Agenda"

Tarase St. Joan Carter is the senior program coordinator, family advocate. Carter received her L.P.N. from Delgado Community College. A notable accomplishment is being an advocate for babies, children, and families. Her profound desire for stronger communities led her into the social services arena. Before bringing her Crescent Region Collaborative Coalition to Tulane, she worked for twelve years as the special program coordinator for the Gulf Coast Social Services Covering Kids & Families program. In 2010, she started the Crescent Region Covering Kids & Families Coalition, which currently has 72 organizations as members. Carter continues to serve the New Orleans and Gulf Coast area as a board member of the Department of Children & Family Services Orleans Regional Performance and Quality Improvement and Zero to Three: New Orleans Safe Babies Court Team. She also works as facilitator for the Stewards of Children "Darkness to Light" and "Why Try" programs, while maintaining an after school and weekend lunch bag program for all of Southeast Louisiana.

Miranda Chien-Hale, *Occidental College*
Workshop Presenter: "Community-Academic Engagement through Community Monitoring by Neighborhood Assessment Teams ('A' Teams) and Production of CBPR Manual"

Miranda Chien-Hale helped to compile an instruction and information manual for the Trade, Health, and Environmental (THE) Impact Project. This projects aims to document and share the successes of several southern Californian community groups in reducing the impacts of global trade. Miranda received her B.A. in geology from Occidental College this past May and will be attending Duke University this fall to pursue her master's degree in Environmental Management.

Gwen Collman*, National Institute of Environmental Health Sciences*
Presenter: "Using Research Results to Improve Environmental Public Health"

Gwen Collman, Ph.D., has been the director of the Division of Extramural Research and Training (DERT) at the NIEHS since 2008. She leads the development and management of the Division's research portfolio in areas aligned with the newly developed NIEHS Strategic Plan. The grant portfolio includes scientific research and training activities across the field of environmental health sciences, including fundamental research, exposure science, population health and susceptibility, health disparities, and community-engaged research addressing contemporary environmental health issues. Specific areas of research include grants that support the study of diseases associated with environmental exposures, mechanisms of their causation, and research on specific environmental exposures. The portfolio includes research on diseases such as breast cancer, autism, Parkinson's Disease; disease processes such as neurodegeneration and autoimmunity; mechanisms of disease causation such as DNA repair and epigenetic; and exposures of interest such as endocrine disrupting chemicals, metals, and climate change. DERT also maintains a portfolio of grants supporting training and career development for environmental health scientists.

DERT programs have led the way for involvement of stakeholders at the local, state, and national level to become engaged in research projects on the health effects of environmental exposures of concern to the public. For over a decade, Collman has overseen the creation of partnerships that have built and supported methodologies and technologies to include community partners and other stakeholders in important environmental health science research. As part of the Partnerships for Environmental Public Health program, new tools and methods for research dissemination and evaluation, have been her priority in order to inform many audiences about the public health impacts of exposures to pollutants in our environment. Collman has a Ph.D. in environmental epidemiology from the University of North Carolina School of Public Health. She has been at NIEHS since 1984, holding positions within the intramural and extramural programs.

Katsi Cook*, Running Strong for American Indian Youth*
Session Presenter: "Inequities Persist: Environmental Justice from a Native American Perspective"

Katsi Cook (Akwesasne Mohawk) is the director of Running Strong for Indian Youth. She is an Aboriginal midwife, mother of six, and grandmother of ten. Since 1983, she has conducted award-winning environmental justice health research in her home community of Akwesasne, N.Y. Cook created the First Environment Collaborative of Running Strong for American Indian Youth. In her experience of over 25 years as a Mohawk midwife, women's health advocate, and activist for environmental restoration in her tribal community — the Mohawk Nation at Akwesasne — Cook works at the intersections of reproductive justice and environmental justice. She is a respected elder and educator in her community and has written numerous published essays and articles for Indian Country Today.

She was a featured speaker at Live Earth at the National Museum of the American Indian in Washington, D.C., in 2007. She was honored in 2005 where community leaders, including a generation of women who became mothers and social activists under her guidance, honored Cook's leadership and extensive body of work. She was a recipient of a 2004-2005 Indigenous Knowledge Cultural Researcher Award from the Indigenous Health Research Development Program at the University of Toronto. She has served as a Maternal and Child Health consultant for the Tribal Epidemiology Center at United South and Eastern Tribes

(USET, Inc.), Nashville, Tenn., a consortium of 24 tribal communities in the southern and eastern region of the United States. Cook is researching and writing about environmental and reproductive justice issues in Native America.

Jauna Crear*, Crear Law Firm*

Workshop Presenter: "Best Practices for Community-Engaged Research: Including Louisiana Coastal Communities in the Research Agenda"

Jauna Crear, Esq., M.B.A, is a private practice attorney, specializing in small business advice and non-profit governance. She is the former executive director of Health Law Advocates of Louisiana, a non-profit law firm devoted to improving access to health care in Louisiana. She has been a member of the Crescent Region Collaborative Coalition for a number of years, serving on the leadership team that has helped guide the Coalition through multiple phases of its development. Crear is a graduate of Tulane Law School and the AB Freeman School of Business, and she is licensed to practice law in Louisiana and Texas.

Sharon Croisant*, University of Texas Medical Branch*

Session Presenter: "Innovative Tools and Technologies for Environmental Public Health Research"
Session Presenter: "Conflicts over Research that Identifies Community Impacts of Environmental Exposures"

Sharon (Petronella) Croisant, Ph.D., is an associate professor on the faculty of the School of Medicine's Department of Preventive Medicine and Community Health. She is the course director for Environmental Health and Toxicology, which is an interactive course within the M.P.H program that examines factors in the environment that contribute to disease risk within the larger context of public health. Her doctorate is in epidemiology and her master's in health promotion and education. She also currently directs the University of Texas Medical Branch Center in Environmental Toxicology's Community-based Research Facility as well as its Community Outreach and Engagement Core. She is a Center investigator within the Institute for Translational Sciences, which houses the University's Clinical and Translational Science Award, for which she serves as co-director of the Community Engagement and Research Key Resource.

A major focus of her career has been translational or integrative research, i.e., building interfaces between and among environmental and clinical research, education, and community health. She has considerable expertise in community-based participatory research, including its applications in environmental justice communities, and is currently the co-PI of a NIEHS grant to investigate the long-term health effects of consumption of Gulf seafood potentially contaminated by the Deepwater Horizon oil spill. She has collaborated on multiple projects designed to elucidate the causes and mechanisms of asthma exacerbations related to air pollution and has established long-standing, ongoing collaborative relationships with community stakeholders with a vested interest in using these research findings to direct community-based intervention and outreach activities. An active member of the University of Texas Medical Branch faculty, she is the past chair of the institutional Faculty Senate and was recently selected to serve on a national Scientific Advisory Panel for the Environmental Protection Agency.

Caroline Dilworth*, National Institute of Environmental Health Sciences*
Session Moderator: "Research to Action: Translational Research to Address Health Disparities and Environmental Inequities"

Caroline Dilworth, Ph.D., is a health scientist administrator in the Division of Extramural Research and Training, where she co-directs the extramural environmental epidemiology program. She is responsible for developing a portfolio of grants focused on the impact of environmental exposures on human health, including male and female reproduction, pubertal maturation, cancer, adult cardiovascular and respiratory health, and general statistical methods development and exposure assessment for population-based studies. She leads the NIEHS Human Health Impacts of Climate Change program and is the lead program administrator for the puberty studies of the NIEHS and NCI-funded Breast Cancer and the Environment Research Program.

Prior to joining NIEHS in 2008, Dilworth completed a postdoctoral fellowship at the University of North Carolina, where her research focused primarily on the adverse effects of exposure to drinking water disinfection by-products on pregnancy health. She received a joint M.S.P.H. in epidemiology and environmental and occupational health from Emory University and a Ph.D. in epidemiology from University of North Carolina.

Ogonnaya Dotson-Newman*, WE ACT for Environmental Justice*
Session Presenter: "Using Health Impact Assessments (HIAs) to Address Environmental Health Disparities and Create Equity in Communities"
Workshop Presenter: "Creating, Collecting, and Telling Our Stories: Tools for Multi-Stakeholder Engagement"

Ogonnaya Dotson-Newman, M.P.H., joined WE ACT in April 2008 as the organization's Environmental Health and Community-Based Research Coordinator and become the Director of Environmental Health in 2011. Prior to joining the WE ACT team, Dotson-Newman worked at Loma Linda University's School of Public Health as a research associate and Instructor. Born and raised in California to a family of community organizers and environmental activists, she learned at an early age about the strong link between health and the environment. Her strong passion for linking social justice and science led to an undergraduate degree in environmental science. She also holds an M.P.H. with an emphasis on environmental health.

Christie Drew*, National Institute of Environmental Health Sciences*
Workshop Presenter: "Evaluating PEPH Activities"

Christina (Christie) Drew, Ph.D., joined the NIEHS Division of Extramural Research and Training, Program Analysis Branch in 2007 and became branch chief in 2009. She received her Ph.D. in geography from the University of Washington in 2002 for her work on transparent communication of complex environmental health decisions. She has a Master of Health Science degree from the Johns Hopkins School of Hygiene and Public Health and an undergraduate degree in government from the College of William and Mary.

Drew has been a researcher at the University of Washington in Seattle and the Institute for Evaluating Health Risks in Washington, D.C. She has also worked at the World Health Organization Regional Office for Europe in Copenhagen and at Ross & Associates Environmental Consulting in Seattle. Her research interests have included environmental health risk communication, nuclear waste cleanup, community-based participatory research, geographic information systems, children's environmental health, pesticide exposure, and research evaluation.

Renee Dufault*, Food Ingredient and Health Research Institute*
Workshop Presenter: "Macroepigenetics Research and Intervention Design in Action"

As a uniformed services officer, Renee Dufault served in the Navy as an industrial hygiene officer and the Public Health Service as an environmental health officer. She retired early after 20 years in 2008, to publish her findings of mercury in high fructose corn syrup and continue her research with collaborators on the role toxic food ingredients play in the development of disease conditions. Her most popular article published in the Clinical Epigenetics journal explores the gene-environment interactions responsible for the autism epidemic in the U.S. She was a distinguished keynote speaker at the 2013 Clinical Epigenetics meeting in Germany.

Eugenia (Jeannie) Economos, *Farmworker Association of Florida*
Session Presenter: "Research to Action: Translational Research to Address Health Disparities and Environmental Inequities"

Jeannie has worked for over 20 years on issues of the environment, environmental justice, indigenous and immigrants' rights, labor, peace and social justice. From 1996-2001, she worked for the Farmworker Association of Florida as the Lake Apopka Project Coordinator, addressing the issues of job loss, displacement and health problems of the farmworkers who worked on the farm lands on Lake Apopka prior to the closing of the farms in 1998. After the bird mortality in 1998-99, her focus turned to the pesticide-related health problems of the former Lake Apopka farmworkers, who were exposed to the same damaging organochlorine pesticides that were implicated in the bird deaths. Since 2007, she has been the Pesticide Safety and Environmental Health Project Coordinator of FWAF, coordinating pesticide trainings for farmworkers in Florida, identifying workplace violations of Worker Protection Standards, and conducting health care provider trainings on pesticide exposure of farmworkers. She is, also, engaged in local, state, national and international coalitions and collaborations related to farmworker rights and health and safety, pesticide reduction, sustainable agriculture and food sovereignty. She is currently co-coordinator of the Lake Apopka Farmworker Memorial Quilt Project, whose purpose is to raise awareness about the impacts of pesticides on the former farmworkers on Lake Apopka. She served on the Serving Communities Work Group of the National Conversation on Public Health and Chemical Exposures and is currently on the Board of Directors of the Farmworker Health and Safety Institute and Florida Consumer Action Network.

Michael Edelstein*, Ramapo College of New Jersey*
Session Presenter: "Community Experience of Contaminated Communities: Contributions from the Social Sciences"

Michael R. Edelstein, Ph.D., earned a Ph.D. in social psychology from the University of Buffalo, where he taught in the environmental design program. He moved in 1974 to the interdisciplinary environmental studies program at Ramapo College of New Jersey, where he teaches courses in world sustainability, sustainable communities, environmental psychology, environmental assessment, as well as several courses in the Masters in sustainability studies.

Beginning in 1979, at Love Canal, he became fascinated by the dynamics of contaminated communities. His 1988 book by that name, now in its second edition and described as the classic in its field, evolved from an effort to explain the impacts on people from living in a contaminated environment. Subsequent books have explored and broadened the examination to include cross-cultural studies, including *Chernobyl* and the *Mayak Kystym 57 Disaster*. Numerous articles and chapters have similarly developed this work. A recent article on the BP Gulf Oil Disaster won the Emerald Publishing Journal Submission Award for 2011. Edelstein has also engaged in an active consulting business addressing chemical and nuclear contamination impacts, appearing as an expert witness in numerous toxic torts and administrative permit hearings, most recently including tar sands upgrading and gas extraction in Alberta, Ca., the relicensing hearings for Indian Point Nuclear Power plants in New York, and the restart of uranium mining in New Mexico.

Christine Ekenga*, National Institute of Environmental Health Sciences*
Session Moderator: "Cumulative Exposures: The Role of Epidemiology in Elucidating Environmental Contributions to Health Disparities"

Christine Ekenga, Ph.D., is a postdoctoral research fellow in the Epidemiology Branch at NIEHS. Dr. Ekenga's research focuses on exposure assessment methods for epidemiologic studies and environmental risk factors for chronic diseases. She received her Ph.D. in Epidemiology from New York University School of Medicine.

Senaida Fernandez*, University of California Office of the President (UCOP)*
Session Presenter: "Addressing 'Research Disparities': Building Connections to Build Capacity"

Senaida Fernandez, Ph.D., is a program officer for Community Initiatives and Public Health Sciences at the California Breast Cancer Research Program (CBCRP). She is a clinical psychologist with specialization in research methodology. In her role with the CBCRP, she focuses on working with community-academic research partnerships to build capacity for community-based participatory research in breast cancer. She accomplishes this through one-on-one and group technical assistance, as well as outreach efforts. Prior to her work with the CBCRP, she utilized qualitative and quantitative research methodologies to address health disparities among ethnic minority adults. She has been an assistant professor of medicine in the Division of General Internal Medicine at New York University School of Medicine, and completed her postdoctoral training at Columbia University. She completed her graduate work at the University of California, San Diego and San Diego State University Joint Doctoral Program in Clinical Psychology and her clinical internship in behavioral medicine at the VA Palo Alto Health Care System.

Symma Finn*, National Institute of Environmental Health Sciences*
Session Moderator: "Innovative Tools and Technologies for Environmental Public Health Research"
Session Moderator: "Inequities Persist: Environmental Justice from a Native American Perspective"

Symma Finn, Ph.D., received her Ph.D. in medical anthropology from the University of Florida in 2008 for her work on quantifying empowerment in a rare genetic disease community. She has a M.A. from the University of Miami in environmental anthropology for her work on the anthropological aspects of ecosystem management, and an undergraduate degree in communications from Adelphi University.

Finn has conducted research on physician-nurse-patient communication and shared decision-making as a postdoctoral fellow at the University of Florida, has served as director of research and grants for the Alpha-1 Foundation, a rare genetic disease organization, and as administrative assistant to the dean of the Rosenstiel School of Marine and Atmospheric Science. She joined DERT in December 2011 after concluding an American Association for the Advancement of Science (AAAS) Policy Fellowship in the NIH Office of Science Policy/Office of Biotechnology Activities. Finn administers social and behavioral research and develops new areas of interest in communications and environmental health literacy. She is overseeing communication and outreach and community resilience activities for the Deepwater Horizon Research Consortium, and is involved in the Breast Cancer and the Environment Research Program, Partnerships for Environmental Public Health, and in other programs that deal with health disparities, environmental justice, and communications.

Karla Fortunato*, Health and Environmental Funders Network (HEFN)*
Presenter: "Challenges and Opportunities for Supporting Community Based Research to Address Environmental Health Disparities and Environmental Justice"

Karla Fortunato, M.B.A, is the director of the Health and Environmental Funders Network (HEFN), a membership organization focused on maximizing philanthropy's impact on environmental health and justice. Fortunato previously served as associate director of Policy of Health Care for All, a statewide health access advocacy organization in Massachusetts, where she managed their policy campaigns. She also provided strategic guidance in the planning and establishment of the Boston-based Public Policy Institute, an organization committed to building the infrastructure and skills set of social justice organizations. She holds an M.B.A., magna cum laude, from the George Washington University (2009) and a B.A., magna cum laude, from Randolph-Macon Woman's College (1999).

Saundra Glover*, University of South Carolina*
Session Presenter: "Examining Environmental Determinants of Health and Engaging Communities around EPH Issues Using Geographic and Spatial Analysis"

Saundra Glover, Ph.D., is the associate dean for Health Disparities and Social Justice and professor of Health Services Policy and Management in the Arnold School of Public Health at University of South Carolina, Columbia, S.C., Glover is at the forefront of Public Health Practice and Health Equity Initiatives locally, nationally, and internationally. She also directs the School's Institute for Partnerships to Eliminate Health Disparities research portfolio addressing disparities in cancer and HIV/AIDS. Glover is also associate director

of the South Carolina Rural Health Research Center examining rural/urban differences in access to health care and quality of care, particularly for vulnerable and disadvantaged populations.

Gary Grant*, North Carolina Environmental Justice Network*

Session Presenter: "Conflicts over Research that Identifies Community Impacts of Environmental Exposures"

Gary Grant has undertaken a wide variety of initiatives in the rural, poor, largely African-American area of Tillery, N.C. His work has at its center a bedrock commitment to justice and popular participation. He has led the Concerned Citizens of Tillery, the Black Farmers and Agriculturalists Association, and the N.C. Environmental Justice Network, and has been a catalyst for the formation of many other local, regional, and national community-based organizations. These coalitions transformed a potato curing house into a People's Health Clinic for medically underserved residents of Tillery, settled a nationwide class action civil rights suit against the U.S. Department of Agriculture, and helped stop the disproportionate placement of industrial swine operations, landfills, and other polluting industries in low-income and Black communities.

Working from the foundation of the Concerned Citizens of Tillery, Grant has helped empower a largely aged, low-income community to achieve improved nutrition, physical activity, literacy, political participation, and access to public services including a local fire department. From this strong base he has reached out to build bridges in North Carolina and beyond that unite people across racial, class, and political divisions to build sewer lines in Black communities excluded from public amenities, adopt the first intensive livestock ordinance in North Carolina, and help bring a statewide moratorium on construction of new industrial swine operations. Since 1998, he has brought together residents of communities affected by environmental injustices, lawyers, government officials, students and researchers at the annual N.C. Environmental Justice Summit. Through his speeches and interviews on television and radio, as well as articles in respected publications, he is nationally known as a leader in community-driven research and education, and is widely acclaimed as an inspirational public speaker and leader in struggles to extend justice and democracy to all people.

Neasha Graves*, University of North Carolina, Chapel Hill*

Session Presenter: "Effectively Reaching Underserved Populations: Lessons Learned on Culturally Appropriate Communication Strategies and Tools"

Neasha Graves, M.P.A., is the manager for the Community Outreach and Engagement Core in the UNC Center for Environmental Health and Susceptibility. In her current position, she coordinates environmental health outreach initiatives aimed at sharing the Center's research with various audiences. Her areas of expertise include teaching and administering programs for youth and adults in the public school, state government, nonprofit, and university sectors.

Her work also entails coordinating the outreach activities of the UNC Breast Cancer and Environment Research Program. Graves serves as the director of the Community Partnership for this program and is collaborating with researchers and community partners to develop educational materials about risk factors of basal-like breast cancer for premenopausal African American women and health professionals. Prior to

her position at the University of North Carolina, Chapel Hill, she was the public health program consultant for the N.C. Childhood Lead Poisoning Prevention Program in the N.C. Children's Environmental Health Branch. She also has experience working in community outreach for the N.C. Office of Environmental Education and as a high school social studies teacher. Graves earned her B.A. degree in History from Meredith College and her master's degree in Public Administration from North Carolina Central University.

Elizabeth Hoover*, Brown University*

Session Presenter: "Community Experience of Contaminated Communities: Contributions from the Social Sciences"

Elizabeth Hoover, Ph.D., is assistant professor of American Studies and Ethnic Studies at Brown University, where she teaches courses in Native American Studies, environmental health movements, and community-based participatory research. At Brown, she co-directs the Community Engagement Core of the Superfund Research Program, working with local watershed councils and indigenous organizations to explore and mitigate the impact of environmental contamination on Rhode Island residents. Her current book project is based on research conducted with the Mohawk community of Akwesasne and examines how industrial sites along the St Lawrence River, and subsequent health studies around these sites, have affected residents' perceptions of their bodies, local food, science, and the environment. Her most recent publications include a collaborative piece in *Environmental Health Perspectives* introducing the concept of "environmental reproductive justice" as well as an article in *Ecological Processes* about the cultural impacts of fish advisories on Native American communities.

Andrea Hricko*, University of Southern California*

Workshop Presenter: "Community-Academic Engagement through Community Monitoring by Neighborhood Assessment Teams ('A' Teams) and Production of CBPR Manual"

Andrea Hricko, M.P.H., directs community outreach and engagement/translation for the NIEHS environmental health sciences core center and EPA/NIEHS children's environmental health center, both based at the Keck School of Medicine of University of Southern California, where she is also a professor in the department of preventive medicine. She works to translate research findings into public health action and inform policy initiatives by providing guidance about the effects of air pollution on human health, particularly with regard to living or going to school in close proximity to traffic-related pollution. Hricko is a leader in efforts to make health a priority in the debate about expansion of ports, rail facilities, and highways to serve international trade. She serves on the local southern California air district's environmental justice advisory committee and on the national advisory council to the NIEHS.

Rebecca Jim*, L.E.A.D. Agency*
Session Presenter: "Research to Action: Translational Research to Address Health Disparities and Environmental Inequities"

Rebecca Jim, M.A., is a retired Oklahoma Public School Indian Counselor who then became the executive director of a citizen's organization, Local Environmental Action Demanded (L.E.A.D.) Agency., L.E.A.D brings awareness and actions around the Tar Creek Superfund site and other environmental issues in northeast Oklahoma. Jim reached out to researchers at the Harvard School of Public Health 18 years ago, seeking answers to the questions residents raised. The latest question concerned mercury in local fish resulting in the completion of the NIH funded Grand Lake Watershed Mercury Study in partnership with Harvard School of Public Health and Oklahoma University Health Sciences Center. She earned a B.A. in behavioral sciences from Southern Colorado State College in 1972 and an M.A. in education, counseling from Northeastern State University in 1976.

James H. Johnson, Jr., *U.S. EPA National Center for Education Research (NCER)*
Welcome Speaker

James H. Johnson Jr., Ph.D., is the director of the EPA's National Center for Environmental Research (NCER) within the Office of Research and Development. His leadership helps maximize extramural research efforts in exposure, effects, risk assessment, and risk management. In this time of shrinking budgets, Johnson is pursuing expansion of NCER's exploratory research impact through expanded partnering and collaborative research efforts. His other goals include shortening the RFA approval process, broadening participation in conceptualization of new RFAs, developing a mentorship program and building on NCER's research successes.

Johnson has served in several National Academies committees and boards, most recently as a member of the Division of Earth and Life Sciences oversight committee. His previous experience with EPA includes a student internship in 1969, chair of the Board of Scientific Counselors, chair of the National Advisory Council for Environmental Policy and Technology, and member of the Science Advisory Board. He is currently a member of the Anne Arundel Community College (MD) Board of Trustees, and is professor emeritus of civil engineering and dean emeritus of the College of Engineering, Architecture and Computer Sciences at Howard University.

Johnson received his Bachelor of Science in civil engineering from Howard University in 1969. In 1970, he earned a Masters of Science from the University of Illinois. He further continued his education and graduated from the University of Delaware in 1982 with a Ph.D. in Applied Sciences. Johnson's research interests include the treatment and disposal of hazardous substances, the use of nanomaterials for environmental restoration, the evaluation of environmental policy issues in relation to minorities, and the development of environmental curricula and strategies to increase the pool of underrepresented groups in the science, technology, engineering and math (STEM) disciplines.

Paul Juarez*, University of Tennessee Health Science Center*
Session Presenter: "Examining Environmental Determinants of Health and Engaging Communities around EPH Issues Using Geographic and Spatial Analysis"
Session Presenter: "Cumulative Exposures: The Role of Epidemiology in Elucidating Environmental Contributions to Health Disparities"

Paul D. Juarez, Ph.D., is the director of the Research Center for Health Equity and the Exposome and professor of preventive medicine at the University of Tennessee Health Science Center. Juarez previously served as PI of the NIMHD Health Disparities Research Center of Excellence at Meharry Medical College and director of its Community Engagement Core. As PI of the Health Disparities Research COE, he led Center research activities in applying a systems approach to health disparities.

In September 2012, he received a supplemental award from the EPA to examine the environmental context of health disparities. This led to the operationalization of the public health exposome to include four environmental domains: the natural, built, social, and policy environment and the establishment of a 30-year longitudinal database that provided a major step towards measuring the "totality" of one's exposures, from conception to death. The public health exposome database is stored both in a geographic information system (GIS) to support visualization and mapping and in a SQL relational database to support statistical analyses, modeling, and simulations. It currently includes more than 10,000 variables. Due to the size, nested nature, and spatial/temporal characteristics of the data, Center investigators have adapted non-traditional public health methods to analyze it, including multi-level, computational analysis, and spatial analysis. Finally, the Center has incorporated the use of public participatory GIS as a strategy for engaging community partners in the research process. The goal of the Center's Community Engagement Core is to work with community partners to jointly identify local environmental health concerns, collect and display data with smart phone and web applications, and develop, target and evaluate the results of local interventions.

Amy D. Kyle*, University of California, Berkeley*
Workshop Presenter: "Cumulative Impacts and Children's Environmental Health"

Amy D. Kyle, Ph.D., spent her formative years engaged in policy change to improve environmental quality and public health and retains a primary interest in public policy. She has a broad background in environmental health research and practice.

Kyle directs research translation and community engagement for the Superfund Research Program at Berkeley and the Center for Integrative Research on Childhood Leukemia and the Environment. She is affiliated with research groups on Environmental Public Health Tracking at the University of California, Berkeley. She was recently appointed associate director of the Berkeley Institute for the Environment. She works with many community-based organizations, non-governmental organizations, executive and legislative agencies, and academic partners.

Kyle has served in senior positions in environmental protection at the state level, working on a wide range of environmental, health, and natural resources issues. Her Masters of Public Health and her doctorate in environmental health sciences and policy are from the University of California, Berkeley and B.A. in

environmental sciences is from Harvard College. She has served as vice chair of the California Breast Cancer Research Council, was elected as Councilor to the Environment Section of the American Public Health Association, and was appointed by U.S. Environmental Protection Agency Administrator Lisa Jackson to the Children's Health Protection Advisory Committee. Her academic work has been supported by the NIEHS, the US Environmental Protection Agency, the Centers for Disease Control and Prevention, and the State of California.

Kyle's work is at the intersection of science, policy, and civic engagement. She is currently exploring use of networking approaches to engagement and to propagation of knowledge and capacity for change across disciplinary and sectoral boundaries. She is working research translation and engagement programs that can transition to new platforms, adapting scientific content for video and mobile media. She specializes in design of forms of engagement that span academic and external policy relevant sectors. Her research interests include the relationship between policy concepts and metrics based on empirical data, higher order approaches to synthesis of scientific research, uptake of scientific findings and knowledge by of civil society and public institutions, and representation of scientific findings and knowledge in ways that are understandable by policy audiences. Recent topics include cumulative impacts, chemical policies, children's environmental health, biomonitoring, health disparities and environmental justice, and air pollution standards.

Clarita Lefthand-Begay*, University of Washington*

Session Presenter: "Inequities Persist: Environmental Justice from a Native American Perspective"

Clarita Lefthand-Begay, M.S., is a Ph.D. Candidate in the University of Washington's School of Public Health. As a master's student in environmental health, beginning in 2005, she worked on a microbial source tracking project.

In the first two years as a doctoral student she worked on a project that aimed to develop a PCR-based assay to detect viable bacteria in marine and fresh water samples. Microbial source tracking is helps communities identify sources of fecal contamination so that decision makers can strategically mitigate pollution and protect their communities. The PCR-based assay can be used to distinguish between bacterial cells that are viable or nonviable, which has consequences in water health, food safety, biodefense, and clinical settings. Her doctoral dissertation examines disconnects between specific goals and values of the Environmental Protection Agency's Clean Water Act, and tribal cultural values. In this work, a holistic approach is taken to better understand how some tribal nations develop water quality standards to protect their communities, and examine some of the advantages and challenges affiliated with this process. This research allows for the consideration about how Tribal perceptions, knowledge and values can inform water quality standards.

David Lewis*, Neural Dynamics Research Group, University of British Columbia*
Session Presenter: "Conflicts over Research that Identifies Community Impacts of Environmental Exposures"

David Lewis, Ph.D., is a research associate at Neural Dynamics Research Group at the University of British Columbia. His primary area of research is the persistence, transport, and fate of infectious agents and environmental toxins in both clinical settings and natural environments, including air, water, soils, and sediments.

Lewis and his coworkers demonstrated that environmental changes alter the relative persistence of different enantiomers of chiral pollutants, including pesticides and pharmaceuticals (Lewis *et al*. *Nature* 401:898-901, 1999). They also documented adverse health effects associated with heavy metals and organic chemicals found in aerosols generated by processed sewage sludges (biosolids) applied to land. The team also investigated the survival, transport, and fate of infectious agents in clinical settings in dentistry and endoscopy. They discovered, for example, that lubricants used in dental and medical devices are impervious to chemical disinfection, and can remain infectious with HIV and other agents when expelled by dental hand pieces and their attachments (drills, prophy angles) during subsequent procedures. This research prompted the CDC and other public health organizations worldwide to recommend that all items entering the oral cavity during dental procedures be heat sterilized or discarded after each use. (Lewis *et al*., *Lancet* 340: 1252-4, 1992; Lewis and Arens. *Nature Med*. 1:956-958, 1995).

The team's research on biosolids emphasized environmental justice aspects, and *Nature* published a supportive editorial and news article highlighting the independent confirmation of their research linking gastrointestinal, skin and respiratory illnesses to biosolids. (*Nature* 453:258, 262-263, 2008). From 1994-2000, Lewis assisted various committees in the U.S. Senate and House of Representatives with hearings and legislation regarding scientific integrity (*Science*, Vol. 279. 20 Feb. 1998); and *Nature* published his commentary, *EPA science: Casualty of election politics* (*Nature* 1996, 381:731-732).

Johnnye Lewis*, University of New Mexico*
Session Presenter: "Inequities Persist: Environmental Justice from a Native American Perspective"

Johnnye Lewis, Ph.D., is a toxicologist and professor in the College of Pharmacy at the University of New Mexico Health Sciences Center (UNM-HSC). She is the founder and director of the Community Environmental Health Program and has active community-based research programs on heavy metal exposures and health in Native American communities. For more than 25 years she has partnered with communities to build multidisciplinary teams to translate basic laboratory science into community-based approaches that answer community environmental health questions, and inform policy and clinical care. She has a specialty in inhalation toxicology and has served by appointment on the Albuquerque-Bernalillo County Air Quality Control Board, and on the Environmental Health Coordinating Council advisory to the New Mexico Departments of Health and Environment. Through a Joint Powers Agreement with the New Mexico Environment Department she developed health-based recommendations on emerging environmental health problems for more than 10 years, for which she received the Griff-Salisbury award from the New Mexico Environmental Law Center.

Lewis has represented environmental justice perspectives as a site reviewer for the NIEHS Centers of Excellence, as a programmatic reviewer of NIEHS's Superfund Research Program, and as a member of a Blue Ribbon Panel for the director of NIH. She is currently the co-director of the Environmental Health Core of UNM-HSC's health disparities center – New Mexico CARES. She has been the principal investigator for more than a decade on the Diné Network for Environmental Health (DiNEH) Project investigating health impacts in communities exposed to legacy uranium waste on the Navajo Nation, and water quality and usage patterns for unregulated water sources.

In a cooperative agreement with CDC/ATSDR, Navajo Area IHS, and Navajo Nation Division of Health, she is currently leading development of a congressionally mandated Navajo Birth Cohort Study to investigate reproductive and developmental health effects of uranium waste exposures related to cold-war era mining and milling operations. She also serves as a consultant to the Cheyenne River Sioux Tribe investigating the impacts of arsenic and mercury contamination on tribal lands.

Marti Lindsey, *University of Arizona*

Session Moderator: "Effectively Reaching Underserved Populations: Lessons Learned on Culturally Appropriate Communication Strategies and Tools"

Marti Lindsey, Ph.D., has taught, informed, and motivated others to accomplish their goals, in over thirty years of progressively greater responsibility. Since 2001, she has been an environmental health outreach professional at the University of Arizona, a position that calls on her education and experiences in higher and secondary education, library and information services, web development, and health care consulting.

Currently, environmental health literacy is the cornerstone of her outreach efforts with community members, pharmacy students, high school students, and teachers, focusing on serving Hispanic and American Indian communities. She developed the Synergistic Cascading model of outreach to guide program development, implementation, and evaluation and a putting communities first approach to bidirectional capacity building around environmental health topics.

Innovative endeavors she has undertaken include the KEYS high school student summer research internship program in collaboration with the BIO5 Institute, environmental health curriculum development with NIH and EPA funding, collaborations with several American Indian communities for environmental health action, and leadership in the University of Arizona Outreach Collaborative to support outreach endeavors across campus.

Lindsey's dissertation was an assessment of environmental health literacy for the best reading level to target for disseminating information to the general public. She discovered that people with the average reading level of 9th grade were able to comprehend complex environmental health information about arsenic and ultraviolet light exposure; however, given the choice they preferred materials written at a lower simpler level.

Lindsey's master's thesis research chronicled her work in Information Literacy, working with Native students in a high school library on the Navajo reservation. In many settings she has demonstrated her ability to be a

bridge between cultures. She learned that the essential elements of this skill are understanding and appreciation for each culture and respect for all people, regardless of age, background, or gender.

Linda McCauley, *Emory University*

Session Presenter: "Research to Action: Translational Research to Address Health Disparities and Environmental Inequities"

Linda McCauley, Ph.D., has more than 20 years of experience conducting interdisciplinary studies using participatory research models to study pesticide exposures among minority communities. She is currently conducting two studies focused on pesticide exposure in migrant farmworkers. The first study is funded by the National Institutes of Health and is focused on improving the health of migrant farmworkers who speak indigenous dialects by increasing their knowledge about pesticide exposure. The second is funded by the National Institute of Occupational Safety and Health and aims to advance our knowledge of agricultural exposures that can impact the health of pregnant farmworker women and to develop strategies for education and health care in this important area.

McCauley is a fellow of the American Academy of Occupational Health Nurses and the Academy of Nursing. She has also been funded to provide occupational and environmental training programs to undergraduate and graduate nursing students. In summary, McCauley has extensive experience in the area of environmental health and nursing, and has demonstrated a record of successful and productive research projects in an area of high relevance to this project.

Gary W. Miller, *Emory University*

Session Presenter: "Cumulative Exposures: The Role of Epidemiology in Elucidating Environmental Contributions to Health Disparities"

Gary W. Miller, Ph.D., is the Asa Griggs Candler Professor of Environmental Health and associate dean for Research in the Rollins School of Public Health at Emory University. Miller is director of the Health and Exposome Research Center (HERCULES), a core center grant funded by the NIEHS to support exposome-related research at Emory University and Georgia Tech. Miller also developed and maintains the website humanexposomeproject.com.

Pamela Miller, *Alaska Community Action on Toxics (ACAT)*

Session Lead: "Challenges and Opportunities for Supporting Community Based Research to Address Environmental Health Disparities and Environmental Justice"

Pamela K. Miller, M.En., founded Alaska Community Action on Toxics (ACAT) in 1997 and serves as executive director. Miller has 30 years of experience in environmental health research and advocacy. She is known for her work as an advocate for statewide, national, and international chemicals policy reform to protect environmental and human health, with an emphasis in the Arctic and sub-Arctic regions. Since 2000, ACAT has been awarded multiple federal grants for which Miller has been serving as team leader and, for the past

six years, as principal investigator of a community-based participatory research team that includes faculty investigators from universities in Alaska and New York.

These research projects rely on collaborative efforts with indigenous communities in Alaska to address environmental health and justice issues. She serves on the steering committee for national campaigns working toward chemicals policy reform, the Safer Chemicals Healthy Families campaign, and the Environmental Justice and Health Policy Alliance. She has worked internationally as a steering committee member and leader within the International POPs (persistent organic pollutants) Elimination Network (IPEN—a network of over 700 environmental health groups) in the negotiation and implementation of a global legally-binding treaty to phase out production of POPs. Miller was instrumental in prompting decisions by the EPA for national phase-outs of certain pesticides, including lindane and endosulfan. She holds a bachelor's degree in biology from Wittenberg University and a master's degree in environmental science (Miami University, Oxford Ohio, 1981). She is the recipient of a 2012 Meritorious Service Award for community service by the Board of Regents of the University of Alaska.

Marie Lynn Miranda*, University of Michigan*

Keynote Speaker: "It Takes a Village: Integrated Methods for Addressing Environmental Health Disparities"

Marie Lynn Miranda, Ph.D., is professor and dean in the School of Natural Resources and Environment and professor in the Department of Pediatrics at the University of Michigan. In addition to her administrative leadership responsibilities, Miranda directs the Children's Environmental Health Initiative (CEHI), which is a research, education, and outreach program committed to fostering environments where all people can prosper. CEHI emphasizes the environmental health sciences and social justice components of risks borne by children in the United States and internationally. CEHI runs geospatial training programs both at the University of Michigan and nationally. CEHI is also leading a significant effort in developing geospatial informatics to support health care delivery and improvements in population health. Miranda maintains a deep and abiding personal and professional interest in social and environmental justice.

Naeema Muhammad*, North Carolina Environmental Justice Network*

Workshop Presenter: "Environmental Health Research and Environmental Injustice: Do No Harm"

Naeema Muhammad has worked on two NIEHS funded grants. The first was Community Health and Environmental Reawakening (CHER) in which she served as a community organizer working with communities dealing with waste from industrial hog operations. In this position she worked with Steve Wing, from the UNC Chapel Hill School of Public Health and was supervised by Gary R. Grant, executive director of the Concerned Citizens of Tillery. She has co-authored publications with Wing regarding community based participatory research (most recently in the New Solutions Health Journal).

Muhammad also worked on the Community Health Effects of Industrial Hog Operations (CHEIHO) project in which she has served as a community organizer, environmental justice educator, interviewer, and participant in qualitative data analysis. Muhammad's past primary responsibilities on the proposed project was to work in collaboration with Amy Lowman, CHEIHO project manager, in all aspects of data collection.

Muhammad made preliminary visits to communities to educate people about the potential health risks of environmental pollutants; discussed research activities and ascertained the feasibility of community residents participating in the proposed study; coordinate community based organizations as liaisons; participated in the recruitment and training of individual participants for the longitudinal health study; and worked with Hale to coordinate environmental monitoring and data collection in participating communities. She also worked with McDonald and Lowman to plan and interpret qualitative interviews.

Muhammad is also a founding member of Black Workers for Justice (BWFJ) in North Carolina. It is a community-based organization that addresses workers' rights issues at the workplace since 1981.

Alexandra Nolen*, University of Texas Medical Branch*

Session Presenter: "Using Health Impact Assessments (HIAs) to Address Environmental Health Disparities and Create Equity in Communities"

Alexandra Nolen, Ph.D., is the director of the Center to Eliminate Health Disparities and the associate director of the Coordinating Center for Global Health. Nolen is also an assistant professor in the Departments of Family Medicine, Preventive Medicine & Community Health, and Internal Medicine, and associate faculty in the Institute for the Medical Humanities. Under her leadership, the Center to Eliminate Health Disparities is engaged in research, training, and community action in four program areas: Health Systems Solutions, Solutions through Social Determinants of Health, Leadership Development for Social Change in Health, and Global Health.

Nolen has experience in coordination of community-based research and interventions as well as policy development on issues of health equity and public health. Her work also encompasses issues of social determinants of health and intersectoral action, health information systems, advocacy strategies for health equity, health systems development, the impact of globalization and trade on health in Africa, environmental justice, and development of training materials on health equity. Nolen served on the Secretariat of the WHO Commission on Social Determinants of Health between 2005 and 2007. Previously she was the coordinator of the Global Equity Gauge Alliance (2002-2004), a South Africa-based non-governmental organization focused on health equity initiatives in Latin America, Africa, and Asia. Under the Division of Health and Human Development at the Pan American Health Organization (1999-2002), she helped to advance research and programming on issues of health equity for the organization.

Nolen serves on the Executive Board of the International Society for Equity and Health; on the National Advisory Committee for the National Association of City and County Health Officials/Centers for Disease Control project *The Roots of Health Inequity*; on the National Advisory Panel for the Department of Housing and Urban Development's Healthy Communities Transformation Initiative, and on the Coordinating Committee for the Houston-Galveston Area Council Sustainability Planning Grant, among other activities.

Liam O'Fallon*, National Institute of Environmental Health Sciences*
Session Moderator: "Addressing 'Research Disparities': Building Connections to Build Capacity"

Since Liam O'Fallon, M.A., joined the Division of Extramural Research and Training in 1999, he has been actively involved in research programs at the NIEHS that involve community participation. O'Fallon is the coordinator for the Partnerships for Environmental Public Health program at NIEHS, which integrates new and existing initiatives that involve communities and scientists working together on contemporary issues in environmental public health research.

He administers the ARRA Program on Community Linked Infrastructure. He coordinates the Community Outreach and Engagement Program (COEP), comprised of 20 Community Outreach and Engagement Cores across the country. He also is a member of the HHS Environmental Justice working group. Before coming to NIEHS in 1999, O'Fallon worked at the U.S. Department of Health and Human Services in the Office of International and Refugee Health where he coordinated an interagency, binational working group addressing environmental health issues along the U.S.-Mexico border.

O'Fallon received his master's degree in Latin American Studies, specializing in medical anthropology and international health, from Tulane University in 1997.

Kenneth Olden*, U.S. EPA National Center for Environmental Assessment*
Session Moderator: "Examining Environmental Determinants of Health and Engaging Communities around EPH Issues Using Geographic and Spatial Analysis"

Ken Olden, Ph.D., Sc.D., L.H.D, joined the National Center for Environmental Assessment in July 2012 with a strong legacy of promoting scientific excellence in environmental health. From 1991-2005, Olden served as the Director of the NIEHS and the National Toxicology Program (NTP). He made history in this role as the first African American to direct one of the National Institutes of Health. In 2005, he returned to his research position as chief of the Metastasis Group in the Laboratory of Molecular Carcinogenesis at the NIEHS, and for academic year 2006-2007, held the position of Yerby Visiting Professor at the Harvard School of Public Health. Most recently, Olden served as the founding dean of the School of Public Health at the Hunter College, City University of New York.

He has published extensively in peer-reviewed literature, chaired or co-chaired numerous national and international meetings, and has been an invited speaker, often a keynote, at more than 200 symposia. Olden has won a long list of honors and awards including the Presidential Distinguished Executive Rank Award, the Presidential Meritorious Executive Rank Award for sustained extraordinary accomplishments, the Toxicology Forum's Distinguished Fellow Award, the HHS Secretary's Distinguished Service Award, the American College of Toxicology's First Distinguished Service Award, and the National Minority Health Leadership Award.

Alone among institute directors, he was awarded three of the most prestigious awards in public health — the Calver Award (2002), the Sedgwick Medal (2004), and the Julius B. Richmond Award (2005). Most recently, he received the Cato T. Laurencin MD, PhD Lifetime Research Award from the National Medical Association Institute, the largest and oldest national organization representing African American physicians and their patients in the United States. He was elected to membership in the Institute of Medicine at the

National Academy of Sciences in 1994 and appointed member of the Visiting Committee for the Harvard University Board of Overseers from 2007-2010.

Joan Packenham*, National Institute of Environmental Health Sciences*

Session lead: "Institutional Review Boards and Community Engaged Research: How can Universities and Community Organizations Work Together to Strengthen the Ethics Review of Community Based Research?"

Joan P. Packenham is the Director of the Office of Human Research Compliance in the Clinical Research Program, Division of Intramural Research and Training at the National Institute of Environmental Health Sciences (NIEHS) / National Institutes of Health (NIH) and she serves as the Vice-Chair for the NIEHS Institutional Review Board. She has a Ph.D. in Experimental Pathology from the University of North Carolina at Chapel Hill, School of Medicine. In 2004, she joined the Division of Intramural Research (DIR) as a Health Scientist Administrator and Senior Staff Scientist in the Office of the NIEHS Scientific Director. Within DIR she serves as a specialist in toxicology, mouse genetics, molecular genetics, and pathology. She has served as the Program Director for the Director's Challenge Program: DIR Program in Integrative Research; a multi-disciplinary program designed to integrate patient-oriented (clinical) or public health research with basic biological and mechanistic studies in an effort to understand how environmental exposures modulate or regulate physiological processes that may lead to human disease.
Dr. Packenham has received several awards, including the NIH Award of Merit and the National 2010 Women of Color in Science Technology Engineering and Mathematics (STEM) award.

Nancy Palate*, California Department of Public Health*

Workshop Presenter: "From Theory to Practice: Successful Communication Approaches that Build Trust"

Nancy Palate is a community health educator for the California Department of Public Health with over 12 years of experience in community outreach, participation, and health education. Palate is part of the program staff for California's Cooperative Agreement with the federal Agency for Toxic Substances and Disease Registry where she works alongside a team of public health scientists who conduct investigations on the potential impact that some hazardous sites may have on the health of some of the communities across the state.

Alice Park*, Community-Campus Partnerships for Health (CCPH)*
Session Presenter: "Addressing 'Research Disparities': Building Connections to Build Capacity"
Moderator and Panelist: "Institutional Review Boards and Community Engaged Research: How can Universities and Community Organizations Work Together to Strengthen the Ethics Review of Community Based Research?"

Alice Park, M.P.H., is the national study coordinator for Community-Campus Partnerships for Health (CCPH). She coordinates the multi-site project "A National Collaborative Study of Community-Based Processes for Research Ethics Review" that examines five community-based research ethics review processes and how they compare with academic Institutional Review Boards. Ms. Park came to CCPH from Washington State University Extension, where she worked as program manager for the King County Food & Fitness Initiative, a project that brings together diverse community partners to co-create long-term, innovative strategies to achieve equitable access to resources and choices that promote health. Previously, she worked as lead project coordinator in the Urban Indian Health Institute division of the Seattle Indian Health Board, a national urban Indian Epidemiology Center.

Ms. Park received her master's in public health from the University of Washington and has a B.S. in biochemistry from the University of California, San Diego. Her previous research experience has been on breast cancer, children with chronic conditions, and maternal and child health. She has worked at the Center for Health Studies at Group Health Cooperative, where she served as project manager for a multi-site Breast Cancer Surveillance grant. She worked as information system specialist for participants of the Health Disparities Diabetes Collaborative in the Pacific West Cluster and as epidemiologist with Public Health-Seattle & King County within the Epidemiology, Planning and Evaluation Unit. In her spare time, she serves on the Board of Directors for the Community Coalition for Environmental Justice, an organization working to achieve environmental and economic justice in low income communities and communities of color. She also works with the Program for Early Parenthood Support, leading twelve week-long new parent support groups.

Bryan Parras*, Texas Environmental Justice Advocacy Services (T.E.J.A.S.)*
Workshop Presenter: "Enhancing Engagement in Community Research with Theatre of the Oppressed"

Bryan Parras is a Houston filmmaker who specializes in documentation of environmental and social justice movement stories. As organizer / media coordinator of *T.E.J.A.S.* (Texas Environmental Justice Advocacy Services), Parras has recently worked on location throughout the South and Southwest chronicling events in greater New Orleans and rural Louisiana after hurricanes Katrina and Rita, environmental justice and immigrant rights actions in Houston's Manchester neighborhood and Taylor Texas, and the huge groundswell of support for unjustly incarcerated African-American youth in Jena, La. Parras was named a Gulf Coast Fund spokesperson for the state of Texas, was awarded a Gulf Fund Transformational Fellowship (2008 – 2010), serves on the board of the Environmental Support Center and the Gulf Fund, and works actively as a regional correspondent with Bridge the Gulf.

Parras is a Theatre of the Oppressed (TO) practitioner and also specializes in videography/still photography documentation of the TO process, and video-photo environmental journalism. He has created video TO

training materials for the NIEHS and collaborated with numerous regional environmental justice organizations and the U.S. Environmental Protection Agency to document conferences, workshops, and regulatory hearings. He has also facilitated TO workshops at the Peoples' Heath Movement International Peoples' Health University, NIEHS Partnerships for Environmental Public Health, the IMPACT Ports & Good Movement Project, and the Pedagogy & Theatre of the Oppressed International Conference.

In 2006, Parras collaborated with the NIEHS Center in Environmental Toxicology at University of Texas Medical Branch/Galveston on an environmental health risk survey of storm impact zones in Louisiana, producing a DVD entitled "After the Wind, Child, after the Water's Gone." This project was also documented in the Journal of Health Care for the Poor & Underserved / Meharry College of Medicine in an article entitled, "Hurricane Readiness & Environmental Risks on the Bayous – An NIEHS Community-Based Pilot Project in South Terrebonne-Lafourche Parishes, Louisiana," which Parras researched and co-authored. In collaboration with Mothers for Clean Air/Houston, he co-directed and edited a youth-driven video-voice project about air quality in east Houston entitled, "Wish You Were Here: Stories from the East Side" (2007).

Parras holds a B.S. in psychology and philosophy from the University of Texas at Austin. He co-produces a weekly radio program – Nuestra Palabra: Latino Writers Having Their Say – for Pacifica Network station, KPFT (90.1 FM). He has presented with John Sullivan at numerous U.S. EPA Community Involvement Conferences, the Alaska Environmental Forum, the NIEHS PEPH, and the Pedagogy & Theatre of the Oppressed annual conference (Chapel Hill NC 2006, Austin TX 2010). He is also a founding member of the nationally recognized Librotraficantes, a group of Latino writers and social justice activists who have come together to resist the efforts of the Arizona State Board of Education to discontinue the award-winning Mexican American Studies program in the Tucson Unified School District and ban the use of specifically identified books within the district curriculum.

Kristi Pettibone*, National Institute of Environmental Health Sciences*
Workshop Presenter: "Evaluating PEPH Activities"

Kristianna Pettibone, Ph.D., has more than 10 years of experience managing, directing, and guiding public health policy research and evaluation projects. She holds a Ph.D. in policy sciences (health policy concentration) from the University of Maryland, Baltimore County. Prior to joining NIEHS, she served as director of the MayaTech Corporation's Center for Community Prevention and Treatment Research. She has worked on evaluations of several federal grant portfolios including CDC's Injury Control Research Centers and motor vehicle injuries and NIEHS' endocrine disruptor, nanotechnology health and safety, and neurodegeneration portfolios.

Ana Pomales*, Agency for Toxic Substances and Disease Registry (ATSDR)*
Workshop Presenter: "Community Outreach and Collaboration with Philadelphia Inner City Neighborhoods Impacted by Former Lead Smelters"

Ana Pomales, M.S., joined the Agency for Toxic Substances and Disease Registry in Philadelphia in 2006 as an environmental health scientist. She works with state and other federal agencies to evaluate environmental health issues or other environmental hazards associated with hazardous waste sites and facilities. She is

responsible for communicating the findings of these evaluations to various stakeholders including state agencies and communities. Ana has a B.S. in natural sciences and an M.S. in environmental health, both from the University of Puerto Rico.

Molly Puente*, National Institute of Environmental Health Sciences*
Session Lead: "Challenges and Opportunities for Supporting Community Based Research to Address Environmental Health Disparities and Environmental Justice"

Molly Puente, Ph.D., has been a grants management specialist with the NIEHS since May of 2011. She is the lead specialist for the Children's Environmental Health and Disease Prevention Research Centers, the Research to Action program, the Human Health Effects of Climate Change program, and the Puberty Studies in the Breast Cancer and the Environment Research Program. Before coming to NIEHS, Puente was a grants management specialist for the National Center for Research Resources (NCRR) for two years, and a Presidential Management Fellow at NIH for two years, where she rotated through a variety of grants management offices. Puente has a Ph.D. in entomology and a master's in public administration from North Carolina State University and a B.S. in biology from Duke University.

Sara Quandt*, Wake Forest School of Medicine*
Session Presenter: "Effectively Reaching Underserved Populations: Lessons Learned on Culturally Appropriate Communication Strategies and Tools"

Sara A. Quandt, Ph.D., is professor of epidemiology and prevention in the Division of Public Health Sciences, Wake Forest School of Medicine, with appointments in Family and Community Medicine and the Translational Science Institute. She received her doctoral degree in anthropology and human nutrition at Michigan State University. Quandt focuses on issues of rural and minority health disparities, using a community-based participatory framework. Her research interests include occupational and environmental health of immigrant workers, nutrition and chronic disease management among older adults, and social justice approaches to improving the local food environment. She is the author of over 290 papers and has edited several monographs, most recently, Latino Farmworkers in the Eastern United States: Health, Safety and Justice (with Thomas A. Arcury, Springer, 2009).

Nishadi Rajapakse*, National Institute of Minority Health Disparities*
Session Lead: "Examining Environmental Determinants of Health and Engaging Communities around EPH Issues Using Geographic and Spatial Analysis"

Nishadi Rajapakse, Ph.D., is a program director at the National Institute on Minority Health and Health Disparities (NIMHD) and directs a research portfolio of health disparities initiatives. She directs the Basic and Applied Biomedical Research (RO1) program and Environmental Health Disparities Centers of Excellence initiatives (P20 and P60). She is a member of several trans-USG collaborative efforts, including the President's Task Force on Environmental Health Risks and Safety Risks to Children, the focus of which is the reduction of asthma disparities across racial and ethnic populations.

Rajapakse received her Ph.D. in molecular medicine & translational sciences from Wake Forest University (2004). Her research focused on traumatic brain injury in adults and newborn infants and developing therapies to mitigate mortality. She completed her postdoctoral fellowship in genetic epidemiology at NIEHS where she examined genetic and environmental risk factors in the development of cardiovascular disease and rheumatoid arthritis. Rajapakse also holds a master's degree in clinical research from Duke University. She has published more than 25 peer-reviewed articles in biomedical journals and serves as a guest editor for the Journal of Health Care for the Poor and Underserved.

Monica Ramirez-Andreotta*, Northeastern University*

Session Presenter: "Effectively Reaching Underserved Populations: Lessons Learned on Culturally Appropriate Communication Strategies and Tools"

Monica Ramirez-Andreotta, Ph.D., received a Ph.D. in environmental science from the University of Arizona (UA) that focused on integrating the fundamentals of environmental science, human exposure assessment, and developing participatory approaches to research in order to achieve environmental health justice. She also has a Master of Public Administration in environmental science and policy from Columbia University, and her undergraduate degrees are in ecology & evolutionary biology and photography. Her dissertation was entitled, "Designing a Comprehensive, Integrated Approach for Environmental Research Translation: The *Gardenroots* Project to Empower Communities Neighboring Contamination," where she conducted a controlled greenhouse study in parallel with a co-created citizen science program to characterize the uptake of arsenic by homegrown vegetables near a Superfund site in Arizona. To complete her doctoral degree, Monica received a: Superfund Research Program Training Fellowship, UA Diversity Fellowship, NASA Space Grant Graduate Fellowship, National Action Council for Minorities in Engineering Scholarship, and was a UA Water Sustainability Program Graduate Fellow. In 2011, she was named the 14th recipient of the National Institute of Environmental Health Sciences' Karen Wetterhahn Memorial Award.

She is the former research translation coordinator for the UA Superfund Research Program, and has extensive experience transferring information and technology from researchers into the hands of stakeholders at all levels. Some of her activities included building linkages and partnerships with government agencies and community advisory boards, creating innovative bilingual communication tools, and conducting informal science learning experiences for people of all ages. Additionally, she worked at the Flandrau Science Center and Center for Creative Photography. Recently, she was an Arizona Assurance Mentor, ensuring that in-state, first generation college students stay in school and succeed, a guest speaker for the Woman In Science and Engineering's Expanding Your Horizons Conferences, and sat on the Pima County Department of Environmental Quality's Advisory Council. Currently, she is a Postdoctoral Research Fellow at the Social Science Environmental Health Research Institute at Northeastern University.

Damaris Reyes*, Good Old Lower East Side*
Workshop Presenter: "Using Research Data to Educate, Advocate, and Organize: Community-Academic Collaboration as a Way to Enhance EJ Campaigns"

Damaris Reyes is the executive director of Good Old Lower East Side (GOLES) and has been with the organization since 2000. She is a lifelong resident of the Lower East Side and has been involved in community organizing and housing issues both locally and nationally for more than a decade. Reyes currently sits on the board of the Association for Neighborhood Housing and Development, the Center for Neighborhood Leadership advisory board, and the Land Use, Zoning & Housing Committee of Manhattan Community Board 3.

She is the recipient of the 2006 New York Women's Foundation's Helen La Kelly Hunt Neighborhood Leadership Award, the 2008 Urban Agenda Visionary Award, and the proud winner of the 2009 Jane Jacobs Medal from the Rockefeller Foundation and the Municipal Arts Society, given to individuals whose work creates new ways of seeing and understanding our City, challenges traditional assumptions and creatively uses the urban environment to make New York City a place of hope and expectation. Along with Watkins, she is Co-PI of the GOLES Environmental Justice Collaborative and the GoLES Healthy Aging Program. She is also the chair of the Community Steering Committee of the NIMHD-EPA funded Environmental Health Core at Weill Cornell Medical College.

John Ruffin*, National Institute of Minority Health Disparities*
Welcome Speaker

John Ruffin, Ph.D., is the director of the National Institute on Minority Health and Health Disparities (NIMHD). He oversees the NIMHD budget of approximately $276 million. In addition, he provides leadership for the minority health and health disparities research activities of the National Institutes of Health (NIH), which constitutes an annual budget of approximately $2.8 billion.

He is a well-respected leader and visionary in the field of minority health and health disparities. As an academician and a scientist, he has devoted his professional career to improving the health status of racial and ethnic minorities and other underserved populations. He has an impressive track record of developing and supporting programs to increase the cadre of minority scientists, physicians, and other health professionals, as well as attract a diverse group of researchers to the health disparities field. His success has been due in large part to his ability to motivate others, and his expertise in strategic planning, administration, and the development of numerous collaborative partnerships. He has led the transformation of the NIH minority health and health disparities research agenda from a programmatic concept to an institutional reality with the transition of the administratively-established NIH Office of Minority Programs to the legislative creation of the Office of Research on Minority Health, the National Center on Minority Health and Health Disparities, and now the National Institute on Minority Health and Health Disparities.

As the NIH federal official for minority health disparities research, Ruffin has planned and brought to fruition the largest biomedical research program in the nation aimed at efforts to eliminate health disparities. The hallmark of his approach is to foster and expand strategic partnerships in throughout the federal government, state agencies, community organizations, academic institutions, the private sector, as well as

international governments and non-governmental organizations. Under his leadership, the NIH convened the first "Science of Eliminating Health Disparities Summit" in December 2008 to showcase the work, progress, and challenges of the NIH and its many federal and non-federal government partners involved in minority health and health disparities research.

Ruffin has a stellar record of professional achievement including an honorary doctor of science degree from Spelman College, Tuskegee University, University of Massachusetts in Boston, North Carolina State University, Morehouse School of Medicine, Meharry Medical College, Tulane University and Dillard University. He has been recognized by various professional, non-profit, and advocacy organizations. He has also received the Martin Luther King Jr., Legacy Award for National Service, the Department of Health and Human Services' Special Recognition Award; and the U.S. Presidential Merit Award. Ruffin received a B.S. in biology from Dillard University, a M.S. in biology from Atlanta University, a Ph.D. in systematic and developmental biology from Kansas State University, and completed post-doctoral studies in biology at Harvard University.

Patrick Ryan*, Cincinnati Children's Hospital Medical Center*
Session Presenter: "Research to Action: Translational Research to Address Health Disparities and Environmental Inequities"

Patrick H. Ryan, Ph.D., is an assistant professor of pediatrics and environmental health at Cincinnati Children's Hospital Medical Center and the University of Cincinnati. Ryan is an environmental epidemiologist with research interests in the fields of air pollution epidemiology and exposure assessment. He is the PI on a number of NIH grants related to the study of air pollution and neurobehavioral development in childhood, the assessment of personal exposure to ultrafine particles in asthmatic children, and the impact of traffic-related air pollution at schools. Other research interests include studies of indoor pollutants and mold, environmental exposure to asbestos in Libby, Mont., and the elemental composition of $PM_{2.5}$.

Madeleine Kangsen Scammell*, Boston University School of Public Health*
Workshop Presenter: "Environmental Health Research and Environmental Injustice: Do No Harm"

Madeleine Kangsen Scammell, D.Sc., is an assistant professor of Environmental Health at Boston University School of Public Health where she also directs Community Engagement and Research Translation Cores of the Boston University Superfund Research Program. Her research interests include developing new analytic methods to study environmental health and cumulative burden, incorporating qualitative social sciences. Scammell serves on the Board of Health in the City of Chelsea, Mass., and is a member of the board of directors of the Science & Environmental Health Network.

Laurel Schaider*, Harvard School of Public Health*
Session Presenter: "Research to Action: Translational Research to Address Health Disparities and Environmental Inequities"

Laurel Schaider, Ph.D., is a research associate at the Harvard School of Public Health, where she is the lead investigator of an R21 Research to Action study of mercury exposure in recreational and subsistence fishermen in rural Oklahoma. She has conducted studies of metal fate and transport at the nearby Tar Creek Superfund Site. She is also a research scientist at Silent Spring Institute in Newton, Mass., where she leads the Institute's research on emerging contaminants in groundwater and drinking water on Cape Cod. Her research interests lie in understanding the fate and transport of contaminants in the environment and links to human exposure. Schaider earned her M.S. and Ph.D. in environmental engineering at the University of California, Berkeley, and a bachelor's degree in environmental engineering science from MIT. She has taught ecology and environmental engineering courses at MIT and Northeastern University.

Amy J. Schulz*, University of Michigan*
Session Presenter: "Cumulative Exposures: The Role of Epidemiology in Elucidating Environmental Contributions to Health Disparities"
Workshop Presenter: "Community Training to Inform Policy Makers about Environmental Exposures and Health"

Amy J. Schulz, Ph.D., is professor in the Department of Health Behavior and Health Education at the University of Michigan School of Public Health (UMSPH). She was a founding member of the Detroit Community-Academic Urban Research Center (Detroit URC) and has been engaged in ongoing etiologic and intervention research in Detroit, examining effects of physical and social environmental characteristics on cardiovascular disease for over a decade. She has considerable experience working with and facilitating community-based participatory research (CBPR) partnerships and is a leading contributor to the literature on engaging community, academic, and public health practice partners in participatory research and intervention efforts. Schulz has served as the principal investigator for the Healthy Environments Partnership since 2000, with funding from NIEHS, NIMHD, and the Aetna Foundation. In that capacity, she has conducted etiologic research on the effects of air pollution on blood pressure in Detroit, including the role of obesity, psychosocial stress, and antioxidant dietary intakes as effect modifiers of relationships between exposure to air pollutants and blood pressure. Schulz has worked closely with interdisciplinary teams of public health professionals and academic researchers to integrate research findings into the development and implementation of community-based interventions to address social and physical environmental determinants of health.

Drew Serres*, New Kensington Community Development Corporation*
Workshop Presenter: "Community Outreach and Collaboration with Philadelphia Inner City Neighborhoods Impacted by Former Lead Smelters"

Drew Serres is a community organizer focused on intersectional social justice efforts. Serres currently serves as an AmeriCorps VISTA (Volunteer in Service to America) at New Kensington Community Development

Corporation in Philadelphia, where he supports neighborhood empowerment and engagement initiatives. Serres previously worked as the branches coordinator for the Northwest Institute for Community Enrichment to facilitate trainings, local team growth, and collaborative outreach. Serres also manages OrganizingChange.org, which is a space dedicated to impactful skill-building, dismantling injustice, and strategic organizing for change makers.

David Shuffler, Jr., *Youth Ministries for Peace and Justice*
Workshop Presenter: "Using Research Data to Educate, Advocate, and Organize: Community-Academic Collaboration as a Way to Enhance EJ Campaigns"

David Shuffler, Jr. is only the second executive director in the history of Youth Ministries for Peace and Justice (YMPJ). YMPJ was founded in 1994 in response to the lack of youth development organizations in the Bronx River/Soundview Neighborhoods. YMPJ's mission is to work with community stakeholders to transform the systems and infrastructure that are currently in place that impact on this community. Shuffler was born, raised, and continues to live in this very neighborhood.

Shuffler has many years of experience as a trainer of community organizing and housing policy & development and as a trainer of grassroots community organizing campaigns and other related organizing topics. Shuffler continues to be a mover and shaker influencing varying levels of government on local issues. Over his career Shuffler has been able to harness over $50 million to support community organizing across New York City.

Kenneth Smith*, National Association of County and City Health Officials*
Session Presenter: "Using Health Impact Assessments (HIAs) to Address Environmental Health Disparities and Create Equity in Communities"

Kenneth D. Smith, Ph.D., received his doctorate from the Johns Hopkins University Bloomberg School of Public Health, where he studied population economics. He has over 10 years of experience as a researcher, with expertise in health care financing, applied econometric methods, program evaluation and design, and health professional workforce issues. Smith provides technical assistance to National Association of County and City Health Officials (NACCHO) members on land-use and transportation planning and chronic disease prevention and management. He is the principal investigator for a CDC cooperative agreement to implement help promote and implement Health in All Policies through a series of regional training academies, and he is the project director for the NACCHO-Pew Health Impact Assessment Mentorship Program. Through one-on-one consultations, on-site and webinar trainings, facilitated peer-to-peer mentorship, and policy brief development, Smith helps municipalities across the country build healthier communities. Smith also supports NACCHO's government affairs staff in policy development and advocacy around chronic disease prevention and healthy community design.

Doug Stevens*, Salish Kootenai College*

Session Presenter: "Addressing 'Research Disparities': Building Connections to Build Capacity"

Doug Stevens, Ph.D., has been at Salish Kootenai College (SKC) since 2000. He holds a Ph.D. in toxicology from Washington State University (1989). His thesis research involved the study of cyanobacterial neurotoxins. Stevens is head of SKC's Department of Life Sciences, and director of the SKC Environmental Chemistry Lab (SKC-ECL). He has been responsible for the development of SKC's BS (Life Sciences) - the first fully accredited, molecular-based, four-year science program offered at a tribal college. The degree program offers two tracks – cellular biology and environmental health, and undergraduate research forms an integral part of the program. The focus of the undergraduate student research at SKC-ECL has been the movement of heavy metals (Hg, Se, and As) through the food web and into traditional diets. The ultimate purpose of this research is to evaluate the benefits and risks that may be posed by these foods. In 2011, Stevens was awarded the SACNAS Mentor of the Year for Community and Tribal Colleges.

Wilma Subra*, Subra Company*

Session Presenter: "Conflicts over Research that Identifies Community Impacts of Environmental Exposures"

Wilma Subra, M.S., is president of Subra Company and provided technical assistance to citizens, across the United States and some foreign countries, concerned with their environment and human health, by combining technical research and evaluation. This information is then presented to community members so that strategies may be developed to address their local struggles.

She has a B.S. and M.S. in microbiology and chemistry from the University of Southwestern Louisiana (University of Louisiana at Lafayette). She has over 45 years of experience in sampling and chemical and microbiologic analysis of ground water and surface water resources, monitoring impacts on water resources, monitoring the environmental impacts of oil and gas drilling and production activities, oil and gas waste treatment and disposal practices and associated environmental and human health impacts, environmental and human health impacts of injection well operations, analysis of chemical components in drilling fluids, pit construction and resulting contamination from pit operations, and environmental and human health impacts of shale development.

Subra's current work is focused on the environmental impacts of various aspects of shale development, the human health impacts associated with various specific units and activities of shale development, the development of appropriate parameters for monitoring ground water and surface water resources to detect impacts of shale development, and the development of guidelines for the regulation of state programs dealing with shale gas development.

Utilizing the information gained from community involvement, the needs identified are translated into policy changes at the state and federal level through service on multi-stake holder committees. She has completed a seven year term as Vice-Chair of the Environmental Protection Agency National Advisory Council for Environmental Policy and Technology (NACEPT), a five year term on the National Advisory Committee of the U. S. Representative to the Commission for Environmental Cooperation and a six year term on the EPA National Environmental Justice Advisory Council (NEJAC) where she served as a member of

the Cumulative Risk and Impacts Working Group of the NEJAC Council, and chaired the NEJAC Gulf Coast Hurricanes Work Group.

In 2011, she chaired the Environmental Protection Agency Technical Workshop for the Hydraulic Fracturing Study on Chemical and Analytical Methods. She participated in the EPA Technical Roundtables on Water Acquisition, Chemical Mixing, and Well Injection in November 2012. She co-chaired the EPA Analytical Chemical Methods Workshop in February 2013.

She received the MacArthur Fellowship "Genius" Award from the MacArthur Foundation in 1999 for helping ordinary citizens understand, cope with and combat environmental issues in their communities. She also received the 2011 Domestic Human Rights Award from the Global Exchange for her dedication to human rights issues.

John Sullivan*, University of Texas Medical Branch, Galveston*
Session Moderator: "Conflicts over Research that Identifies Community Impacts of Environmental Exposures"
Workshop Presenter: "Enhancing Engagement in Community Research with Theatre of the Oppressed"

John Sullivan currently directs the Public Forum & Toxics Assistance Division of the University of Texas Medical Branch NIEHS Center in Environmental Toxicology Community Outreach and Education Core. He uses Augusto Boal's image and Forum Theater techniques to teach toxicological concepts, create public dialogues on environmental risk and the health and social effects of toxic exposures, and develop bidirectional capacity for researchers and community members to effectively collaborate in Community Based Participatory Research. He also coordinates activities of the Community Science Workshop, a facet of University of Texas Medical Branch's Institute for Translational Science/CTSA Center for Community Engagement.

As an artist, Sullivan has worked as a writer, playwright, director, poet, performance artist, and arts educator. He is the recipient of numerous writing awards and honors including the Jack Kerouac Literary Prize, The Writers Voice: New Voices of the West Prize, two fellowships from the Arizona Commission on the Arts, a WESTAF Fellowship, and was the featured playwright at Denver's Summer Play Festival.

Myra Tetteh*, University of Michigan*
Workshop Presenter: "Community Training to Inform Policy Makers about Environmental Exposures and Health"

Myra Marie Tetteh is an alumna of the University of Michigan with a Master of Public Policy. Currently, Ms. Tetteh works for the University of Michigan as a Project Coordinator for the Community Outreach and Education Core (COEC) of the Environmental Health Science Lifestage Exposure and Adult Disease (EHS LEAD) Center and as the Project Coordinator for the Community Engagement and Outreach Core (CEOC) for the Center for Integrative Approaches to Health Disparities (CIAHD). In addition to her responsibilities for the School of Public Health, Ms. Tetteh has served as the Detroit Complete Streets Coalition Coordinator for the Detroit Food and Fitness Collaborative since May 2010. In this role, she facilitates coalition meetings

between over 15 representative organizations, coordinates events to educate the community and policy makers on complete streets, participates in the writing of a complete streets ordinance, and communicates regularly with coalition members and policymakers. Moreover, Ms. Tetteh serves as a board member for Cherish Our Youth, Inc. a non-profit organization that works with youth aging out of foster care on education, health, and career development. Lastly, Ms. Tetteh is an active member of her church, Grace Community Church of Detroit. In the future, Ms. Tetteh hopes to have a PhD in Health Behavior Health Education Urban Planning and work with municipalities to redevelop their cities with population health as a priority.

Jessica Tovar*, Long Beach Alliance for Children with Asthma*

Workshop Presenter: "Community-Academic Engagement through Community Monitoring by Neighborhood Assessment Teams ('A' Teams) and Production of CBPR Manual"

Jessica Tovar is the new project manager for the Long Beach Alliance for Children with Asthma. She has done extensive work on higher education outreach for youth of color. In addition, Tovar has worked as a maternal child health coordinator for MOMS Orange County, where she provided health education to at-risk underprivileged pregnant mothers and their babies in monthly home visits. Tovar obtained her master's in social welfare from UCLA, and she is passionate about the work the Long Beach Alliance for Children with Asthma does with the community.

Jose Antonio Tovar*, Farmworker Association of Florida*

Session Presenter: "Innovative Tools and Technologies for Environmental Public Health Research"

For almost 10 years Jose Antonio Tovar, M.A., worked as a journalist in Latin America; this experience brought him back to academia in order to improve the conditions of poverty he encountered all the time. As social scientist, Tovar's first two cases could not have been more different: in the first case he worked in a HIV prevention program with sex workers in Cancun, Mexico, and in the second case he worked to improve the nutrition of displaced children in Tegucigalpa, Honduras. For the last ten years Tovar has been able to work with low income populations in rural and urban Florida and urban Texas, looking at their health challenges and their access to health care services. As a medical anthropology Ph.D. student Jose worked with the University of Florida's College of Nursing, evaluating access to the Florida Department of Health STI clinics; with UF's Bureau of Business and Economic Research evaluating access to health care in Florida and Houston, Texas; and finally with the University of South Florida's College of Medicine to test the feasibility, acceptability, and preliminary effectiveness of a peer-network intervention among adolescent males and females and their friendship networks. However, it was only when he began working at the Farmworker Association of Florida in 2006 that Jose discovered the research model to which he is now committed. The Community-Based Participatory Research model at the Farmworker Association of Florida has partnered both with the Florida Prevention Research Center at the University of South Florida's College of Public Health and also with Emory University's School of Nursing. In the first project, Tovar worked as the project director of the Partnership for Citrus Workers Health preventing eye injuries among citrus harvesters; and in the second one as field coordinator insuring the scientific collection and dissemination of data related to the effects of agricultural work on women and their children.

Carla Truax, *University of Southern California*
Workshop Presenter: "Community-Academic Engagement through Community Monitoring by Neighborhood Assessment Teams ('A' Teams) and Production of CBPR Manual"

Carla Truax, M.P.H., serves as the program manager for the Community Outreach and Engagement Program of the Southern California Environmental Health Sciences Center (SCEHSC) at the Keck School of Medicine at University of Southern California. Her outreach activities include giving presentations and leading workshops for community organizations, training residents to carry out community-based research on air pollution and traffic, and creating educational materials on Center research results. She also serves as the coordinator for the Trade, Health, and Environment Impact Project, a community-academic collaborative working to reduce the health and community impacts from ports and goods movement. Truax has a background in environmental studies and public health, earning her B.A. from Hamline University in 2005 and completing her master's degree in public health at the University of Southern California in 2011.

Eric Wat, *Special Service for Groups*
Presenter: "Institutional Review Boards and Community Engaged Research: How can Universities and Community Organizations Work Together to Strengthen the Ethics Review of Community Based Research?"

Eric C. Wat is the director of the Research & Evaluation (R&E) Unit at Special Service for Groups (SSG), a nonprofit organization based primarily in Los Angeles. The R&E unit provides program evaluation services and technical assistance to SSG programs and their community partners. In addition, the R&E unit trains community members in conducting participatory action research to address issues that are most important to them and engage them throughout all phases of the research process, from design to dissemination and data use. Wat also administers the SSG-IRB, which was registered with DHHS OHRP since 2004. It is one of a handful of community-based IRBs that aim to empower community partners in research collaboration.

Beverly-Xaviera Watkins, *Weill Cornell Medical College*
Session Presenter: "Examining Environmental Determinants of Health and Engaging Communities around EPH Issues Using Geographic and Spatial Analysis"
Workshop Presenter: "Using Research Data to Educate, Advocate, and Organize: Community-Academic Collaboration as a Way to Enhance EJ Campaigns"

Beverly-Xaviera Watkins is the director/principal investigator of the NIMHD/EPA-funded Environmental Health Core of the Center for Excellence in Health Disparities Research and Community Engagement at Weill Cornell Medical College. She is also the director/principal investigator of two community-academic research partnerships: the NIEHS-funded Good Old Lower East Side, GoLES, Environmental Justice Collaborative and the Fan Fox and Leslie R Samuels Foundation-funded GoLES Healthy Aging Program. As a community-based research scientist and health care provider with a 14-year track record in community-based programs and projects, Watkins has worked extensively throughout NYC communities of color, serving as a consultant to labor unions and community-based environmental, housing, and social justice organizations in both paid and voluntary positions.

LaToria Whitehead*, Centers for Disease Control and Prevention (CDC)*
Session Moderator: "Using Health Impact Assessments (HIAs) to Address Environmental Health Disparities and Create Equity in Communities"

LaToria Whitehead, Ph.D., currently serves as the Environmental Justice Officer, of the Division of Emergency and Environmental Health Services at CDC's National Center for Environmental Health, and an Adjunct Professor in the Political Science Department at Spelman College. She received her B.S.H. and M.P.H. degrees in health science and public health from the University of North Florida and Mercer University School of Medicine, and her Ph.D. in Political Science from Clark Atlanta University. In her prior position at CDC, as a Public Health Advisor, Dr. Whitehead was instrumental in collaborating state programs and environmental justice organizations, to reduce and mitigate, environmental health disparities experienced by underserved populations. From her dissertation work, *"The Influence of Non-Governmental Organizations on Public Policy: A Case Study on Childhood Lead Poisoning in Savannah, Georgia"*, she created a model that addresses environmental justice issues from a political, social, and economics lens. She is the lead author and co-author on several environmental justice publications, and was honored in 2013 as a visionary and innovative leader in Science, Technology, Engineering, and Mathematics (STEM) field. Dr. Whitehead's research interests include environmental justice, public/urban policy, theory and methods, and American government. She has one 11- year-old son, Kelly Thompson II.

Donele Wilkins*, University of Michigan*
Workshop Presenter: "Community Training to Inform Policy Makers about Environmental Exposures and Health"

Leader, visionary, results oriented, Donele Wilkins has demonstrated servant leadership in her hometown Detroit for nearly 20 years. First, by leading the local movement for environmental justice on the front lines and secondarily, expanding to achieving true sustainability for all. Her leadership style has motivated many to take their place in a truly transforming movement. Her achievements include the participation in the development and adoption of an Environmental Justice Policy in the state of Michigan, conceived and launched the first Green Jobs Training Program in the city. She has been an advocate for citizen involvement in Brownfield Redevelopment as well as other environmental policy, placing environmental stewardship on the agenda of many community leaders and decision makers. Wilkins is noted for inspiring young people to take a lead in their communities. As the founder of the Green Door Initiative, Wilkins plans to take, not only the city of Detroit to the next level of environmental stewardship, but the nation. The Green Door Initiative stands out as a national model for sustainable living through civic engagement for everyone!

Sacoby Wilson*, University of Maryland*
Session Presenter: "Addressing 'Research Disparities': Building Connections to Build Capacity"

Sacoby M. Wilson, Ph.D., is director of the Program on Community Engagement, Environmental Justice, and Health (CEEJH) at the University of Maryland-College Park. He is also Co-PI of the EPA/NIMHD funded Environmental Health (EH) Core for the University of South Carolina's P30-funded Coordinating Center of Excellence in the Social Promotion of Health Equity through Research, Education, and Community Engagement (CCE-SPHERE) led by Saundra Glover. The EH Core is focused on the use of Geographic

Information Systems (GIS), community-based participatory research (CBPR), community-university partnerships, and the environmental justice framework to study and address differential burden and exposure to pollution and related environmental health disparities in the state of South Carolina. The EH Core is using GIS, block assessment methodology, and spatial statistics to assess: 1) the burden of environmental hazards including Superfund sites, brownfields, landfills, air emitters, and Toxic Release Inventory (TRI) facilities; and 2) distribution of and access to salutogenic and pathogenic infrastructure at the neighborhood level including fast food restaurants, supermarkets, banks, schools, pawn shops, medical resources, and other infrastructure. In addition, the EH Core is using Photovoice, environmental health surveys, National Air Toxics Assessment (NATA) data, and South Carolina SEER data to assess and compare perception of cancer risks with actual cancer risks in the state with a focus on Orangeburg and Charleston, South Carolina. As part of dissemination, capacity-building, and empowerment efforts, the EH Core has developed the EJ Radar, a public participatory GIS (PPGIS) tool that impacted residents can use to map environmental health data in the state of South Carolina. This tool will allow residents to assess disparities in burden, exposure, and infrastructure at the state level and residents and policymakers will be able to use the maps to inform environmental decision-making at the state level.

Steven Wing*, University of North Carolina, Chapel Hill*
Session Lead: "Conflicts over Research that Identifies Community Impacts of Environmental Exposures"
Workshop Presenter: "Environmental Health Research and Environmental Injustice: Do No Harm"

Steve Wing received his Ph.D. in epidemiology from the University of North Carolina, Chapel Hill, where he is an associate professor. His research and teaching are primarily in the areas of occupational and environmental health. Recent work has focused on environmental injustice and health effects of ionizing radiation, industrial animal production, sewage sludge, and landfills. He has collaborated on health and exposure studies with communities and workers impacted by threats to environmental and occupational health.

Sara Wylie*, Northeastern University*
Session Presenter: "Innovative Tools and Technologies for Environmental Public Health Research"

Sara Wylie, Ph.D., seeks to develop new modes of studying and intervening in large-scale social issues such endocrine disrupting chemicals through a fusion of social scientific, scientific and art/design practices. Wylie is the director of Toxics and Health Research for Public Laboratory for Open Technology and Science, and has a joint appointment between Health Sciences and the Sociology/Anthropology program as part of Northeastern's new Institute of Social Science and Environmental Health Research. She completed her Ph.D. in MIT's History, Anthropology, Science, Technology and Society (HASTS) Program in 2011.

Her dissertation, entitled "Corporate Bodies and Chemical Bonds: an STS analysis of the American Natural Gas Industry," involved ethnographic study with The Endocrine Disruption Exchange, a non-profit founded by Theo Colborn, lead author of Our Stolen Future, whose independent research on chemicals used in natural gas extraction influenced national discussions of hydraulic fracturing. Ethnographic study with this organization and communities experiencing natural gas extraction led to her development of web-based

tools to help communities and experts across the country study and hold extractive industries accountable for their social and environmental impacts. This project called ExtrAct was developed in collaboration with artist and technologist Chris Csikszentmihalyi in MIT's Center for Civic Media. Following her interest in digital media, Wylie taught classes on practicing social science critique of science and technology through art and design and co-lead a research group with Jeff Warren on Environmental Justice in Rhode Island School of Design's (RISD), Digital+Media Department. In 2011 Wylie co-founded a non-profit dedicated to developing open source, Do-It-Yourself tools for community based environmental health research, Public Laboratory for Open Technology and Science (PLOTS-publiclaboratory.org). PLOTS won a Knight Foundation's News Challenge Grant in the summer of 2011.

Background Materials, Session Resources, and Recommendations

Background Materials 122

EPA, HHS, and NIEHS EJ 122

Capacity Building 122

Community Engaged Research 123

Environmental Health Disparities and Environmental Justice 125

Theater of the Oppressed 127

Native American Environmental Justice 129

Session Resources 133

Concurrent Sessions #1 133

Research to Action: Translational Research to Address Health Disparities and Environmental Inequities 133

Innovative Tools and Technologies for Environmental Public Health Research 133

Effectively Reaching Underserved Populations: Lessons Learned on Culturally Appropriate Communication Strategies and Tools 134

Addressing 'Research Disparities': Building Connections to Build Capacity 134

Concurrent Sessions #2 134

Examining Environmental Determinants of Health and Engaging Communities around EPH Issues Using Geographic and Spatial Analysis 134

Inequities Persist: Environmental Justice from a Native American Perspective 135

Community Experience of Contaminated Communities: Contributions from the Social Sciences 135

Day 1 General Session 138

Institutional Review Boards and Community Engaged Research: How Can Universities and Community Organizations Work Together to Strengthen the Ethics Review of Community Based Research? 138

Concurrent Sessions #3 139

Cumulative Exposures: The Role of Epidemiology in Elucidating Environmental Contributions to Health Disparities 139

Conflicts over Research that Identifies Community Impacts of Environmental Exposures 139

Recommendations from Previous Meetings 142

Background Materials

EPA, HHS, and NIEHS EJ

EPA's Plan EJ 2014 (http://www.epa.gov/environmentaljustice/plan-ej/)

Environmental Justice at HHS (http://www.hhs.gov/environmentaljustice/) – This page includes the information about Environmental Justice at HHS including the 2012 HHS Environmental Justice Strategy and Implementation Plan as well as the 2012 and 2013 HHS Environmental Justice Progress Reports

NIEHS Strategic Plan Theme 4: Health Disparities and Global Environmental Health (http://www.niehs.nih.gov/about/strategicplan/#a224829) – This page contains links to the NIEHS Strategic Plan including Theme 4 of the plan – Health Disparities and Global Environmental Health

HHS Health Disparities (http://www.hhs.gov/ocr/civilrights/resources/specialtopics/health_disparities/index.html) – This is the HHS Health Disparities Webpage. It includes information on Nondiscriminatory Quality Healthcare Services and Enforcement Success Stories.

Capacity Building

Power, Privilege and Participation: Meeting the challenge of equal research alliances

Article on the importance of community-university partnerships and how to make the partnerships work. Written by WEACT. (Urban Habitat)
Access on the EPA Web
(http://www.epa.gov/air/ej/conference2007/Swati_Prakash_Power_Privilege_Participation.pdf).

Community Engaged Research

Measuring the success of community science: The northern California household exposure study
Brown P, Brody JG, Morello-Frosch R, Tovar J, Zota AR, Rudel RA
Environ Health Perspect. 2012 Mar;120(3):326-31 (Full text available-
http://ehp03.niehs.nih.gov/article/info:doi/10.1289/ehp.1103734)

Abstract:
Background: Environmental health research involving community participation has increased substantially since the National Institute of Environmental Health Sciences (NIEHS) environmental justice (EJ) and community-based participatory research (CBPR) partnerships began in the mid 1990s. The goals of these partnerships are to inform and empower better decisions about exposures, foster trust, and generate scientific knowledge to reduce environmental health disparities in low-income, minority communities. Peer-reviewed publication and clinical health outcomes alone are inadequate criteria to judge the success of projects in meeting these goals; therefore, new strategies for evaluating success are needed.
Objectives: We reviewed the methods used to evaluate our project, "Linking Breast Cancer Advocacy and Environmental Justice" in order to help identify successful CBPR methods and assist other teams in documenting effectiveness. Although our project precedes development of the NIEHS Evaluation Metrics Manual, it illustrates the record keeping and self-reflection anticipated in NIEHS' Partnerships for Environmental Public Health.
Discussion: Evaluation strategies should assess how CBPR partnerships meet the goals of all partners. Our partnership, which included two strong community-based organizations (CBOs), produced a team that helped all partners gain organizational capacity. Environmental sampling in homes and reporting the results of that effort had community education and constituency-building benefits. Scientific results contributed to a court decision requiring cumulative impact assessment for an oil refinery, and to new chemicals policies for consumer products. All partners leveraged additional funding to extend their work.
Conclusions: An appropriate evaluation strategy can demonstrate how CBPR projects can advance science, support community empowerment, increase environmental health literacy, and generate individual and policy action to protect health.

Institutional review board challenges related to community-based participatory research on human exposure to environmental toxins: A case study
Brown P, Morello-Frosch R, Brody JG, Altman RG, Rudel RA, Senier L, Pérez C, Simpson R.
Environ Health 2010 Jul 16;9:39 (Full text available-
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2914003/?tool=pubmed)

Abstract:
Background: We report on the challenges of obtaining Institutional Review Board (IRB) coverage for a community-based participatory research (CBPR) environmental justice project, which involved

reporting biomonitoring and household exposure results to participants, and included lay participation in research.

Methods: We draw on our experiences guiding a multi-partner CBPR project through university and state Institutional Review Board reviews, and other CBPR colleagues' written accounts and conference presentations and discussions. We also interviewed academics involved in CBPR to learn of their challenges with Institutional Review Boards.

Results: We found that Institutional Review Boards are generally unfamiliar with CBPR, reluctant to oversee community partners, and resistant to ongoing researcher-participant interaction. Institutional Review Boards sometimes unintentionally violate the very principles of beneficence and justice which they are supposed to uphold. For example, some Institutional Review Boards refuse to allow report-back of individual data to participants, which contradicts the CBPR principles that guide a growing number of projects. This causes significant delays and may divert research and dissemination efforts. Our extensive education of our university Institutional Review Board convinced them to provide human subjects protection coverage for two community-based organizations in our partnership.

Conclusions: IRBs and funders should develop clear, routine review guidelines that respect the unique qualities of CBPR, while researchers and community partners can educate IRB staff and board members about the objectives, ethical frameworks, and research methods of CBPR. These strategies can better protect research participants from the harm of unnecessary delays and exclusion from the research process, while facilitating the ethical communication of study results to participants and communities.

Linking exposure assessment science with policy objectives for environmental justice and breast cancer advocacy: The northern California household exposure study

Brody JG, Morello-Frosch R, Zota A, Brown P, Pérez C, Rudel RA

Am J Public Health 2009 Nov;99 Suppl 3:S600-9 (Full text available-
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2774181/)

Abstract:

Objectives: We compared an urban fence-line community (neighboring an oil refinery) and a nonindustrial community in an exposure study focusing on pollutants of interest with respect to breast cancer and environmental justice.

Methods: We analyzed indoor and outdoor air from 40 homes in industrial Richmond, California, and 10 in rural Bolinas, California, for 153 compounds, including particulates and endocrine disruptors.

Results: Eighty compounds were detected outdoors in Richmond and 60 in Bolinas; Richmond concentrations were generally higher. Richmond's vanadium and nickel levels indicated effects of heavy oil combustion from oil refining and shipping; these levels were among the state's highest. In nearly half of Richmond homes, PM(2.5) exceeded California's annual ambient air quality standard. Paired outdoor-indoor measurements were significantly correlated for industry- and traffic-related PM(2.5), polycyclic aromatic hydrocarbons, elemental carbon, metals, and sulfates ($r = 0.54$-0.92, $P < .001$).

Conclusions: Indoor air quality is an important indicator of the cumulative impact of outdoor emissions in fence-line communities. Policies based on outdoor monitoring alone add to environmental injustice concerns in communities that host polluters. Community-based participatory exposure research can contribute to science and stimulate and inform action on the part of community residents and policymakers.

Environmental Health Disparities and Environmental Justice

The West End Revitalization Association's community-owned and -managed research model: Development, implementation, and action.

Heaney CD, Wilson SM, Wilson OR

Prog Community Health Partnersh. 2007 Winter; 1(4):339-49

(http://muse.jhu.edu/login?auth=0&type=summary&url=/journals/progress_in_community_health_partnerships_research_education_and_action/v001/1.4heaney01.html)

Abstract:

Background: Principal investigators (PIs) of community-based projects are predominantly university faculty who partner with community-based organizations (CBOs) to find a place to conduct research in communities that will cooperate with their research objectives. University-managed research models (UMRMs) are not always beneficial for CBOs because the university usually manages the study, collects and owns the data, and leverages control at each stage of research, without priority to resolution of problems impacting the quality of life of participating communities.

Objectives: We present the principles of community-owned and -managed research (COMR), as a new community-driven research model developed by the West End Revitalization Association (WERA), a CBO in Mebane, North Carolina.

Methods: We describe WERA's development of COMR, compare the power hierarchies of COMR with traditional UMRMs, distinguish COMR partnerships from UMRM partnerships, discuss disbursement of funds, and control/ownership of data. As the PI of research activities, WERA drafted Memoranda of Agreement (MOAs) for all partners, including academic researchers, implemented quality assurance and control procedures, submitted community research protocols for institutional review, and retained data ownership for action, activism, and problem solving. COMR methods encouraged corrective action of environmental justice (EJ) problems in affected communities, including provision of public, regulated drinking water and sewer services.

Conclusions: COMR promotes CBOs with demonstrated organizational capacity to PI and project manager. The COMR model goes beyond UMRMs and CBPR because it emphasized the credibility and capacity of CBOs to develop, own, manage, foster, and sustain viable research agendas to address ongoing environmental hazards and related threats to health and quality of life.

Community-engaged environmental justice research at University of Massachusetts Lowell
Siqueira CE
Am J Public Health 2009 Nov;99 Suppl 3:S485-7 (Full text available, requires membership- http://ajph.aphapublications.org/doi/full/10.2105/AJPH.2009.177360)

The Vida Verde Women's Co-Op: Brazilian immigrants organizing to promote environmental and social justice.
Gute DM, Siqueira E, Goldberg JS, Galvão H, Chianelli M, Pirie A
Am J Public Health 2009 Nov;99 Suppl 3:S495-8 (Full text available, requires membership- http://ajph.aphapublications.org/doi/full/10.2105/AJPH.2008.148528)

> **Abstract:**
> We reviewed the key steps in the launch of the Vida Verde Women's Co-Op among Brazilian immigrant housecleaners in Somerville, MA. The co-op provides green housecleaning products, encourages healthy work practices, and promotes a sense of community among its members. We conducted in-depth interviews with 8 of the first co-op members, who reported a reduction in symptoms associated with the use of traditional cleaning agents and a new sense of mutual support. Critical to the co-op's success have been the supportive roles of its academic partners (Tufts University and the University of Massachusetts, Lowell), effective media outreach, and a focus on advancing social justice. Next steps include implementing a formal business plan and assessing the appropriateness of cooperatives in other industries.

Supplemental Issue dedicate to environmental Justice
Issue S3 (November 2009) - American Journal of Public Health (Full text available, requires membership- http://ajph.aphapublications.org/toc/ajph/99/S3)

Partnerships for environmental and occupation justice: Contributions to research, capacity and public health.
Baron S, Sinclair R, Payne-Sturges D, Phelps J, Zenick H, Collman GW, O'Fallon LR.
AM J Public Health 2009 Nov;99 Suppl 3:S517-25 (Full text available- http://www.ncbi.nlm.nih.gov/pubmed/19890151)

Theater of the Oppressed

The Forum Theatre of Augusto Boal: A Dramatic Model for Dialogue and Community-Based Environmental Science

Sullivan J, Lloyd RS

Local Environment 2006;11(6):627-46 (Full text available, requires membership- http://www.tandfonline.com/doi/abs/10.1080/13549830600853684?journalCode=cloe20#.UdxLmfnVDzh)

Abstract

Community oriented environmental science combines the inclusive, action-oriented goals of environmental justice communities and the rationalist methodologies of science in an effort to balance urgent social and physical needs with research protocols, precise analysis and carefully measured conclusions. Community-based participatory research acknowledges that local expertise and networks, adverse social and economic consequences of environmental degradation and community beliefs and attitudes are vital factors that affect both overall community health and research outcomes. A unique CBPR approach to inclusive outreach and education is Community Environmental Forum Theatre (CEFT), developed through the National Institute of Environmental Health Sciences Center in Environmental Toxicology at the University of Texas Medical Branch/Galveston TX. CEFT integrates the dramaturgy of Augusto Boal's Theatre of the Oppressed and the democratizing dialogic process of Paulo Freire into the design and implementation of environmental health research, community health care and education. CEFT projects throughout the Texas petrochemical belt have used this form of interactive workshop and energized public performance to increase knowledge of toxicological concepts, develop risk awareness, extend and strengthen coalitions, create action agendas and promote community advocacy skills. Boal image-making techniques help to deconstruct concepts such as exposure pathways, dose response, differential susceptibilities, multiple stressors/cumulative risk and the healthy worker effect. Image-based ethnographies provide insight into risk perceptions, risk communication outcomes and overarching community dynamics impacting environmental justice. CEFT project efficacy is evaluated via a multi-frame process focused on goals specific to the roles of the scientific/environmental health outreach specialist, the community development artist/practitioner and the advocate for environmental health and justice issues

Environmental Justice and Augusto Boal's Theatre of the Oppressed: A Unique Community Tool for Outreach, Communication, Education and Advocacy

Sullivan J, Parras J

Theory in Action 2008 Apr;1(2):20-39 (Full text available- http://www.transformativestudies.org/wp-content/uploads/2008/07/environmental-justice-and-augusto-boal2.pdf)

Abstract:

Our article, *Environmental Justice and Augusto Boal's Theatre of the Oppressed: a Unique Community Tool for Outreach, Communication, Education and Advocacy*, describes this transformative process, explores the theoretical and scientific influences behind the method and

unpacks the collaborative dynamic modulating the efforts of community activists, non-profit environmental professionals and academics to achieve and refine their working relationship. The text is accompanied by photos from actual sessions that illustrate how the methodology embodies concepts from environmental and social sciences to promote scientific literacy, and also uses short uncomplicated scenes to show how environmental injustices adversely affect both physical and mental health, and the larger economy of impacted communities. The fact that 85% of these towns and neighborhoods are communities of color underscores the fact that race and class are keys to the struggle for environmental justice. The Forum Theater methodology also provides a dialogic structure for deconstructing these deep-seated, bitterly divisive issues with sensitivity and respect.

Forum Theatre Skills & Concept Demonstration

Video (on Center to Eliminate Health Disparities / UTMB website- http://www.utmb.edu/CEHD/Programs/ForumTheater.asp)

This video footage documents a Theatre of the Oppressed work session at the Environmental Protection Agency's Community Involvement Conference (CIC), Buffalo NY, July 2005. Participants include EPA community Involvement personnel from various agency regions, representatives of community based environmental justice organizations, and public health practitioners.

El Teatro Lucha de Salud del Barrio: Theater and Environmental Health in Texas

Article on the use of Forum Theatre in a long term community engagement project under the NIEHS "EJ Partnerships for Communication" program

Read more at http://wayback.archive-it.org/2077/20100906202911/http:/www.communityarts.net/readingroom/archivefiles/2005/10/acrobats_of_the.php.

Popular Arts and Education in Community-Based Participatory Research (CBPR): On the subtle craft of developing and enhancing channels for clear conversations among CBPR partners.

Sullivan J, Siqueira CE.

New Solut 2009;19(4):399-406 (Full text available, requires membership- http://baywood.metapress.com/app/home/contribution.asp?referrer=parent&backto=issue,2,13;journal,15,88;linkingpublicationresults,1:300327,1)

Abstract:

Community-Based Participatory Research (CBPR) is a methodology hinged on flexible power relationships and unobstructed flow of expert and local knowledge among project partners. Success in CBPR depends on authentic dialogue, free flow of information, and trust. But accurate, unmediated, and timely channels of communication, while key to successful CBPR, are difficult to create and maintain. As participatory methodologies evolve, popular arts and education techniques have increasingly taken center stage as culturally fluent, bidirectional modalities for conveying information, building responsive channels for communication, promoting policy, and enhancing the effectiveness of grassroots organizing.

Native American Environmental Justice

Medicine Food: Critical Environmental Justice Studies, Native North American Literature, and the Movement for Food Sovereignty

Joni Adamson.

Environmental Justice. December 2011, 4(4): 213-219 (http://online.liebertpub.com/doi/abs/10.1089/env.2010.0035). doi:10.1089/env.2010.0035.

Abstract:

The notion that people have a sovereign "right to food" is affirmed in an array of international instruments including the United Nations Declaration on Human Rights and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Indigenous peoples throughout the Americas began formally organizing around the concept of food sovereignty thirty years before the adoption of UNDRIP by convening meetings and summits that called attention to the ideologies and external forces that have been threatening indigenous food systems for hundreds of years. Aware of these hemispheric organizational activities, a number of Native North American poets and novelists began writing poetry and novels that illustrated the historic relationship between indigenous peoples and the foods that are culturally and nutritionally necessary to their survival. In this essay, I read Winona LaDuke's Last Standing Woman and Leslie Marmon Silko's Gardens in the Dunes as "case studies" that contribute to critical environmental justice studies by enhancing understanding of the reasons indigenous communities are organizing around foods such as wild rice and amaranth and creating international documents that position them to take a stand on global debates surrounding biodiversity, trade liberalization, and food sovereignty.

Tribal Environmental Justice: Vulnerability, Trusteeship, and Equity under NEPA

Barbara Harper and Stuart Harris.

Environmental Justice. December 2011, 4(4): 193-197 (http://online.liebertpub.com/doi/abs/10.1089/env.2010.0037?journalCode=env). doi:10.1089/env.2010.0037.

Abstract:

The goal of environmental justice (EJ) is for all peoples to achieve the same degree of protection from environmental and health hazards. This suggests that impacts should be evaluated from the perspective of the affected community because only the community truly knows what is at risk from adverse impacts. If the EJ assessment is based solely on spatial analysis of demographic data with a criterion that 20% of a local community must be of a single ethnic group or below a certain income level in order to be recognized as an environmental justice community, then impacts to tribal natural resources and well-being will often be overlooked or significantly underestimated. When American Indian tribes and tribal resources are affected on or off a reservation, a proper impact assessment requires considerations of natural resource trusteeship, federal fiduciary trust

obligations across ceded or usual and accustomed areas, and the spatial distribution of natural resources that are potentially impacted. This can be done within a standard National Environmental Policy Act (NEPA) format by adding tribal narratives and tribal impact measures.

A Method for Tribal Environmental Justice Analysis
Stuart Harris and Barbara Harper.
Environmental Justice. December 2011, 4(4): 231-237
(http://online.liebertpub.com/doi/abs/10.1089/env.2010.0038). doi:10.1089/env.2010.0038.

Abstract:
The goal of environmental justice (EJ) is for all peoples to achieve the same degree of protection from environmental health hazards. Although each tribe is an independent sovereign nation and a single federal approach may not suit all tribes, this article presents an improved method for evaluating and quantifying potentially disproportionate impacts in tribal communities under the National Environmental Policy Act (NEPA). A critical first step in evaluating disproportionate impacts in tribal communities might be to determine the condition of natural resources used by, important to, or appertaining to tribes. The eco-cultural system or ethno-habitat relevant to the tribe and its resource interests can be described in narrative and quantitative terms. The features, attributes, goods, and services provided by the baseline conditions of the ethno-habitat and its resources can be described. Examples of quantifiable measures to evaluate interruptions in service flow and risks to traditional lifeways over multiple generations are suggested. A subsistence exposure scenario and risk assessment based on traditional lifeways can be included in this step, since risks to tribal members are likely to be higher than to non-native persons due to differences in the frequency and intensity of environmental contact. To evaluate cumulative impacts, existing co-risk factors that make the community more vulnerable can also be considered.

Self-Determining Environmental Justice for Native America
James M. Grijalva.
Environmental Justice. December 2011, 4(4): 187-192
(http://online.liebertpub.com/doi/abs/10.1089/env.2010.0033?prevSearch=%252210.1089%252Fenv.2010.0033%2522&searchHistoryKey). doi:10.1089/env.2010.0033.

Abstract:
Modern environmental law in the United States is predicated on federal-state partnerships that did not initially account for pollution and environmental degradation of Native America. The resulting regulatory gap threatened not only the human health of communities of color, but also the ability of indigenous peoples to self-determine their cultural destinies. Tribal self-determination is the nation's Indian policy, sought through government-to-government relationships predicated on the unique legal status of American Indian tribes as governments with inherent sovereign powers over their retained territories. Amended environmental laws now favor tribal self-determination as well;

tribal governments are eligible for many of the same federal program roles generally played by states outside Indian country. Comprehensive, fully functioning federal-tribal partnerships, animated by tribal environmental value judgments translated into federally enforceable requirements, provide a promising and culturally relevant opportunity for protecting and preserving the health and welfare of tribal citizens and their land-based indigenous culture.

Radical Adaptation, Justice, and American Indian Nations

Sarah Krakoff.

Environmental Justice. December 2011, 4(4): 207-212 (http://online.liebertpub.com/doi/abs/10.1089/env.2010.0034?prevSearch=%252210.1089%252Fenv.2010.0034%2522&searchHistoryKey). doi:10.1089/env.2010.0034.

Abstract:

Climate adaptation strategies typically involve making adjustments to laws about planning, resource allocation, and infrastructure to ensure that the built and natural environments will continue to support human communities. The question investigated here is related but distinct. This essay interrogates the necessary conditions for indigenous communities to survive, and perhaps even thrive, while maintaining their unique cultures in the face of dramatic and/or unknowable material circumstances. In other words, rather than ask how indigenous communities will adjust to the effects of a changing climate, this article asks what the essential conditions are for indigenous communities themselves to consider the extent, scope, and terms of any and all necessary adjustments. The history of the Cherokee Nation's adaptation to their forced removal from their homelands in the Southeast to Oklahoma, explored briefly here, provides an initial set of hypotheses about the core components for successful adaptation to radically different territorial circumstances.

Environmental Justice, American Indians and the Cultural Dilemma: Developing Environmental Management for Tribal Health and Well-being

Darren J. Ranco, Catherine A. O'Neill, Jamie Donatuto, and Barbara L. Harper.

Environmental Justice. December 2011, 4(4): 221-230 (http://online.liebertpub.com/doi/abs/10.1089/env.2010.0036?prevSearch=%252210.1089%252Fenv.2010.0036%2522&searchHistoryKey). doi:10.1089/env.2010.0036.

Abstract:

Environmental justice in the tribal context cannot be contemplated apart from a recognition of American Indian tribes' unique historical, political, and legal circumstances. American Indian tribes are sovereign governments, with inherent powers of self-government over their citizens and their territories. Their status as sovereign entities predates contact with European settlers. This separate status, nonetheless, was affirmed by the United States early on and is enshrined in the U.S. Constitution. Tribes today continue to exist as distinct sovereigns within the boundaries of the United States.

Environmental Justice in Native America
Kyle Powys Whyte.
Environmental Justice. December 2011, 4(4): 185-186
(http://online.liebertpub.com/doi/abs/10.1089/env.2011.4401?prevSearch=%252210.1089%252Fenv.2011.4401%2522&searchHistoryKey). doi:10.1089/env.2011.4401.

The Recognition Dimensions of Environmental Justice in Indian Country
Kyle Powys Whyte.
Environmental Justice. December 2011, 4(4): 199-205
(http://online.liebertpub.com/doi/abs/10.1089/env.2011.0036?prevSearch=%252210.1089%252Fenv.2011.0036%2522&searchHistoryKey). doi:10.1089/env.2011.0036.

Abstract:
Environmental justice theories that incorporate recognition justice will be best suited to evaluating the fairness of government-to-government relations, tribal institutions, and the provision of funds. I will make the case for a recognition-based conception of environmental justice. Though recognition is important to environmental justice in Indian country, there are three principle challenges that it faces: the sheer particularity of the situations of different tribes, disagreements over what counts as traditional, and decisions by tribal governments that do not accord with many of the values of the environmental and environmental justice movements.

Session Resources

Concurrent Sessions #1

Research to Action: Translational Research to Address Health Disparities and Environmental Inequities

Resources:
The Grand Lake Mercury Study website: www.grandlakemercurystudy.org

What's in Your Fish, a two-page fact sheet with key findings from the Grand Lake Mercury Study: http://grandlakemercurystudy.org/images/Whats_In_Your_Fish.pdf

A booklet with FAQs and more information about key findings from the Grand Lake Mercury Study: http://grandlakemercurystudy.org/images/Findings_Booklet.pdf

Flocks J, Kelley M, Economos J, McCauley L. 2012. Female farmworkers' perceptions of pesticide exposure and pregnancy health. J Immigr Minor Health. 14(4):626-632. http://www.ncbi.nlm.nih.gov/pubmed/22094390

Runkle JD, Tovar-Aguilar JA, Economos E, Flocks J, Williams B, Muniz JF, Semple M, McCauley L. In press. Pesticide Risk Perception and Biomarkers of Exposure in Florida Female Farmworkers. Journal of Environmental and Occupational Medicine.

Joan Flocks J, Vi Thien Mac V, Runkle JD, Tovar-Aguilar JA, Economos E, McCauley L. In press. Female Farmworkers' Perceptions of Heat-related Illness and Pregnancy Health. Journal of Agromedicine.

Kelley MA, JFlocks J, Economo J, McCauley LA. In press. Female Farmworker's Health During Pregnancy: Health Care Providers' Perspectives. Workplace Health & Safety.

Innovative Tools and Technologies for Environmental Public Health Research

Resources:
Public Laboratory (http://publiclab.org/)

EgoNet (http://sourceforge.net/projects/egonet/)

Effectively Reaching Underserved Populations: Lessons Learned on Culturally Appropriate Communication Strategies and Tools

Resources:
Allicock, M., Graves, N., Gray, K., Troester, M.A. "African American Women's Perspectives on Breast Cancer: Implications for Communicating Risk of Basal-like Breast Cancer." *Journal of Health Care for the Poor and Underserved* 24.2 (2013): 753-767. The link to the article is here: http://muse.jhu.edu/journals/journal_of_health_care_for_the_poor_and_underserved/v024/24.2.allicock.html.

Addressing 'Research Disparities': Building Connections to Build Capacity

Resources:
U.S. Department of Health & Human Services Environmental Justice Plan:

Training: http://www.hhs.gov/environmentaljustice/strategy.html#strated
Research: http://www.hhs.gov/environmentaljustice/strategy.html#stratresearch
National Conversation: http://www.nationalconversation.us/action-agenda/chapter-4-communities

Concurrent Sessions #2

Examining Environmental Determinants of Health and Engaging Communities around EPH Issues Using Geographic and Spatial Analysis

Resources:
American Journal of Public Health issue on disproportionate environmental health impacts: http://www.epa.gov/ncer/events/news/2011/10_25b_11_feature.html

The 2010 Disproportionate Impacts Symposium: Strengthening Environmental Justice Research and Decision Making: A Symposium on the Science of Disproportionate Environmental Health Impacts http://www.epa.gov/ncer/events/news/2010/03_17_10_calendar.html

Follow-up actions from the 2010 Disproportionate Impacts Symposium: http://www.epa.gov/ncer/ehs/ej/ongoing-actions-ej.pdf

EPA Plan EJ 2014 Science Implementation Plan http://www.epa.gov/compliance/ej/resources/policy/plan-ej-2014/plan-ej-science-2011-09.pdf

Meharry Blog
http://meharryblog.mmc.edu/?p=64

Evidence for Informing the Next Generation of Quality Improvement Initiatives: Models, Methods, Measures, and Outcomes
http://muse.jhu.edu/journals/journal_of_health_care_for_the_poor_and_underserved/toc/hpu.23.3A.html

Inequities Persist: Environmental Justice from a Native American Perspective

Resources:
Healthy Voices (http://healthyvoices.org)

Navajo Birth Study (http://www.youtube.com/watch?v=kcJebbN4e_I)

Community Experience of Contaminated Communities: Contributions from the Social Sciences

Resources:
General Organizations on Health and the Environment that Deal With Community Impacts

Center for Health, Environment and Justice- http://www.chej.org/
(Very important national organization run by Lois Gibbs)

Toxics Action Center- http://www.toxicsaction.org/
(New England-wide toxics resource center)

Alliance for a Healthy Tomorrow- http://www.healthytomorrow.org
(Massachusetts organization based on precautionary principle, with over 100 affiliated organizations)

Collaborative Initiative for Research Ethics in Environmental Health-
http://brown.edu/research/research-ethics/
(Research and education on community-based participatory research in environmental justice)

Commonweal- http://www.commonweal.org
(Combines toxics activism with cancer support groups and spiritual programs)

Collaborative on Health and the Environment- http://www.cheforhealth.org/
(Partnership of many organizations, tied to Commonweal)

Pesticide Action Network- http://www.panna.org/

Health Care Without Harm- http://www.noharm.org/
(Works to produce environmentally sustainable health care facilities)

Environmental Working Group- http://www.ewg.org/
(Conducted influential body burden study)

Children's Environmental Health Network- http://www.cehn.org/

Science and Environmental Health Network- http://www.sehn.org/

Scorecard (Environmental Defense)- http://www.scorecard.org/
(Major resource center for toxic chemicals, especially by geographical location)

Silent Spring Institute- www.silentspring.org
(Leader in reporting environmental health data back to participating communities)

Environmental Justice Organizations

Alternatives for Community and Environment (Boston)- http://www.ace-ej.org/

West Harlem Environmental Action (New York)- http://www.weact.org/

Environmental Justice Resource Center (Clark Atlanta University)- http://www.ejrc.cau.edu/

Environmental Justice League of Rhode Island- www.Ejlri.wordpress.com

Silicon Valley Toxics Coalition- www.svtc.org

Concerned Citizens of Tillery (North Carolina)- http://www.cct78.org

Southwest Organizing Project (Albuquerque, NM)- http://www.swop.net/

Environmental Health Coalition (San Diego)- http://www.environmentalhealth.org

General News Sources

Above the Fold (Environmental Health News)- http://www.environmentalhealthnews.org/

GIS Research Tools

Mapcruzin- http://www.mapcruzin.com/
(Extensive network of GIS and related geographic-level material on toxics)

Altman, Rebecca, Morello-Frosch, Rachel, Brody, Julia., Rudel, Ruthann., Brown, Phil. and Averick, Mara. (2008). "Pollution comes home and gets personal: women's experience of household chemical exposure." Journal of Health and Social Behavior **49**(4): 417-435.

Balshem, Martha. (1993). Cancer in the Community: Class and Medical Authority. Washington, DC, Smithsonian Institution Press.

Brown, Phil and Mikkelsen, Edwin J. (1990). No Safe Place: Toxic Waste, Leukemia, and Community Action. (revised 1997) Berkeley, CA: University of California Press.

Brown, Phil. (2007). Toxic Exposures: Contested Illnesses and the Environmental Health Movement. New York, Columbia University Press.

Corburn, Jason. (2005). Street Science: Community Knowledge and Environmental Health Justice. Cambridge, MA, MIT Press.

Couch, Steven. R. and Kroll-Smith, J. Stephen. (1985). "The chronic technological disaster: toward a social scientific perspective." Social Science Quarterly **66**: 564-75.

Edelstein, Michael (2004). Contaminated Communities: The Social and Psychological Impacts of Residential Toxic Exposure. Boulder, CO, Westview Press. (revised edition)

Hoover, Elizabeth, Cook, Katsi Plain, Ron , Sanchez, Kathy, Waghiyi, Vi , Miller, Pamela, Dufault, Renee , Sislin, Caitlin and Carpenter, David O. (2012). "Indigenous Peoples of North America: Environmental Exposures and Reproductive Justice." Environmental Health Perspectives 120:1645–1649

Klawiter, Maren. (2004) "Breast Cancer in Two Regimes: The Impact of Social Movements on Illness Experience" Sociology of Health and Illness 26:45–874

Levine, Adeline. (1982). Love Canal: Science, Politics and People. New York, Rowman & Littlefield.

Mayer, Brian. (2008). Blue-Green Coalitions: Fighting for Safe Workplaces and Healthy Communities. Ithaca, Cornell University Press.

Shriver, Thomas E. (2001) "Environmental Hazards and Veterans' Framing of Gulf War Illnesses." Sociological Inquiry 71(4): 403-420.

Szasz, Andrew. (1994). Ecopopulism: Toxic Waste and the Movement for Environmental Justice. Minneapolis: University of Minnesota Press.

Taylor, Dorceta E. (2000). "The Rise of the Environmental Justice Paradigm: Injustice framing and the Social Construction of Environmental Discourse." American Behavioral Scientist 43:508-580.

Day 1 General Session

Institutional Review Boards and Community Engaged Research: How Can Universities and Community Organizations Work Together to Strengthen the Ethics Review of Community Based Research?

Resources:

Community-Campus Partnerships for Health (CCPH) Conference (http://www.ccph.info)

CCPH's CBPR Resources (http://depts.washington.edu/ccph/commbas.html)

Links for call series proceedings and the March 2012 meeting report - posted on the CCPH website at http://depts.washington.edu/ccph/irbhome.html

CIRTification: Community Involvement in Research Training produced by Dr. Emily Anderson of the Community Engagement and Research Core Ethics Committee of the University of Illinois at Chicago (UIC) Center for Clinical and Translational Science and C3, the Chicago Consortium for Community Engagement, freely available at: http://go.uic.edu/CIRTification

NIEHS Office of Human Research Compliance and IRB Resources can be found at http://www.niehs.nih.gov/research/clinical/join/ohrc/index.cfm and http://www.niehs.nih.gov/about/boards/irb/index.cfm.

Concurrent Sessions #3

Cumulative Exposures: The Role of Epidemiology in Elucidating Environmental Contributions to Health Disparities

Resources:
Independent and Joint Associations between Multiple Measures of the Built and Social Environment and Physical Activity in a Multi-Ethnic Urban Community.
http://www.ncbi.nlm.nih.gov/pubmed/?term=Independent+and+joint+associations+between+multiple+measures+of+the+built+and+social+environment+and+physical+activity+in+a+multi-ethnic+urban+community

Social and Physical Environments and Disparities in Risk for Cardiovascular Disease: The Healthy Environments Partnership Conceptual Model
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1314928/?tool=pmcentrez

Conflicts over Research that Identifies Community Impacts of Environmental Exposures

Resources:
In Harm's Way – investigative series on east end Houston ambient air quality for Houston Chronicle by Dina Capiello.
http://www.chron.com/news/article/Chronicle-cross-county-study-reveals-risky-load-1643020.php

Preliminary Epidemiologic Investigation of the Relationship between the Presence of Ambient Hazardous Air Pollutants (Haps) and Cancer Incidence in Harris County. Authors: Kristina M. Walker, Ann L. Coker, Elaine Symanski, Philip J. Lupo
http://www.houstontx.gov/health/UT-executive.html

"Comparative Assessment of Air Pollution–Related Health Risks in Houston." Authors: Ken Sexton, Stephen H. Linder, Dritana Marko, Heidi Bethel, and Philip J. Lupo
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2022677/

"Childhood Lymphohematopoietic Cancer Incidence and Hazardous Air Pollutants in Southeast Texas," 1995–2004. Authors: Kristina W. Whitworth, Elaine Symanski, and Ann L. Coker
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2592281/

"A Closer Look at Air Pollution in Houston: Identifying Priority Health Risks"
A summary of the *Report of the Mayor's Task Force on the Health Effects of Air Pollution.* Authors: Bethel, Sexton, Linder, Abramson, Bondy, Frasier, Ward
http://www.epa.gov/ttnchie1/conference/ei16/session6/bethel.pdf

"Separate but Toxic: The Houston environmental magnet school that's an environmental catastrophe"
Author: Dave Mann
http://www.texasobserver.org/2451-separate-but-toxic-the-houston-environmental-magnet-school-thats-an-environmental-catastrophe/

Sacrifice Zones: The front lines of toxic chemical exposure in the Unites States
Author: Steve Lerner. MIT Press: Cambridge MA. 2010. (EHP review)
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3114843/

Women Pioneers of the Louisiana Environmental Movement.
Author: Peggy Franklin, Susan Tucker. University of Mississippi. 2013
http://www.jstor.org/stable/j.ctt24hvg9

The Ungreening of America: No clear skies
Author: Donovan Webster & Michael Scherer
http://www.motherjones.com/environment/2003/09/ungreening-america-no-clear-skies

Assessing the Effects of the Gulf of Mexico Oil Spill on Human Health: a summary of the June 2010 Workshop.
http://www.nap.edu/catalog/12949.html

Investigation: Two Years after the Oil Spill, a Hidden Health Crisis Festers. Author: Antonia Juhasz
http://www.thenation.com/article/167461/investigation-two-years-after-bp-spill-hidden-health-crisis-festers#axzz2XRCezE22

One dead, scores injured in Louisiana chemical plant explosion. NBC news story. Author: Matthew DeLuca
http://usnews.nbcnews.com/_news/2013/06/13/18936624-one-dead-scores-injured-in-louisiana-chemical-plant-explosion?lite

Bayou Corne Sinkhole Monitoring Flight, 5/6/13
http://leanweb.org/our-work/community/public-health/bayou-corne/bayou-corne-sinkhole-monitoring-flight-5-6-13.

Institutional Research Misconduct. Investigating the manipulation of science by government, industry or academia to support government policies and industry practices. David L. Lewis, Ph.D.
www.researchmisconduct.org

"Majora Carter spends a day with Wilma Subra as she travels from her office in New Iberia — past town after town she's helped with environmental concerns during the last 30 years. Their trip culminates in the coastal communities of Grand Isle and Venice, Louisiana, where she'll be taking water and sediment samples

and meeting with community members whose concerns are now the focus of her investigation." (Video Interview)
http://www.thepromisedland.org/episode/12-wilma-subra

"Committed to protecting the environment and the health and safety of citizens, Wilma Subra started Subra Company in 1981. Subra Company is a chemistry lab and environmental consulting firm in New Iberia, LA. Mrs. Subra provides technical assistance to citizens, across the United States and some foreign countries, concerned with their environment by combining technical research and evaluation." (Video interview)
http://bpoilslick.blogspot.com/2013/04/dr-wilma-subra-voices-from-gulf.html

Recommendations from Previous Meetings

Symposium on Health Research and Needs to Ensure Environmental Justice

1994

[NOTE: The following recommendations are taken from the original document.]

Core Groups 1-3

1. Allow communities to speak for themselves rather than have consultants do it. Typically, a community will do initial research on its environmental problem, then hand it over to scientists and other experts. When these intermediaries report to government agencies, they often don't accurately reflect community concerns.
2. Ensure government validation of a community's experience with an environmental problem, rather than dismissing community reports. The government should work on behalf of people, not industry. Any penalties or fines imposed on an industry by a regulatory agency should be turned over to affected communities.
3. Increase government funding to communities, fully inform communities about available funding, and provide technical assistance with the application process so communities can more readily obtain funding.
4. Ensure that researchers must explain to community members what data they need to study an environmental problem, then report their findings to the community in an understandable format.

Core Groups 4-7

1. Respond to the urgent need for public education and outreach efforts, so communities can be more involved in their own protection. Two possibilities are how-to clinics and in-home clinics that teach people about, for example, radon poisoning in their communities.
2. Inform the public about the effects of products they use on the environment. Products should be priced to reflect their impact on the environment.
3. Establish an environmental information network independent of government or industry. It should include a telephone hotline, a clearinghouse, and computer networking. Government agencies should give communities computer hardware and software that is user-friendly and connected to data-collection systems that are independent of the government and should provide computer training to community members.
4. Establish legal safeguards so "whistle-blowers" who report violators will not face retribution.
5. Increase ethnic and cultural diversity on the staffs of government agencies, particularly in positions that require contact with affected communities. Too often, agencies hire white males to investigate situations in which most complainants are black women. Because these groups have divergent sensibilities, misunderstanding results.
6. Honor whistle-blowers and protect their legal rights.
7. Ensure that consumers have the right to sue the government when they are affected by environmental pollution.
8. Subject corporations (and executive officers) who knowingly violate regulations to criminal penalties. President Clinton's "three strikes and you're out" policy with criminals should apply to corporations: Imprisonment should be mandatory for executives who head companies that habitually violate environmental regulations.
9. In legal cases concerning chemical toxicity, shift the burden of proof so chemicals are considered toxic until proven safe.

[Note: No recommendations were listed as deriving from Core Group 8.]

Core Groups 9-11

1. Eliminate unsafe pesticides used in the United States and exported abroad.
2. Increase action to reduce farmworkers' exposure to known toxins, such as lead in paint and soil.
3. Increase research on asthma, particularly among people of color, and take more action against known causes of asthma.
4. Generate a written report of symposium proceedings.
5. Agencies sponsoring the symposium should plan the next step.
6. Community members need financial support to have real participation in the next symposium. Agencies must provide travel and lodging costs.
7. Ensure that researchers recognize local expertise in environmental health matters and that any government intervention be done in partnership with the community. In researching an environmental problem, the burden of proof should be removed from victims and placed on the hazardous materials themselves. Enact, strengthen, or enforce legislation that gives everyone equal protection against environmental degradation. Civil and criminal penalties against violators should be increased, and existing legislation (including the Clean Air Act, Clean Water Act, Superfund, and pesticide legislation) should be strengthened. A Superfund should be created to provide job training for workers who lose their jobs because of environmental technologies or innovations.

Core Groups 12-15

1. Repeal the Werner Amendment, which guarantees sovereign immunity. The amendment makes it impossible for citizens to sue the government; repeal would give them that right.
2. Make all communication materials in the environmental justice arena multilingual so all linguistic groups in the population can understand them. Similarly, all communication materials must use simple, clear language instead of technical jargon.
3. Revamp the funding process.
    - Eliminate government subsidy of corporations and redirect the money to community justice groups. Generate new sources of funding by making polluters pay fines; direct that money to local justice groups. This move switches control of funding from government and industry to citizens.
    - Eliminate provisions for local justice groups to receive reimbursement for their expenses. They need the funding up front.
    - Simplify procedures for obtaining grants so community groups can apply more easily for them. Let community groups set up general criteria for awarding grants, and let community committees oversee funding and research. Draft legislation and regulations that require community-based organizations to be included in the funding process.
4. Mandate institutional change. Overhaul personnel, hiring, and evaluation procedures in government agencies and academic institutions so that staff and leadership reflect the cultural diversity of the community being served. Enforce laws that require such change.
5. Ensure that recommendations made at this symposium are enacted. Report accomplishments of the symposium to the public and hold a followup conference.
6. Insist on full disclosure of all relevant data and let communities use data on their own behalf. Communities often are not given access to data. Once they have access, they are not allowed to use the data for their own purposes.

Core Group 16
1. Establish an interagency forum to address environmental justice issues to make certain that involved agencies are aware of their roles and will not duplicate efforts.
2. Ensure that the interagency group is actively involved in affected communities, educating residents and allowing them to set the agenda for further action.
3. Ensure followup to this symposium, so the report of its results is not shelved and forgotten.
4. Encourage agency employees to stand together with com· munity workers to get things done. Many agency employees seem to be good people with a lot of heart, who say their hands are tied until citizens get their legislators to enact laws that allow agency people to act.

Core Group 17
1. When addressing any case of environmental injustice, include community groups from the outset, along with local health and environmental agencies and State and Federal groups (such as Congress and the Departments of Justice, HUD, Labor, and the Interior).
2. Make all relevant information available to affected communities in their own languages; include videotapes that illiterate citizens can understand.
3. Provide money to include professionals in the communities, such as local toxicologists, in environmental justice efforts; they will ensure that community members aren't "snowed under" with technical jargon from government and industry representatives.
4. Urge symposium organizers to obtain a signed executive order so all participants return to their communities with something solid to show for this conference and a starting point for further work.

An unidentified speaker from the core group said that risk assessment is a concern to indigenous people, who believe there are no acceptable levels of environmental contamination. A clean environment is the fundamental right of Native Americans, who have a long history of resource management based on detailed understanding of long-range impacts on the environment. The use of risk assessment as a tool and policy allows activities that damage the land, animals, and people. Indigenous people assert the right to reject levels of contamination that industrial societies consider acceptable. The position of indigenous peoples, which must be considered in environmental studies conducted in their territories, is as follows:

1. Precedence must be given to traditional considerations over economic considerations in determining the future of Native American children.
2. Educational programs in indigenous communities should reflect traditional values.
3. Tribal representatives and representatives of Federal agencies should be trained in and sensitized to traditional values.
4. Funding should be adequate to ensure implementation of traditional values.
5. Indigenous peoples must be equally involved in decisions, and health research must consider all parameters identified as important by indigenous people.
6. A permanent ombudsman position should be established in Federal agencies that interact with indigenous people and should include oversight authority on programs affecting indigenous communities.
7. An electronic information network must be established, ensuring that indigenous people have the opportunity to identify problems and initiate proposals.

Core Groups 18-20
1. Recognize that people are not a tool for science; science is a tool for people. Scientific knowledge has limits. Other "ways of knowing" are as valid *as* are scientific ways.

2. Ensure that research is done in the community, for the community, by the community. No more research should conclude there is no solution to an environmental problem, nor make it appear that the government has done something useful about a problem when it has not.
3. Ensure that the purpose of environmental research is explicitly clear to everyone involved from the outset and serves the needs of the community instead of the needs of industry or government.
4. Do not tolerate negative research that is designed to prove that there is no environmental problem.
5. Ensure that researchers empower the community and involve community members, not exploit them.
6. Ensure that community members are involved at all stages of a research study, including defining the problem, designing the research, gathering the data, analyzing the findings, and publishing the results.
7. Disseminate findings so that people are aware of and can use the information.
8. Encourage partnerships among government agencies, research institutions, and community members. These relationships are essential and must be characterized by mutual respect and recognition of the different "ways of knowing."

A final speaker declared that the scientific and environmental justice communities must jointly develop a new model for environmental research that includes affected communities as active participants in the research. Citizens must be involved in planning and conducting studies, disseminating results, generating hypotheses, discovering new problems, interpreting results, and ensuring that study results are translated into appropriate public health action whenever possible. New epidemiologic models and methodologies must be developed to analyze smaller population groups, cluster phenomena, low-dose exposures, and exposures to multiple toxins. Recruiting, advancing, and retaining people of color and members of affected communities must be a high priority. Environmental research has included the regular practice of omitting, suppressing, and destroying information critical to environmental health. Burdens of scientific proof ignore the norms of most communities that need environmental research. New molecular technologies will have an increasing impact on risk assessment and policy formulation. The environmental justice movement must target the development of these tools to serve affected communities.

Building Healthy Environments to Eliminate Health Disparities Symposium

2003

[NOTE: The following was taken from the full meeting report- http://www.epa.gov/compliance/ej/resources/reports/annual-project-reports/health-disparities-symposium-2003.pdf.]

Recommendations and Next Steps

On May 28 and 29, 2003 in Washington, D.C., the U.S. Department of Health and Human Services (HHS), Office of Minority Health (OMH) and U.S. Environmental Protection Agency (EPA), Office of Environmental Justice (OEJ) cosponsored the Building Healthy Environments to Eliminate Health Disparities symposium for senior-level Federal government employees. This symposium was the first to explore the intersection between health disparities and environmental justice and the ways in which Federal agencies can develop proactive, comprehensive, and integrated strategies to build healthy environments in communities suffering from health disparities.

The symposium built on the momentum created by HHS's National Leadership Summit on Eliminating Racial and Ethnic Disparities in Health in July 2002. As a direct result of this summit, the Health Disparities and

Environmental Justice Task Force consisting of 20 members from various agencies was convened in October 2002. Nathan Stinson, Jr., PhD, MD, MPH, Deputy Assistant Secretary for Minority Health, HHS and Charles Lee, Associate Director for Policy and Interagency Liaison, OEJ, EPA, co-chair the task force.

The expected outcomes of the symposium were to:

- Identify promising practices from each participating agency.
- Promote better discussion, coordination, and collaboration.
- Develop a framework for building healthy environments to eliminate health disparities, including:
- Holistic, integrated approaches to building healthy communities by addressing both the physical and social environments.
- Effective partnership development with and capacity building of communities to address environmental, health, and sustainability issues.
- Improved translational implementation strategies that link programmatic knowledge and resources with action.

This symposium was the first step in a series of meetings to be organized to mobilize strong partnerships within HHS and with EPA and other Federal agencies. Over 100 individuals from over 12 different agencies participated. Future coordinated activities will be planned to further expand the knowledge base and seek the active participation of affected minority communities.

Next Steps

Addressing the challenge of environmental justice and health disparities is a long-term process, and to be successful, forward progress must be maintained. Dr. Stinson suggested building on the results of this symposium through the following steps:

- Build on new interagency relationships. This symposium has allowed us to develop a new network within the Federal government to maintain communication, share ideas, and help coordinate and champion these efforts.
- Make strategic investments. This symposium focused on examining how Federal agencies can make of a bigger investment in addressing specific issues—through collaborations, economies of scale, reducing overlap, and investing in the right areas.
- Begin the planning process for the next meeting. The IWG will debrief on what was learned from this symposium and begin exploring how to engage communities to identify real priorities, successes, and how to shape knowledge at the local level to provide valuable assets and tools.

Recommendations Summary

Throughout the symposium, several recommendations were also made. These recommendations summarized in five major areas: strategic communications, strengthening the science base, building partnerships, policy development and evaluation, and linking people to health services.

Strategic Communications

- Facilitate communications among all parties working to improve local environmental health.
- Better educate the general public, politicians, and individuals in medical education about key issues.
- Coordinate the promotion of important nutritional messages among the several Federal, state, and local programs, agencies, and organizations.
- Develop educational materials with community environmental health information that is not readily accessible.

- Create a health directory or office to help navigate through the Federal agencies involved in environmental justice and health disparity issues.

Strengthening the Science Base

- Use a Healthy Communities Model that incorporates community capacity, physical and social environment, environmental health stressors, and public health outcomes/healthy communities and their interactions.
- Develop methods to study environmental impact using a wellness model.
- Provide long-term support and modestly increase funding for community-based, community-controlled research.
- Provide research training for community and youth and cultural sensitivity training for visitors.
- Reward and appreciate community researchers outside academia and NIH.
- Sponsor pilots to advance practice.
- Develop practical assessment tools.
- Develop methods to study small populations.
- Believe in your medicine and the future. Accept and incorporate traditional ecological knowledge into Federal and state agencies and programs.

Building Partnerships

- Achieve integration of collaborative interagency and community partnerships that capture environmental justice principles and address health disparities to ensure that the resources are spent in the most productive ways.
- Build the capacity of communities through effective partnerships.
- Work more collaboratively with state officials.
- Establish ongoing method to coordinate, evaluate, and improve Federal efforts.

Policy Development and Evaluation

- Ensure that attention and resources are focused in ways that produce real impact.
- Build stronger connections between land use decisions, communities, and the public health process.
- Remove the burden of proof from the public.
- Promote physical education and healthier food choices in schools.
- Recognize that action is everything for environmental justice communities.
- Determine who will pay for expensive new technologies to address health disparities and when.
- Recognize emotional and spiritual well-being when appraising acceptable risks.
- Determine acceptable level of toxins from the perspective of what is acceptable to your family.
- Provide more funds to help tribes build their own environmental management infrastructure, as well as for tribe health and surveillance.
- Achieve legislative support for tribal sovereignty.
- Establish free standing American Indian/Alaska Native (AI/AN) Committees for all Federal agencies and in states with tribal land within their boundaries
- Develop new strategies for contaminated sites that take tribal rights into account.

Linking People to Health Services

- Identify practical solutions to common community concerns.
- Train all health care professionals in environmental medicine.

- Increase the number of summer externships and/or rotations for medical students, dental students, nurses, and other health care practitioners in the area of environmental medicine.
- Create faculty development programs in environmental medicine.
- Fund residency training in environmental medicine.
- Continue to provide continuing medical education in environmental medicine for physicians in practice.
- Adopt an interagency approach with Congress to addressing access to care and funding.
- Explore the use of telemedicine to enable primary care physicians to consult with occupational and environmental health specialists.
- Organize training that integrates all aspects of environmental health, including partnerships, capacity building, and risk assessment.

National Leadership Summit on Eliminating Racial and Ethnic Disparities in Health

2006

[NOTE: The following was taken from the Office of Minority Health/National Partnership for Action web page- http://minorityhealth.hhs.gov/npa/templates/browse.aspx?lvl=1&lvlid=11.]

Nearly 2,000 committed individuals attended the National Leadership Summit for Eliminating Racial and Ethnic Disparities in Health sponsored by the HHS Office of Minority Health (OMH). They provided the impetus to broaden the dialog beyond the health community, and establish the National Partnership for Action (NPA) (http://minorityhealth.hhs.gov/npa/templates/browse.aspx?lvl=1&lvlid=11) as a national movement. The summit stimulated a systems-oriented approach that addresses crosscutting, multilevel issues.

OMH responded by formulating initial NPA goals, but sought to establish the priorities for a national strategy using a community-oriented approach.

The process for developing what became the National Stakeholder Strategy was deliberate. It began by obtaining the views of community leaders and other stakeholders. Small "Community Voices" meetings, other focused sessions, and larger "Regional Conversations" stimulated analysis, input, and content refinement from community, professional, business, government, academic, and other representatives.

Throughout this process, a Federal Interagency Health Equity Team, now comprising representatives of HHS and 11 other Federal, cabinet-level departments, coordinated federal efforts.

Ultimately, a draft strategy was published for public review, and more than 2,000 comments were received, analyzed and considered.

The result is the *National Stakeholder Strategy for Achieving Health Equity (National Stakeholder Strategy) (*http://minorityhealth.hhs.gov/npa/templates/content.aspx?lvl=1&lvlid=33&ID=286*)*. It is a roadmap for eliminating health disparities through cooperative and strategic actions. *Regional Blueprints for Action* will align with the *National Stakeholder Strategy* to help guide action at the local, state, and regional levels. Targeted initiatives will be organized by partners across the public and private sectors in support of the NPA.

A second outcome is the HHS Action Plan to Reduce Racial and Ethnic Health Disparities

(http://minorityhealth.hhs.gov/npa/templates/content.aspx?lvl=1&lvlid=33&ID=285), which was released together with the National Stakeholder Strategy.

It outlines goals and actions HHS will take to reduce health disparities among racial and ethnic minorities. It builds on provisions of the Affordable Care Act.

It will be used by HHS agencies to assess the impact of policies and programs on racial and ethnic health disparities, and to promote integrated approaches, evidence-based programs and best practices to reduce these disparities.

Health Disparities Summit

2008

The Summit highlighted many of the complex biological and non-biological factors that influence health outcomes. Sessions offered best practice models in research, training, career development, clinical intervention, community outreach, and policy, being applied in communities around the nation and in different countries. Summit participants also had the opportunity to dialogue on topics related to health disparities such as health care reform, social determinants of health, partnerships, community, media, policy, science, and clinical practice involvement in health disparities, to provide input into shaping an aggressive agenda to eliminate health disparities.
http://www.nimhd.nih.gov/spotlight/nihsummit.asp

National Conversation

2009

The goal of this initiative was to develop an Action Agenda with clear, achievable recommendations to help government agencies and other organizations strengthen their efforts to protect the public from harmful chemical exposures. CDC and ATSDR engaged a broad range of groups and individuals—government agencies, professional organizations, tribal groups, community and nonprofit organizations, health professionals, business and industry leaders, and members of the public — to develop the Action Agenda (http://www.nationalconversation.us/).

Chapter 3: Achieve a More Complete Scientific Understanding of Chemicals and Their Health Effects
http://www.nationalconversation.us/action-agenda/chapter-3-science

Chapter 4: Protect Health and Wellness in Vulnerable Communities Affected by Environmental Chemical Exposures
http://www.nationalconversation.us/action-agenda/chapter-4-communities

Chapter 5: Strengthen the Public's Ability to Participate Effectively in Environmental Health Decision Making
http://www.nationalconversation.us/action-agenda/chapter-5-public-engagement

Strengthening Environmental Justice Research and Decision Making: A Symposium on the Science of Disproportionate Environmental Health Impacts

March 17-19, 2010

Research Needs Identified

Symposium participants recommended several actions to reduce research or data gaps, overcome limitations in the theories and methods for conducting environmental research, particularly research supported by federal government, and limitations in practice of risk assessment. The science recommendations are described on the web page listed below. The first sentence is a summary statement meant to capture the main points of the individual recommendations from the Symposium that follow, including recommendations from the Environmental Justice-Caucus letter that was sent to Lisa Garcia, Senior Advisor to EPA Administrator for Environmental Justice. -- http://www.epa.gov/ncer/events/calendar/2010/mar17/research.html

Follow-up actions from the 2010 Disproportionate Impacts Symposium:
http://www.epa.gov/ncer/ehs/ej/ongoing-actions-ej.pdf
EPA Plan EJ 2014 Science Implementation Plan
http://www.epa.gov/compliance/ej/resources/policy/plan-ej-2014/plan-ej-science-2011-09.pdf

HHS Environmental Justice Implementation Meeting

2012

U.S. Department of Health & Human Services Environmental Justice Plan
The 2012 HHS EJ Strategy (http://www.hhs.gov/environmentaljustice/strategy.html) provides direction for HHS efforts to achieve environmental justice as part of its mission by: (1) identifying and addressing disproportionately high and adverse human health and environmental effects on low-income populations and Indian Tribes, and (2) encouraging the fair treatment and meaningful involvement of affected parties with the goal of building healthy, resilient communities and reducing disparities in health and well-being associated with environmental factors. Driven by public input and HHS support, the strategy maintains the following three guiding principles:

- Create and implement meaningful public partnerships
- Ensure interagency and intra-agency coordination
- Establish and implement accountability measures

The 2012 HHS EJ Strategy is organized into four strategic elements; (1) Policy Development and Dissemination, (2) Education and Training, (3) Research and Data Collection, Analysis, and Utilization, and (4) Services. The 2012 HHS EJ Strategy reflects new and ongoing actions to be undertaken by HHS. The heightened coordination within and outside of HHS and the engagement of communities and other stakeholders will facilitate the implementation of the 2012 HHS EJ Strategy and support the realization of the vision.

Training: http://www.hhs.gov/environmentaljustice/strategy.html#strated
Research: http://www.hhs.gov/environmentaljustice/strategy.html#stratresearch

Science of Eliminating Health Disparities Summit

2012

Summit Goals

The 2012 Summit focused on Building a Healthier Global Society by Integrating Science, Practice, and Policy, and specifically aims to:

- Provide scientific evidence to inform immediate policies and actions to confront health disparities issues facing regional, national and global societies
- Provide the practical steps on how the scientific evidence for addressing health disparities could be translated into practice in different communities and global settings
- Identify practical innovations in translational research to inform practice and policy
- Gather recommendations on evidence-based science policy and practical objectives and measures that can be tracked for progress over the next ten years
- Publish recommendations and findings that will contribute to the development of an integrated strategy for addressing national and global inequality

http://nihrecord.od.nih.gov/newsletters/2013/02_01_2013/story2.htm

Meeting Participants

Last Name	First Name	Organization	City	State	Phone Number	Email address
Adams-Campbell	Lucile L.	Georgetown University	Washington	DC	202-687-1860	lla9@georgetown.edu
Allerton	Barbara	Pennsylvania Department of Health	Harrisburg	PA	717-787-3350	ballerton@pa.gov
Anderko	Laura	Georgetown University	Washington	DC	202-550-6988	La266@georgetown.edu
Anderson	Beth	NIEHS	Research Triangle Park	NC	919-932-7343	Beth.anderson@nih.gov
Anderson	Emily	Loyola University Chicago	Maywood	IL	708-327-9229	emanderson@lumc.edu
Arcury	Thomas	Wake Forest School of Medicine	Winston-Salem	NC	336-716-9438	tarcury@wakehealth.edu
Arosemena	Farah	Tulane University School of Public Health and Tropical Medicine (SPHTM)	New Orleans	LA	504-988-9407	faroseme@tulane.edu
Baker	Diane	UNC-Chapel Hill	Chapel Hill	NC	919-537-3269	diane_baker@dentistry.unc.edu
Barnes	Katie	UNC-Chapel Hill Center for Health Promotion and Disease Prevention	Chapel Hill	NC	919-843-6611	katiebarnes@unc.edu
Barzyk	Tim	U.S. Environmental Protection Agency	Research Triangle Park	NC	919-541-1520	barzyk.timothy@epa.gov
Baumgart-Getz	Adam	U.S. EPA Office of Air Quality Planning and Standards (OAQPS) Community and Tribal Programs Group (CTPG)	Durham	NC	919-541-0386	baumgart-getz.adam@epa.gov
Beard	Sharon	NIEHS Worker Education and Training Program	Research Triangle Park	NC	919-541-1863	beard1@niehs.nih.gov
Behrhorst	Daesy	Louisiana Language Access Coalition	New Orleans	LA	504-568-5700	dbehrh@lsuhsc.edu
Bennett	Nicole	Mulkey Engineers & Consultants	Cary	NC	919-858-1921	nbennett@mulkeyinc.com
Berg	Zara	Fort Peck Community College	Poplar	MT	406-768-6367	zberg@fpcc.edu

Last Name	First Name	Organization	City	State	Phone Number	Email address
Bethell	Monique	N.C. Department of Health and Human Services, Division of Public Health	Durham	NC	919-610-2142	monique.bethell@dhhs.nc.gov
Birnbaum	Linda	NIEHS	Research Triangle Park	NC	919-541-3201	birnbaumls@mail.nih.gov
Boutin-Foster	Carla	Weill Cornell Medical College	New York	NY	646-962-5010	cboutin@med.cornell.edu
Brody	Julia	Silent Spring Institute	Newton	MA	617-332-4288	brody@silentspring.org
Brown	Phil	Northeastern University	Boston	MA	617-373-7407	p.brown@neu.edu
Buchanan	Sharunda	U.S. CDC / National Center for Environmental Health (NCEH)	Atlanta	GA	770-488-7362	sdb4@cdc.gov
Burwell	Kristen	University of Maryland	College Park	MD	617-637-5929	kburwell@umd.edu
Bush	Kathleen	Association of Schools of Public Health (ASPH) / U.S. EPA	Research Triangle Park	NC	919-541-7921	Kathleenfbush@gmail.com
Callan	Rich	U.S. Environmental Protection Agency	Washington	DC	703-347-8051	callan.richard@epa.gov
Carter	Lana	A Step Forward, Inc./Gullah Geechee Commissioner	Riegelwood	NC	910-616-0273	astep4ward2002@yahoo.com
Carter	Tarase	Tulane University	New Oreans	LA	504-988-1923	tcarter6@Tulane.edu
Charles	Simone	Georgia Southern University	Statesboro	GA	912-478-1317	scharles@georgiasouthern.edu
Chien-Hale	Miranda	Occidental College	Los Angeles	CA	408-505-8471	mchienhale@gmail.com
Clark	Charlotte	Duke University, Nicholas School of the Environment	Durham	NC	919-684-3159	cclark@duke.edu
Coker	Eric	Oregon State University	Corvallis	OR	206-235-2859	escoker@gmail.com
Collman	Gwen	NIEHS	Research Triangle Park	NC	919-541-4980	collman@niehs.nih.gov

Last Name	First Name	Organization	City	State	Phone Number	Email address
Constantine	Gelena	U.S. Environmental Protection Agency	Washington	DC	202-564-0362	Constantine.Gelena@epa.gov
Cook Barreiro	Sherrill Katsi	Running Strong for American Indian Youth	Alexandria	VA	202-248-7515	katsi_cook@yahoo.com
Cooper	Sharon	University of Texas School of Public Health	San Antonio	TX	210-276-9008	sharon.p.cooper@uth.tmc.edu
Corey	Fred	Aroostook Band of Micmacs	Presque Isle	ME	207-764-7765	fcorey@micmac-nsn.gov
Cowles	Beck	Ecology Center	Berkeley	CA	510-220-6354	beck@ecologycenter.org
Crane	Justin	MDB, Inc.	Durham	NC	919-794-4702	jcrane@michaeldbaker.com
Crear	Jauna	Crear Law Firm	New Orleans	LA	504-365-1545	attorneycrear@gmail.com
Crider	Raquel	Food Ingredient & Health Research Institute	Harpers Ferry	WV	304-268-5778	rcride01@shepherd.edu
Croisant	Sharon	University of Texas Medical Branch	Galveston	TX	409-772-9133	spetrone@utmb.edu
Dalemarre	Laura	University of Maryland	College Park	MD	301-405-5706	ldalemar@umd.edu
Dash	Chiranjeev	Georgetown University	Washington	DC	202-687-1542	cd422@georgetown.edu
DeFelice	Nicholas	UNC-Chapel Hill	Chapel Hill	NC	919-843-5786	defelice@email.unc.edu
Dilworth	Caroline	NIEHS	Research Triangle Park	NC	919-541-7727	dilworthch@niehs.nih.gov
Dotson	Myra	Carolina Concerned Citizens	Mebane	NC	919-270-7534	myradotson@hotmail.com
Dotson Newman	Ogonnaya	WE ACT for Environmental Justice	New York	NY	212-961-1000	ogonnaya@weact.org
Doyle	John	Crow Environmental Health Steering Committee	Crow Agency	MT	406-679-0363	johndoyle91@gmail.com

Last Name	First Name	Organization	City	State	Phone Number	Email address
Drew	Christie	NIEHS, DERT, Program Analysis Branch	Research Triangle Park	NC	919-541-3319	drewc@niehs.nih.gov
DuBose	Melvin	Prayer Alter Network	Williamsboro	NC	336-202-3894	drmelvindubose@aol.com
Dufault	Renee	Food Ingredient & Health Research Institute	Ocean View	HI	808-345-6864	rdufault@foodingredient.info
Easley	Linda	Siena Heights University	East Lansing	MI	734-428-7514	LEasley@sienaheights.edu
Economos	Jeannie	Farmworker Association of Florida	Apopka	FL	407-886-5151	farmworkerassoc@aol.com
Edelstein	Michael	Ramapo College of New Jersey	Mahwah	NJ	201-684-7745	medelste@ramapo.edu
Eggers	Margaret	Little Big Horn College	Crow Agency	MT	406-600-0783	eggersm@lbhc.edu
Ekenga	Christine	NIEHS	Research Triangle Park	NC	919-541-0420	christine.ekenga@nih.gov
Epps-Price	Lena	U.S. EPA Office of Air Quality Planning and Standards (OAQPS)	Research Triangle Park	NC	919-541-5573	epps-price.lena@epa.gov
Ettinger	Adrienne	Yale School of Public Health	New Haven	CT	203-764-9375	adrienne.ettinger@yale.edu
Felicia	Dayle	Montana State University	Bozeman	MT	406-679-2138	candylafrance@yahoo.com
Fernandez	Senaida	University of California, Office of the President (UCOP)	Oakland	CA	510-506-5512	senaida.fernandez@ucop.edu
Fields	Timothy	MDB, Inc.	Washington	DC	202-331-0060	tfields@michaeldbaker.com
Finn	Symma	NIEHS	Durham	NC	919-541-4258	finns@niehs.nih.gov
Flocks	Joan	Center for Governmental Responsibility, Levin College of Law, University of Florida	Gainesville	FL	352-273-0837	flocks@law.ufl.edu
Folayan	Sunya	The Empowerment Project, Inc.	Charlotte	NC	704-264-9575	ep.inc.org@gmail.com

Last Name	First Name	Organization	City	State	Phone Number	Email address
Ford	Tim	University of New England	Biddeford	ME	207-776-2767	tford@une.edu
Fortunato	Karla	Health and Environmental Funders Network	Bethesda	MD	301-656-5540	kfortunato@hefn.org
Fortune	Kira	Pan American Health Organization/ Regional Office of the World Health Organization	Washington	DC	202-974-3102	fortunek@paho.org
Freberg	Whitney	MDB, Inc	Durham	NC	919-213-4904	wfreberg@michaeldbaker.com
Girolami	Martha	Chatham Research Group	Apex	NC	919-362-5759	mgirolami@mac.com
Glover	Saundra	Institute of Disparities, Arnold School of Public Health	Columbia	SC	803-251-6300	sglover@mailbox.sc.edu
Gonzales	Melissa	University of New Mexico	Albuquerque	NM	505-272-9598	mgonzales@salud.unm.edu
Gordon	Garrison	U.S. Environmental Protection Agency	Research Triangle Park	NC	252-532-2911	gordon.garrison@epa.gov
Grant	Gary	North Carolina Environmental Justice Network	Tillery	NC	252-826-3017	tillery@aol.com
Graves	Neasha	UNC-Chapel Hill Breast Cancer and the Environment Research Program	Chapel Hill	NC	919-966-3746	neasha_graves@unc.edu
Gray	Kathleen	UNC-Chapel Hill Institute for the Environment	Chapel Hill	NC	919-966-9799	kathleen_gray@unc.edu
Guajardo	Andrea	Conejos County Clean Water, Inc.	Antonito	CO	720-939-9948	andieguajardo@gmail.com
Guidry	Virginia	UNC-Chapel Hill School of Public Health	Chapel Hill	NC	919-966-7438	virginia.guidry@unc.edu
Guzy	Elizabeth	Harvard School of Public Health Superfund Research Program	Boston	MA	720-308-8726	eguzy@hsph.harvard.edu
Hajat	Anjum	University of Washington	Seattle	WA	206-897-1655	anjumh@uw.edu
Hamilton	Rhonda	Georgetown University	Washington	DC	202-687-5367	rnh12@georgetown.edu

Last Name	First Name	Organization	City	State	Phone Number	Email address
Hammer	Monica	University of Michigan School of Public Health	Ann Arbor	MI	734-763-0761	mhammer@networkforphl.org
Hammond	Davyda	Germanna Community College	Fredericksburg	VA	540-834-1010	dhammond@germanna.edu
Hargrove	William	Center for Environmental Research & Management (CERM) / University of Texas at El Paso (UTEP)	El Paso	TX	915-747-6942	wlhargrove@utep.edu
Hauchman	Fred	U.S. EPA Office of Research and Development	Washington	DC	202-564-3151	Hauchman.fred@Epa.gov
Heacock	Michelle	NIEHS	Research Triangle Park	NC	919-541-7824	heacockm@niehs.nih.gov
Heyer	Nicholas	Battelle Memorial Institute	Seattle	WA	206-528-3224	heyern@battelle.org
Hirsch	Naomi	Oregon State University	Corvallis	OR	541-737-8105	naomi.hirsch@oregonstate.edu
Hood	Ernie	Bridport Services, LLC	Durham	NC	919-732-1856	hood.ernie@gmail.com
Hoover	Elizabeth	Brown University	Providence	RI	518-265-9400	Elizabeth_M_Hoover@brown.edu
Howard	Brittany	ASPH/U.S. EPA Office of Research & Development	Durham	NC	919-541-7783	howard.brittany@epa.gov
Howarth	Marilyn	University of Pennsylvania	Gladwyne	PA	610-642-2150	howarthmv@gmail.com
Hricko	Andrea	University of Southern California	Los Angeles	CA	323-442-3077	ahricko@usc.edu
Huderson	Ashley	Georgetown Lombardi Comprehensive Cancer Center	Washington	DC	202-678-0347	ach105@georgetown.edu
Hughes	Chip	NIEHS Worker Education and Training Program	Chapel Hill	NC	919-541-0127	hughes3@niehs.nih.gov
Humble	Mike	NIEHS	Research Triangle Park	NC	919-316-4621	humble@niehs.nih.gov
Israel	Barbara	University of Michigan	Ann Arbor	MI	734-647-3184	ilanais@umich.edu

Last Name	First Name	Organization	City	State	Phone Number	Email address
Jackson	Melvin	Strengthening The Black Family	Raleigh	NC	919-455-7849	melvin.jackson@wakegov.com
Jacobs	Lisa	Mixed Methods Research Lab- University of Pennsylvania		PA	215-746-4885	lisa.jacobs@uphs.upenn.edu
Jensen	Anna	Toxic Free NC	Raleigh	NC	919-833-8655	anna@toxicfreenc.org
Jim	Rebecca	Local Environmental Action Demanded (LEAD)	Vinita	OK	918-256-5269	rjim@neok.com
Johnson, Jr.	James H.	U.S. Environmental Protection Agency	Washington	DC	703-347-8200	johnson.jim@epamail.epa.gov
Johnston	Jill	UNC-Chapel Hill	Chapel Hill	NC	240-447-5099	jillj@unc.edu
Juarez	Paul	University of Tennessee Health Science Center	Memphis	TN	901-448-2016	pjuarez@uthsc.edu
Kaufman	Amanda	Association of Schools of Public Health (ASPH) / U.S. EPA	Carrboro	NC	919-724-2290	akaufman47@gmail.com
Kearney	William	Coley Springs Missionary Baptist Church	Warrenton	NC	252-257-1491	handsincorporated@earthlink.net
Kennedy	Helena	NIEHS	Research Triangle Park	NC	919-316-4813	helena.kennedy@nih.gov
Kyle	Amy D	University of California	Berkeley	CA	510-642-8847	adkyle@berkeley.edu
Lamanna	Beth	UNC-Chapel Hill School of Nursing	Chapel Hill	NC	919-966-5822	lamanna@email.unc.edu
Lamontagne	Nancy	MDB, Inc.	Durham	NC	919-617-1330	NLamontagne@michaeldbaker.com
Laumbach	Robert	Rutgers University, Robert Wood Johnson Medical School	Piscataway	NJ	848-445-6084	laumbach@eohsi.rutgers.edu
Lefthand-Begay	Clarita	Univeristy of Washington	Seattle	WA	206-856-7658	clarita@uw.edu
Lewis	David	Neural Dynamics Research Group, University of British Columbia	Watkinsville	GA	706-296-3675	LewisDaveL@aol.com

Last Name	First Name	Organization	City	State	Phone Number	Email address
Lewis	Johnnye	Community Environmental Health Program, UNM-HSC-COP	Albuquerque	NM	505-991-3489	jlewis@cybermesa.com
Lindsey	Marti	University of Arizona	Tucson	AZ	520-626-3692	lindsey@pharmacy.arizona.edu
Lorenz	Alyson	Association of Schools of Public Health (ASPH) / U.S. EPA	Washington	DC	202-566-1920	lorenz.alyson@epa.gov
Lowman	Amy	UNC-Chapel Hill	Chapel Hill	NC	919-966-1306	amy_lowman@unc.edu
Lu	Chensheng	Harvard School of Public Health	Boston	MA	617-998-8811	cslu@hsph.harvard.edu
Luchsinger	Jose	Columbia University	New York	NY	212-305-4730	jal94@columbia.edu
MacDonald	Amy	UNC-Chapel Hill COEC	Chapel Hill	NC	919-966-2463	amy.macdonald@unc.edu
MacDonald Gibson	Jacqueline	UNC-Chapel Hill	Chapel Hill	NC	919-966-7892	jackie.macdonald@unc.edu
MacHardy	Nathaniel	UNC-Chapel Hill Department of Epidemiology	Chapel Hill	NC	919-225-2689	machardy@unc.edu
Madrigal	Daniel	Center for Environmental Research and Children's Health, UC Berkeley	Berkeley	CA	510-642-9508	dsmadrigal@gmail.com
March	Dana	Northern Manhattan Center of Excellence for Minority Health and Health Disparities, Columbia University	New York	NY	917-538-0038	dm2025@columbia.edu
Marder	Elizabeth	Emory University Rollins School of Public Health	Atlanta	GA	916-996-2333	mekeati@emory.edu
Mason	Byron	U.S. Department of Health and Human Services	Washington	DC	202-205-6524	Byron.Mason@hhs.gov
Matthews-Juarez	Pat	University of Tennessee Health Science Center	Memphis	TN	901-448-7229	pmatthe3@uthsc.edu
Maxson	Pamela	Children's Environmental Health Initiative	Durham	NC	919-812-8389	pm12@duke.edu
McCauley	Linda	Nell Hodgson Woodruff School of Nursing/Emory University	Atlanta	GA	404-727-7975	linda.mccauley@emory.edu

Last Name	First Name	Organization	City	State	Phone Number	Email address
McDonald	Mary Anne	Public Health Research	Durham	NC		m.a.mcdonald99@gmail.com
McGuinn	Laura	UNC-Chapel Hill	Chapel Hill	NC	847-561-6923	lmcguinn@live.unc.edu
Metzger	Tracie	Pink Ribbon Girls	Cincinnati	OH	513-207-2421	tracie@pinkribbongirls.org
Miller	Aubrey	NIEHS	Bethesda	MD	301-496-3511	miller.aubrey@nih.gov
Miller	Gary	Emory University- Rollins School of Public Health	Atlanta	GA	404-712-8582	gwmille@emory.edu
Miller	Pamela	Alaska Community Action on Toxics	Anchorage	AK	907-222-7714	pamela@akaction.org
Miranda	Marie Lynn	University of Michigan School of Natural Resources and Environment	Ann Arbor	MI	734-764-2550	mlmirand@umich.edu
Modica	Linda Cataldo	Appalachian Peace Education Center	Jonesborough	TN	423-676-2925	lcmodica@aol.com
Modica	Loretta	Appalachian Peace Education Center	Jonesborough	TN	423-676-2925	lcmodica@aol.com
Moran	Kerri	MDB, Inc.	Durham	NC	919-794-4700	kmoran@michaeldbaker.com
Morrone	Michele	Ohio University/Appalchian Rural Health Institute	Athens	OH	740-593-9549	morrone@ohio.edu
Muhammad	Naeema	North Carolina Environmental Justice Network	Rocky Mount	NC	252-314-0703	saladin62@aol.com
Murray	Rianna	University of Maryland	College Park	MD	301-405-5509	rmurray@umd.edu
Naman	Julia	UNC-Chapel Hill	Chapel Hill	NC	706-536-3621	jnaman@live.unc.edu
Naney	Charley	CEEJH	Elkridge	MD	617-543-9994	cnaney@umd.edu
Nolan	Lynda	University of pennsylvania	Philadelphia	PA	908-307-1424	lynolan@nursing.upenn.edu

Last Name	First Name	Organization	City	State	Phone Number	Email address
Nolen	Alexandra	Center to Eliminate Health Disparities, University of Texas Medical Branch	Galveston	TX	409-974-0144	abnolen@utmb.edu
Nriagu	Jerome	University of Michigan School of Public Health	Ann Arbor	MI	734-936-0706	jnriagu@umich.edu
O'Fallon	Liam	NIEHS	Morrisville	NC	919-541-7733	ofallon@niehs.nih.gov
Olden	Kenneth	U.S. EPA National Center for Environmental Assessment	Washington	DC	703-347-0283	Olden.kenneth@Epa.gov
Olvera	Hector A.	University of Texas at El Paso	El Paso	TX	915-747-6518	holvera@utep.edu
O'Shea	Shannon	U.S. Environmental Protection Agency	Research Triangle Park	NC	919-541-2036	O'Shea.Shannon@epa.gov
Packenham	Joan	NIEHS, DIR, Clinical Research Program	Research Triangle Park	NC	919-541-0766	packenhm@niehs.nih.gov
Palate	Nancy	California Department of Public Health	Richmond	CA	510-620-5845	nancy.palate@cdph.ca.gov
Parada	Humberto	UNC-Chapel Hill Gillings School of Global Public Health	Chapel Hill	NC	919-636-9236	hparada@live.unc.edu
Park	Alice	Community-Campus Partnerships for Health	Seattle	WA	206-666-3406	cbpr@ccph.info
Parra	Kimberly	Clinica de Salud Valle	Salinas	CA	831-783-2671	klparra@gmail.com
Parras	Bryan	T.E.J.A.S.	Houston	TX	281-501-3221	lucas77@gmail.com
Pattison	Fawn	Toxic Free NC	Raleigh	NC	919-833-5333	fawn@toxicfreenc.org
Pearson	Melanie	Emory University Rollins School of Public Health	Atlanta	GA	404-712-9647	mapears@emory.edu
Pettibone	Kristi	NIEHS, DERT, Program Analysis Branch	Durham	NC	919-541-7752	Pettibonekg@niehs.nih.gov
Pfister	Edward	U.S. Department of Health and Human Services	Washington	DC	202-619-0788	edward.pfister@hhs.gov

Last Name	First Name	Organization	City	State	Phone Number	Email address
Pomales	Ana	U.S. Environmental Protection Agency	Washington	DC		pomales.ana@epa.gov
Poole	Amy	East Tennessee State University	Johnson City	TN	423-773-2498	ampoole74@gmail.com
Prochaska	John	University of Texas Medical Branch	Galveston	TX	979-574-6111	joprocha@utmb.edu
Puente	Molly	NIEHS	Durham	NC	919-541-1373	puentem@mail.nih.gov
Quandt	Sara	Wake Forest School of Medicine	Winston-Salem	NC	336-716-6015	squandt@wakehealth.edu
Quintero	Samantha	UCLA Labor Occupational Safety and Health Program	Los Angeles	CA	310-825-9994	squintero@irle.ucla.edu
Radhakrishnan	Niranjani	UNC-Chapel Hill Student Wellness	Chapel Hill	NC	865-414-8132	janirad@email.unc.edu
Rajapakse	Nishadi	National Institutes of Health (NIH)	Bethesda	MD	301-496-4338	chandima.rajapakse@nih.gov
Ramirez-Andreotta	Monica	Northeastern University	Boston	MA	617-373-7326	m.ramirezandreotta@neu.edu
Ranco	Darren	University of Maine	Orono	ME	207-581-9485	darren.ranco@maine.edu
Rehr	Rebecca	Association of Schools of Public Health (ASPH) / U.S. EPA	Washington	DC	202-566-1918	rcrehr@gmail.com
Reyes	Damaris	Good Old Lower East Side	New York	NY	212-358-1231	dreyes@goles.org
Richmond	Alan	North Carolina Community Health Leadership Roundtable	Raleigh	NC	919-880-9428	Ncpcadvocate@yahoo.com
Ricks	Boris	California State University, Northridge	Northridge	CA	818-677-5113	boris.ricks@csun.edu
Riley	Isaretta	Duke University Hospital	Durham	NC	917-678-5448	isaretta.riley@duke.edu
Robinson	Caren	U.S. EPA Office of Chemical Safety and Pollution Prevention	Washington	DC	202-564-0544	robinson.caren@epa.gov

Last Name	First Name	Organization	City	State	Phone Number	Email address
Rock	Tommy	Northern Arizona University	Flagstaff	AZ	505-717-6954	tr73@nau.edu
Ruffin	John	National Institute on Minority Health and Health Disparities (NIMHD)	Bethesda	MD	301-402-1366	John.Ruffin@nih.hhs.gov
Ruiz	Jazmin	U.S. Environmental Protection Agency	Research Triangle Park	NC	919-541-3902	Ruiz.Jazmin@epa.gov
Runkle	Jennifer	Emory University	Atlanta	GA	404-712-9243	jennifer.r.runkle@emory.edu
Ryan	Patrick	Cincinnati Children's Hospital Medical Center	Cincinnati	OH	513-803-4704	patrick.ryan@cchmc.org
Sarantis	Heather	Commonweal	Berkeley	CA	510-647-9689	heather@healthandenvironment.org
Scammell	Madeleine	Boston University School of Public Health	Boston	MA	617-638-4454	MLS@BU.EDU
Schaider	Laurel	Harvard School of Public Health	Boston	MA	617-384-8804	lschaide@hsph.harvard.edu
Schultz	Connie	Toxic Free NC	Kenly	NC	919-901-4159	connie0schultz@hotmail.com
Schulz	Amy	University of Michigan	Ann Arbor	MI	734-647-0221	amy@schulz.com
Seguinot-Medina	Samarys	Alaska Community Action on Toxics	Anchorage	AK	907-222-7714	samarys@akaction.org
Serres	Drew	New Kensington Community Development Corporation	Philadelphia	PA	215-427-0350 x116	dserres@nkcdc.org
Shepard	Peggy	WE ACT for Environmental Justice	New York	NY	212-961-1000	peggy@weact.org
Shipp	Eva	Texas A&M School of Rural Public Health	College Station	TX	713-291-3535	eshipp@srph.tamhsc.edu
Shuffler	David	Youth Ministries for Peace and Justice	Bronx	NY	718-328-5622	dshuffler@ympj.org
Smarr	Melissa	University of Michigan School of Public Health	Ann Arbor	MI	704-974-1513	msmarr@umich.edu

Last Name	First Name	Organization	City	State	Phone Number	Email address
Smith	Kenneth	National Association of County and City Health Officials	Washington	DC	202-756-0162	ksmith@naccho.org
Stevens	Doug	Salish Kootenai College	Pablo	MT	406-275-4945	doug_stevens@SKC.EDU
Steward	John	Georgia State University	Atlanta	GA	404-413-1137	jsteward@gsu.edu
Subra	Wilma	Subra Company/Louisiana Environmental Action Network	New Iberia	LA	337-367-2216	subracom@aol.com
Suh	Marissa	Yale School of Public Health	New Haven	CT	314-210-8542	minhyung.suh@yale.edu
Sullivan	John	University of Texas Medical Branch, Sealy Center for Environmental Health & Medicine	Galveston	TX	409-747-1246	josulliv@utmb.edu
Sunil	Thankam	University of Texas at San Antonio	San Antonio	TX	210-458-5617	thankam.sunil@utsa.edu
Tetteh	Myra	University of Michigan	Ann Arbor	MI	734-763-0412	mtetteh@umich.edu
Thompson	Claudia	NIEHS	Research Triangle Park	NC	919-541-4638	thomps14@niehs.nih.gov
Thorsos	Eileen	Duke University Superfund Research Center, Research Translation Core	Durham	NC	919-613-8207	eileen.thorsos@duke.edu
Thurston	George	New York University School of Medicine	New York	NY	845-731-3564	george.thurston@nyu.edu
Tovar	J. Antonio	Farmworker Association of Florida	Gainesville	FL	954-260-4287	tonytovar@hotmail.com
Tovar	Jessica	Long Beach Alliance for Children with Asthma	Long Beach	CA	714-955-9107	jessicatovar2@gmail.com
Toy	Peggy	UCLA Center for Health Policy Research	Los Angeles	CA	310-794-0658	peggytoy@ucla.edu
Truax	Carla	University of Southern California	Los Angeles	CA	323-442-2745	ctruax@usc.edu
Trush	Michael	Johns Hopkins Center in Urban Environmental Health	Baltimore	MD	410-955-2873	mtrush@jhsph.edu

Last Name	First Name	Organization	City	State	Phone Number	Email address
Tsin	Andrew	University of Texas at San Antonio	San Antonio	TX	210-458-6635	atsin@utsa.edu
Turner	Ebony	Dillard University Deep South Center for Environmental Justice	New Orleans	LA	504-816-4005	turner1596@aol.com
Valdez	Melissa	The University of Arizona	tucson	AZ	520-490-9371	mkvaldez@email.arizona.edu
Vick	Therese	Blue Ridge Environmental Defense League	Raleigh	NC	919-345-3673	therese.vick@gmail.com
Waghiyi	Vi	Alaska Community Action on Toxics	Anchorage	AK	907-222-7714	vi@akaction.org
Wagner	John	North Carolina Environmental Justice Network	Pittsboro	NC	919-542-4320	john_wagner@sarbo.net
Walter	Lynne	Toxic Free NC	Raleigh	NC	919-833-1123	lynne@toxicfreenc.org
Wang	FengQing	Tufts University School of Medicine	Boston	MA	617-595-2567	tinaw202@hotmail.com
Ware	Sharon	Benedictine University	Lisle	IL	919-995-4680	sware@ben.edu
Washington	Chanetta	UNC-Chapel Hill	Chapel Hill	NC	919-843-9631	chanetta_washington@med.unc.edu
Wat	Eric	Special Service for Groups	Los Angeles	CA	213-553-9350	ewat@ssgmain.org
Watkins	Beverly-Xaviera	Weill Cornell Medical College	New York	NY	917-612-6423	bew2012@med.cornell.edu
Whitehead	LaToria	U.S. CDC / National Center for Environmental Health (NCEH)	Atlanta	GA	404-310-4176	ceq6@cdc.gov
Wilkins	Donele	Green Door Initiative	Detroit	MI	313-922-8055	donele@greendoorinitiative.org
Williams	D'Ann	Johns Hopkins School of Public Health	Baltimore	MD	410-614-5755	dlwillia@jhsph.edu
Wilson	Sacoby	University of Maryland	College Park	MD	202-230-2881	swilson2@umd.edu

Last Name	First Name	Organization	City	State	Phone Number	Email address
Wing	Steve	University of North Carolina	Chapel Hill	NC	919-966-7416	steve_wing@unc.edu
Woodis	Wilbur	Indian Health Service	Rockville	MD	301-443-1676	Wilbur.woodis@ihs.gov
Wyland	Nancy	University of Iowa	Iowa City	IA	319-335-4756	nancy-wyland@uiowa.edu
Wylie	Sara	Northeastern University	Boston	MA	773-495-9090	s.wylie@neu.edu
Yin	Xianbin	Community Assessment of Freeway Exposure and Health (CAFEH)	Boston	MA	203-893-7963	chinatownresidents@gmail.com
Young	Sara	Crow Environmental Health Steering Committee	Billings	MT	406-697-2393	slyoung@montana.edu
Zamore	Wig	Somerville Transportation Equity Partnership	Somerville	MA	617-625-5630	wigzamore@gmail.com
Zarate	Oscar	Silent Spring Institute	Newton	MA	617-332-4288	zarate@silentspring.org
Zuco	Arthur	U.S. Environmental Protection Agency	Research Triangle Park	NC	919-541-4883	zuco.arthur@epa.gov

Environmental Health Disparities and Environmental Justice Meeting

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