



Communication Research in Environmental Health Sciences: Environmental Health Literacy

September 22-24, 2014

NIEHS Building 101, Rodbell Auditorium • Research Triangle Park

Workshop Abstracts

Session 1

Building consensus on the skills associated with Environmental Health Literacy

Shaw-Ree Chen, *Trillium Health*

Marti Lindsey, *University of Arizona*

What we are presenting:

We will be presenting the results of a study conducted by the Universities of Arizona and Rochester. The purpose of the research was to build consensus on knowledge and skills, among environmental health professionals, concerning Environmental Health Literacy (EHL). This presentation will focus on unexpected differences discovered about how participants rated knowledge versus skills as “essential.”

What participants will do:

During this workshop, we want participants to drill down to the skills they feel are essential to EHL. Our goal is to identify the different skills that workshop participants feel are important for basic EHL, begin to break these skills down into measurable components, and report back to the EH community. The long term goal of the study is to develop measures of EHL in diverse populations. However, we are concerned by the lack of agreement concerning what skill items were essential to EHL. There are many potential reasons that the EHL study was unable to capture consensus on the importance of skills to EHL, and we believe this workshop will move us closer to an agreed upon set of skills.

What participants need to prepare to help make the session great:

Participants are asked to come to the conference with a list of skills you think are essential for EHL. Do your best to write those skills in measurable terms and select discrete teachable skills. For example “know how to find information on environmental health issues” may be a skill you want to propose but you might suggest that we don’t want people to find just ANY information on environmental health issues, but reliable information. How would they do that? What skills would they need to discern reliable versus unreliable information?

How Does the Teacher Teach? Enhancing EH Literacy Strategies and Evaluation of Healthcare Professionals

Neasha Graves, *UNC- Chapel Hill*

Valerie Garrison, *University of Rochester Medical Center*

What we are presenting:

Healthcare professionals view environmental health exposures as an important part of disease prevention, yet environmental health topics are rarely discussed in healthcare settings. Barriers to addressing environmental health hazards may include limited time with clients and patients, insufficient training with information and resources to share with patients, or concerns about scientific uncertainty for exposure and risk.

What participants will do:

NIEHS- funded Environmental Health Community Outreach and Engagement Cores at the University of North Carolina – Chapel Hill and the University of Rochester have worked with various healthcare professional groups to bridge these gaps. This round table discussion session will begin with an overview of outreach and evaluation strategies used by UR and UNC to increase environmental health literacy among community health workers, OB-GYN residents, prenatal care nurses and other professionals. Participants will then break into round table groups to develop an outreach and evaluation plan for healthcare providers in their own localities. Participants will consider their target audience (e.g., home nurses, residents, doctors, etc) and their audience's unique educational needs.

What participants need to prepare to help make the session great:

Participants should think about topics of interest, target audience(s), and potential metrics of success prior to the workshop.

NLM: Your Connection to Free K-12 Environmental Health Resources

Andrew Plumer, *National Library of Medicine*

What we are presenting:

Explore the National Library of Medicine K-12 environmental health resources for teachers, students and the general public. Reviewing curriculum materials developed to be used in afterschool programs, in the classroom or in an interdisciplinary program that connects science and society. The lessons and activities of the curriculum combine research on the Tox Town and Environmental Health Student portal sites with hands-on experiments and communication and social action activities.

What participants will do:

Participate in a classroom activity the “Great Debate: Bottled vs. Tap Water” using the NLM resources and curriculum materials.

What participants need to prepare to help make the session great:

Discuss ways in which the resources can enhance environmental health literacy in communities. Attendees should bring their own laptop computers or tablets to use during the session activity. Note: Laptops are preferred as some of the websites presented and needed to complete the activity use Flash.

Epigenetics, the Environment, and iPads: Development and Evaluation of Educational Materials for Latino Farmworkers and Non-Farmworkers

Joanne Sandberg, Timothy Howard, and Phillip Summers, *Wake Forest School of Medicine*

What we are presenting:

This interactive session will provide an overview of the development of a Spanish-language video that teaches Latino men and women in farmworker and non-farmworker communities about epigenetics in the context of environmental exposures. It will address the process through which we conducted our needs assessment to gauge existing knowledge (systematic analysis of semi-structured in-depth interviews) and illustrate how the assessment guided subsequent steps using exemplary quotations. We will also present the different stages of the development of the culturally specific video, from identification of the key concepts to be addressed, to development of multiple iterations of the storyboard, to the use of focus groups to identify how to improve the content, to the final video. Multiple iterations of the storyboard and the final video will be presented. Practical suggestions about the use of technology, including the use of tablets, hotspots, and internet-related resources more generally, to communicate environmental health information will be provided. We will discuss the development of the instrument to evaluate educational materials and present preliminary process and outcome evaluation. Presenters will encourage questions and facilitate discussion throughout the session. Participants will join one of three breakout groups during the last 20 minutes to address selected topic in greater depth.

What participants will do:

Activities include the development of interview guide to conduct needs assessment with specific community and hands on activities with tablet to optimize their use for data collection viewing resources and to identify internet-based resources.

By the end of the session, participants will be able to:

1. Discuss strategies to assess culturally specific health-related knowledge and beliefs held by a targeted population.
2. Identify how culturally specific knowledge can influence different stages of program design.
3. Identify how current technology can be leveraged to advance culturally-specific environmental health communication.

What participants need to prepare to help make the session great:

No preparation is required for this workshop. Participants who have tablets (e.g., iPads) are encouraged to bring them and partner with those who do not have tablets.

Got Apathy about Air Pollution and Climate Change? Use LEGO® Bricks to Foster Environmental Health Literacy

Kathleen Vandiver, *MIT Center for Environment Health Sciences*

What we are presenting:

Please come if you're an educator interested in learning an enjoyable way to impart the key concepts of climate change and air pollution to people of all ages. LEGO bricks will be used to represent atoms. We will be building many kinds molecules to help make the abstract concepts both concrete and visual. Typically there are some nice ah-ha! moments! After this training, you could easily take these tools into the classroom, to an informal afterschool program, or to your science table at the local festival.

What participants will do:

Participants will be able to model the abstract chemistry concepts of complete and incomplete combustion, as well as the chemical composition of air. Implementation of these activities can lead to increased environmental health literacy. Understanding the basic chemical nature of air helps people make sense of climate change and the associated health problems caused by air pollution. The workshop leader will share tips for creating learning stations at public venues such as health fairs and will also demonstrate best practices for lesson delivery in the classroom.

What participants need to prepare to help make the session great:

No advance preparation is needed.

Using Environmental Test Results with Community Members: Helping Communities Get a Grip on Risk

Lou Zeller, *Blue Ridge Environmental Defense League*

What we are presenting:

Contamination of soil, water and air affect public health. The starting point of community-based participatory research poses the question: Is pollution making us sick? Often, residents must rely on their own initiative to provide answers.

What participants will do:

Workshop participants will examine and experience methods of community-based research. Two communities—Shell Bluff, Georgia and Brown's Ferry, Alabama—will serve as case studies to illustrate how training in the use of Geiger counters and other activities built understanding of radioactivity and brought confidence among community group members for managing environmental data. Participants will experience short activities such as Mapping Data and a First Look at Technical Documents which are used by community members to make sense of test results, environmental risk, toxicity, exposure pathways and possible health effects.

Activities will be drawn from Statistics for Action (SfA), a collaboration between TERC and environmental advocacy organizations, to help people in communities affected by environmental contamination. SfA is both a general methodology and a specific resource that can help people:

- Understand terms, units, and concepts in environmental data
- Understand risks to health from environmental contamination
- Communicate data, stories, and concerns to decision-makers and others in the community
- Use the information to bring improvements in their communities

What participants need to prepare to help make the session great:

This workshop will provide an overview of free resources, and designed especially for adults with no technical background in environmental monitoring. Participants need only bring their innate curiosity and an interest in real world solutions. <http://sfa.terc.edu>

Session 2

Enhancing Community Environmental Health Literacy through Student Education

Marilyn Howarth and Richard Pepino, *University of Pennsylvania*

What we are presenting:

In this workshop, we will be presenting how environmental health literacy can be enhanced through Academically Based Community Service Courses. Using undergraduate students to teach environmental health topics to middle and high school students who then engage family members in the learning process enhances community engagement and literacy.

What participants will do:

Participants will develop model projects based on their environmental problem and an implementation plan that is age appropriate for the level of education targeted. Literacy challenges that must be overcome to ensure delivery in the classroom and the external environment will be emphasized.

What participants need to prepare to help make the session great:

Participants should bring with them environmental health problems relevant to their communities and we will work through how to develop interesting curricula for students and family members.

REACHing Out: How to Improve Scientific Literacy and Risk Communication in Communities Directly Impacted by Research

Maya Nadimpalli, Jessica Rinsky, Sarah Hatcher, Sarah Rhodes, *UNC- Chapel Hill Gillings School of Public Health*

Devon Hill, *Rural Empowerment Association for Community Help (REACH)*

What we are presenting:

UNC scientists and members of the Rural Empowerment Association for Community Help (REACH) will present a summary of research conducted with REACH and describe how this research fits within REACH's mission. Scientists will present best practices for improving science literacy, communicating the findings and importance of environmental health research, and involving the community in the research process. REACH members will present lessons learned on how to prepare a community group and its organizers to conduct scientific research.

What participants will do:

For a group activity, workshop participants will examine case studies and present "report-backs" as if reporting to a community impacted by study results, followed by a discussion with all facilitators.

What participants need to prepare to help make the session great:

Participants will be encouraged to share their own experiences but no other preparation is required.

Identifying Metrics for Environmental Health Literacy Activities

Kristi Pettibone and Christie Drew, *NIEHS*

Shaw-Ree Chen, *Trillium Health*

Marti Lindsey, *University of Arizona*

What we are presenting:

Identifying, evaluating, and reporting on activities, outputs, and impacts are crucial in making the case for program success, and especially when they are addressing new topics such as environmental health literacy (EHL).

Participants will draw from the methods and strategies outlined in the PEPH Evaluation Metrics Manual (EMM) to identify and develop metrics appropriate to EHL activities, outputs and impacts. Our goal is to develop a new chapter of the electronic version of the PEPH EMM, with metrics that can be applied at a programmatic or project level. The workshop will be led by Kristi Pettibone and Christie Drew of NIEHS' DERT Program Analysis Branch (PAB) with EHL experts Marti Lindsey from University of Arizona and ShawRee Chen from Trillium Health. The workshop will build on elements of Lindsey and Chen's research to define EHL and identify knowledge and skills needed at an individual level to build EHL.

What participants will do:

The workshop will begin with a short lecture format to recap the background on NIEHS' current vision for EHL and to provide an overview of the strategies and methods outlined in the PEPH EMM. In small groups, participants will identify key aspects of EHL projects and create metrics to help researchers measure their progress in conducting these projects. The workshop will conclude with a report out from the small groups and a large group discussion designed to produce an initial set of EHL metrics.

What participants need to prepare to help make the session great:

There is no preparation that participants need to do in advance.

Communicating Across Cultures: Dialogue on Cancer Risk with Alaska Native Communities

Joe Sarcone, *U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry*

Vi Waghiyi, *Alaska Community Against Toxics (ACAT)*

What we are presenting:

We will begin with an introduction to EHL with indigenous populations and a St. Lawrence Island case study focusing on the question of “how do we address environmental health literacy across cultures?” We will highlight how trust, deference, flexibility and patience have been incorporated into a multi-disciplinary and participatory EHL dialogue on contaminants and cancer with the Siberian Yupik villages of St. Lawrence Island, Alaska. We posit that EHL addresses community knowledge gaps, provides context for delivery of health services, and encourages evidence-based behavioral practice that addresses concerns about contaminants and cancer.

What participants will do:

Participants will be given the Yakutat Tlingit Tribe (YTT) case study, and in small groups of ten, participants will be asked to identify actions that can be taken to extend trust, demonstrate deference, exercise flexibility, and offer patience in promoting EHL. Groups will report out followed by a wrap-up with all.

What participants need to prepare to help make the session great:

Recommended Reading:

- Sarcone J, Work in the Gap, Governments in Service to Underserved Populations, PA TIMES, <http://patimes.org/work-in-the-gap-governments-in-service-to-underserved-populations/>, March 5, 2012, American Society for Public Administration
- Sarcone J, ‘I Will Think of You Everyday,’ on Acknowledging Sacrifice, PA TIMES, <http://patimes.org/i-everyday-acknowledging-sacrifice/>, April 15, 2013, American Society for Public Administration
- Sarcone J, Cultural Toxicology & Indigenous Populations, PA TIMES, <http://patimes.org/cultural-toxicology-indigenous-populations/>, September 24, 2013, American Society for Public Administration

Open Source Approaches to Mapping Community Environmental Health Threats: Make Your Own Satellite, Visualize Hydrogen Sulfide Contamination and Map Thermal Pollution

Sara Wylie, *Northeastern University*

Deborah K. Thomas, *Shale Test*

What we are presenting:

Through Grassroots Mapping Communities have mapped Superfund sites, oil and gas development, wetlands restoration, and industrial operations. During the BP oil spill communities created a public archive of maps documenting damage from the spill using Grassroots Mapping. The success of this project spurred the development of an online research and development community called Public Lab. Public Lab makes low-cost open source hardware and software for Do-It-Yourself (DIY) environmental monitoring.

Following the introduction to Grassroots Mapping, the second half of the workshop presents two other research tools: 1) low-cost tools for detecting Hydrogen Sulfide and 2) low cost thermal imaging. Hydrogen Sulfide mapping will be of interest to communities and researchers studying oil and gas extraction, industrial farming operations and landfills. Low cost thermal imaging will be of interest to communities and researchers studying thermal pollution.

What participants will do:

Learn how to making your own satellite using a helium balloon and a digital camera!

This hands-on workshop will present and teach participants Grassroots Mapping. Grassroots Mapping is making satellite-like maps using helium balloons and digital cameras. Participants, in this workshop will learn how to conduct a balloon flight, construct maps from the images and learn how other communities have used this method. Weather permitting we will go outside for a demonstration, so come prepared to go outside.

The workshop will wrap up with a group discussion of potential applications for the presented tools and brainstorming session to conceptualize other tools.

What participants need to prepare to help make the session great:

No preparation is required.