Engaging Youth in Building Healthy Communities

Ogonnaya Dotson-Newman[1], David Evans[2, 3], Gail Garbowski[2], Thomas Hollowed[2], Regina Santella[2, 3], and Peggy Shepard[1]

[1]WE ACT for Environmental Justice, New York, NY; [2]NIEHS Center for Environmental Health in Northern Manhattan, and [3] Columbia Center for Children's Environmental Health, Columbia University, New York, NY

Comparing Methods of Composting

- Continuation of Northern Manhattan CARE Collaborative Garbage Reduction Strategies
- Working with Washington Heights Expeditionary Learning School (WHEELS)
  - 9 high school students are part of the composting crew
  - Bokashi method and open composting
  - Using the school garden
  - Evaluation of soil garden samples for soil quality

Impacting Science

- Working with Columbia University's Double Discovery Program
- Participation in a Science Career Day
  - David Evans
  - Maya Kappil
  - Maria Rosa
- Summer interns placed in lab(s) at the Center and with WE ACT
- Toxic and Treasures Tour conducted by WE ACT

Engaging High School Teachers

- Working with New Visions, Inc. – a non-profit charter school company
- David Evans and Ogonnaya Dotson-Newman met with biology teachers
- Feedback to work with teachers develop a six-week biology curriculum focused on the biology and control of pests
- In May, we will make classroom presentations on IPM as part of this project

Clockwise from top right: High School Biology teachers developing curriculum focused on pest control in New York City; Lang Youth Scholars; WHEELS students after presentations on composting; WHEELS students visiting the outdoor composting center at Sherman Creek Park; and Students attending Science Career Day.

Lang Youth Medical Program

- Engaging students from The Lang Youth Medical Program at Columbia's Medical Center
- Engaging in science activities related to air quality
- Hosting interns
- Toxic and Treasures Tour

The work showcased in this poster was made possible through support from NIEHS grant ES009089, the US EPA's CARE Program and NYS Pollution Prevention Institute through a grant from the NYS Department of Environmental Conservation. Any opinions, findings, conclusions or recommendations expressed are those of the author(s) and do not necessarily reflect the views of the Department of Environmental Conservation

New York University Environmental Health Science Research: Pillars of the Community Outreach and Engagement Core

Judith T. Zelikoff[1], Bernadette Rexford[1], Francesca Gany[2], Pavan Gill[2], Shannon Doherty[1], Pearl Solomon[3]

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Abstract

NYU COEC continues addressing public knowledge gaps about Environmental Health Science to communities and policy makers,by providing educational programs to underserved minorities, Web-based Environmental Health education, and assistance to communities facing environmental adversities. A primary community-based initiative targets Garfield, NJ which is concerned with exposure to hexavalent chromium (Cr(VI)) resulting from an accidental discharge of 3 tons of chromic acid in 1983 into the groundwater. In 1993, Cr(VI) levels up to 2,640,000 µg/m^2 were measured in dust wipe samples in basements near the Garfield plant. The plume impacts over 600 homes, placing more than 3,500 people at potential risk for Cr exposure. As the site has only partially been remediated, residents remain concerned 30 years later about health implications from possible Cr(VI) exposure from this recently-declared Superfund site. This COEC partners with Garfield leaders to carry out Focus Groups and Town Hall meetings on this issue. Toenail clippings/blood samples from adult volunteers living on/near the contaminated plume will be tested to assess total Cr burdens. Another community-based COEC initiative (carried out with Memorial Sloan Kettering Immigrant Health Service) is to measure in-vehicle levels of ambient particulate matter (PM) to which South Asian taxi drivers are exposed and to provide PM Center-generated science in Town Hall meetings.

Introduction

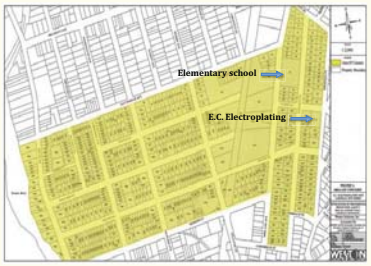
- The overall goal of the NYU Center Community Outreach and Engagement Core (COEC) is to translate, communicate, and disseminate critical concepts and research findings of Environmental Health Science that are part of our Center's scientists' knowledge and expertise to insure greater community wisdom and awareness.
- Using a Community-based Participatory Research model and working closely with Garfield, NJ City Leaders, the NYU COEC has partnered with local stakeholders and community members to educate- bring awareness to- and develop research and service programs for community members potentially exposed to Cr(VI) from leakage of 3-tons of chromic acid into the groundwater running beneath/infiltrating into their homes.
  - ✓ COEC is holding two Focus Groups (one each for Garfield community members and Leaders), as well as a Town Hall meeting to gain a better understanding for the concerns of the impacted Garfield community.
- COEC, working closely with NYU Center Scientists and the Garfield Public Health Nurse, will collect toenail clippings from individuals living on or nearby the Cr(VI)-contaminated groundwater plume and those living >3 mi. away (controls), to determine total Cr exposure levels.
- This COEC, in collaboration with the Sloan Kettering Immigrant Health and Cancer Disparities Service, participates in an ongoing program which is aimed at developing and implementing community-based initiatives, and providing education and outreach about another Center research emphasis, particulate matter (PM) to the large, at-risk South Asian taxi driver community in and around NYC.
- NYU COEC continues to address the public's knowledge gaps about Environmental Health in the form of science advice to communities and policy makers, eb-based and traditional K-12 Environmental Health education, and assistance to local communities facing environmental adversities.

Methods

- The overall directions of the NYU COEC activities are determined through community Focus Groups, community-based surveys, and interviews with community leaders and other stakeholders in order to assess the needs and concerns of the impacted communities.
- The COEC *Internal Advisory Committee* (IAC) is comprised of both COEC Co-directors, 4 community-involved members of the NYU Center, along with 2 Community Liasons, Program Coordinator, Scientific Evaluator, Web Designer, 2 NYU NIEHS post-doctoral fellows, and 2 NIEHS pre-doctoral trainees. The IAC meets monthly to discuss community concerns, evaluate the progress of ongoing outreach initiatives and possible future efforts.
- The *Stakeholder Advisory Board*, comprised of 11 members, plans to meet 3 times/yr to strengthen the bi-directional interaction between COEC and their partners, ensure the COEC Center's understanding of community and other stakeholders' needs, and provide a 'reality check' of the COEC's activities and progress in achieving its goals.
- Qualitative and Quantitative assessment tools will be developed and validated by our Social Scientist and Evaluator, Dr. Solomon.

Results

Despite lingering Cr(VI) contamination concerns, residents of Garfield neighborhood staying put: A neighborhood in jeopardy

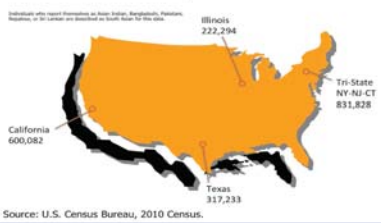


The Southwest corner of Garfield demonstrating the E.C. Electroplating plant and the area of concern/impact for Cr(VI)

Hexavalent chromium contamination in Garfield, New Jersey: Sites & Locations

The neighborhood surrounding the former E.C. Electroplating plant, where a 1983 chemical spill continues to contaminate groundwater.

South Asian Population in the U.S.



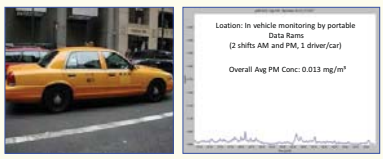
Source: U.S. Census Bureau, 2010 Census.

Arsenic Contamination: A Look into Bangladesh

NY-Presbyterian Lang Scholar Program at NYU provides its underserved, minority high school students with a hands-on program that integrates scientific laboratory skills with field experiences

A South Asian Dewali Mela: Festival of Lights and Health Fair

NYC South Asian PM Taxi Driver Study



NYU COEC Web-based Environmental Issues Initiative

Summary

- The NYU NIEHS COEC is partnered with the City of Garfield, New Jersey to engage in diverse community-based education and research activities to bring awareness to Cr(VI)-impacted and underserved neighborhoods about environmental metal pollution and health issues that affect their communities.
  - Through formative assessments, interviews, and Focus Groups, the environmental health issues of greatest concern to these impacted communities will be identified. The issues can then be targeted in briefings to community leaders/advocates/organizations, as well as to community members-at-large to improve community awareness and understanding of their particular environmental health issues; informational literature and Web-based presentations will also be used to improve awareness about toxic metals in general, and Cr in particular.
  - COEC, working closely with NYU Center Scientists and Garfield Public Health Nurse, are recruiting individuals from the Garfield groundwater plume area to measure total chromium levels and, thus, long-term Cr exposure in toenail clippings and to guide them towards appropriate medical care, if needed.
- Based on recent community-based Focus Groups, there is strong interest in studying the effect of arsenic (As) exposure among South Asians, particularly the Bangladeshi population living in or around NYC. This COEC is starting work with the Bangladeshi community to further explore and educate community members (through health fairs and educational forums) about the long-term consequences of As exposure, and to refer them for screening and intervention strategies, if necessary.
- Through Focus Group surveys, we found that the majority of South Asian taxi drivers work ~14 h/d (7d/wk), causing them to have potentially significant exposure to particulate matter (PM). We are working to develop and implement community-based initiatives to confer knowledge about PM and its health impact (with particular emphasis on cardiovascular disease), and to provide education and outreach to the large, at-risk taxi driver community in NYC.
- Efforts are ongoing to provide environmental health education to students and policy-makers in initiatives including: "Science in Action" student programs; high school student mentoring; Center Speakers Bureau & public education; web-based environmental health education efforts; occupational and environmental health clinic outreach programs (NYC); and, assistance to community-based environmental efforts (e.g., community-based and congressional testimony).

Conclusions

- The NYU Center embodies a diverse range of scientific expertise, and is therefore capable of addressing a wide range of community concerns on several levels. In this manner, we utilize our Center resources to provide unbiased and accurate information about environmental health risks to the public.
- Using community partnerships as pathways to reach concerned underserved and minority populations, NYU COEC will provide outreach to residents/workers currently exposed to- or worried about- possible toxic metals or PM exposure in their local environment.

Acknowledgement

- Supported by NYU NIEHS Center of Excellence No. ES017427 and NY Presbyterian Lang Scholars Program for underserved minorities.

Fostering Inter-Disciplinary Research Utilizing Novel Technologies to Empower Communities and Promote Change

Laurel Kincl, PhD, Naomi Hirsch, EdM, & Isabela Mackey, MS

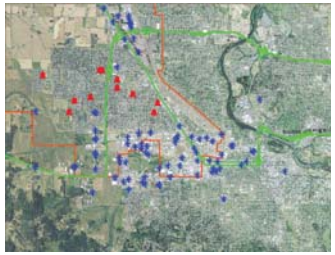
C O E C

***B**io-**R**esponse **I**ndicator **D**evices **G**auging **E**nvironmental **S**tressors*

Communities

Children in their home

Low income and Latino neighborhoods



Credit: Beyond Toxics
EPA EJ program grant
"Families, Health and Air pollution"

Workers in their workplace
Labor in their training centers

Inter-Disciplinary Research

BRIDGES

Dr. Kim Anderson
Dr. Robert Tanguay

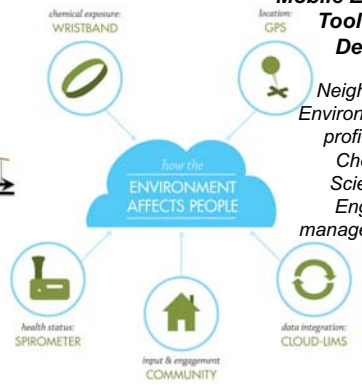
Polybrominated diphenyl ethers (PBDEs)

Environmental Determinants of Gains in School Readiness for Children Aged 3-5

Families; Environmental Chemistry and Epidemiology; Child Development and Motor Control; Biostatistics

Industrial pollutants

Mobile Exposure Device: Tool and Method Development



Neighborhood groups; Environmental justice non-profit; Environmental Chemistry; Health Sciences; Software Engineering; Data management; Biostatistics

Polycyclic aromatic hydrocarbons (PAHs)

A Novel Approach for Measuring Occupational Asphalt Fume Exposure and Toxicity

Labor; Industrial Hygiene; Environmental Chemistry, Toxicology, and Epidemiology; Biostatistics

EHSC Community Outreach and Education Core (COEC)
http://ehsc.oregonstate.edu/outreach

osu.ehsc @osu_ehsc

EHSC Environmental Health Sciences Center

Oregon State University

The Environmental Health Sciences Center is federally funded and administered by the National Institute of Environmental Health Sciences (NIEHS grant #P30 ES000210), an institute of the National Institutes of Health.

Collaboration on the Health Impact Assessment of the 6th Street Viaduct Demolition in Cincinnati, Ohio

Sarah Elam[1], Erin Haynes, DrPH[1], Nick Newman, DO, MS[2,3], Camille Jones, MD, MPH[4], LiAnne Howard[4] , Florence Fulk, MS[5], Carol Igoe[6], Bill Menrath, MS[1]
[1]University of Cincinnati, Department of Environmental Health, Center for Environmental Genetics (CEG) [2]Cincinnati Children's Hospital Medical Center (CCHMC)
[3]Pediatric Environmental Health Specialty Unit (PEHSU), [4]Cincinnati Health Department (CHD), [5]U.S. Environmental Protection Agency, [6]Cincinnati Talbert House

Picture 1. 6th Street Viaduct Demolition

Background

The Cincinnati Health Department (CHD) conducted a Health Impact Assessment (HIA) on the Waldvogel/6th Street Viaduct Demolition. The demolition of the 6th Street Viaduct is an environmental health issue of great concern for the Lower Price Hill community in Cincinnati (Picture 1). The University of Cincinnati Center for Environmental Genetics (CEG) COEC took an active role in partnership with other local organizations to inform the community of the hazards and provide methods of prevention.

Outreach Plan

The CEG COEC used an iterative process with community members to create and disseminate 300 fact sheets that provided information on the demolition and ways to keep homes lead-free. The COEC provided tacky door mats for nearly 100 residents to reduce lead exposure in homes and taught residents how to use them during local community meetings. CEG environmental health experts also provided educational sessions on lead exposure and during community meetings (Picture 2). The COEC also developed and disseminated 300 magnets outlining 4 key steps to "Keep Demolition Dust Down" (Picture 3). We also surveyed residents who received tacky mats asking about clarity and usefulness of the information provided.

Picture 2. CEG Expert Bill Menrath provides tacky mat instructional use to residents.

Picture 3. Keep Demolition Dust Down magnet

Evaluation

- Over 95% of residents found the COEC educational materials useful.
- 50% of adult residents had not received a high school diploma.
- Over 98% stated that potential lead exposure in the home was clearly explained.
- More than 80% of tacky mats were given out within 500 meters of the demolition site.

Next Steps

The CCHMC/PEHSU Lead Clinic is tracking the number of individuals tested for lead and blood lead concentrations before, during, and after the educational intervention. Also, the magnets are being translated into Spanish for residents in Lower Price Hill.

Picture 4. CCTST Award

The CEG COEC received the Center for Clinical & Translational Science and Training (CCTST) Academic-Community Research Partnership Award (Picture 4) for demonstrating excellence, collaboration, and innovation through an academic-community research partnership to improve health.

Funded by a grant from the National Institutes of Health. Grant P30ES001247, University of Cincinnati CEG: P30ES006096

UNIVERSITY OF Cincinnati

COEC

The Community Outreach and Engagement Core (COEC) at UMDNJ/Rutgers University:

translating research information into tools and resources for community stakeholders

Laura E Liang, Joanna Burger, Erin Caswell, Kimi Nakata, Jorge Gutierrez, Lauren M Aleksunes, Debra L Laskin, Zhi H Fan, Robert Laumbach

Supported by the National Institute of Environmental Health Sciences, National Institutes of Health (Grant P30 ES005022)

COEC GOALS & OBJECTIVES

GOAL 1) Develop partnerships with community stakeholders to translate and disseminate Center research information

- Develop and maintain an active partnerships with GreenFaith to serve Research Interested stakeholders within the greater New Brunswick area

GOAL 2) Enhance the dialogue between community stakeholders and Center researchers regarding environmental health issues

- Conduct at least 5 informal research discussion sessions with faith-based organization partner each year

GOAL 3) Increase awareness and understanding of environmental health research

- Disseminate research information through the programs and services of the Research Interested faith-based organization partners

GOAL 4) Promote environmental health research as a science career option

TARGET AUDIENCES

Research Attentive: Individuals whose own health or a family member's health is compromised due to a particular illness or disease, or who have an increased risk of disease or illness due to environmental exposures in their workplace.

- COEC will host an informal research discussion session for partner organizations' staff, volunteers or other individuals the partner chooses.

Research Interested : Individuals who have a general interest in environmental health issues.

- Comprises community members within the greater New Brunswick area; the community surrounding CEED, who have a general interest in environmental health issues.
- COEC has established partnerships with community-based and faith-based organizations in the greater New Brunswick area, including GreenFaith.

Future Researchers: Science-oriented high school, undergraduate and graduate students who have demonstrated their intentions to pursue a science career.

Laura Liang, MPH, CHES – COEC Director
Joanna Burger, PhD -COEC Co-Director
COEC Staff: Erin Caswell, CHES
Kimi Nakata, MSW, MPH
Jorge Gutierrez, MPH

CEED is administratively housed at the Environmental and Occupational Health Sciences Institute (EOHSI), which is jointly sponsored by UMDNJ-Robert Wood Johnson Medical School and Rutgers, The State University of New Jersey.

COEC PARTNERS SERVING THE RESEARCH ATTENTIVE/INTERESTED

GreenFaith

an interreligious coalition for the environment whose mission is to inspire, educate and mobilize people of diverse religious backgrounds to deepen their relationship with nature and take action for the earth

Breast Cancer Research Center (BCRC)

an organization dedicated to providing information and support to women and families affected by breast cancer and to increasing understanding of the disease in the community

INFORMAL RESEARCH DISCUSSION SESSIONS

- COEC along with GreenFaith and the BCRC host informal research discussion sessions where community members have the opportunity to learn about CEED research from scientists, and ask questions they have regarding environmental health or specific research.
- The discussion sessions better inform the stakeholders about research and scientists who conduct the research, as well as provide an opportunity for scientists to learn, first-hand, about the interests of the public.
- Sessions are 1.5-2 hours in length, provided at a site selected by the partnering organization and include 20-25 participants selected by the partnering organization.
- So far, COEC has held 4 sessions with BCRC and 17 sessions with Green Faith.

SUMMER UNDERGRADUATE RESEARCH FELLOWSHIP (SURF)

- Beginning in 2009, COEC has collaborated with the Rutgers Ernest Mario School of Pharmacy and its SURF program. SURF consists of a 10-week basic science and translational research experiences for highly motivated undergraduate students interested in a research career in environmental and/or pharmaceutical sciences.
- Students are provided with an opportunity to conduct full-time research in areas related to toxicology and environmental health sciences.
- COEC coordinates and facilitates a weekly seminar for the program. Weekly seminars introduce SURF participants to environmental health research and researchers.
- Primary support provided by NIEHS (Grant Nos. ES020721 and ES005022) and American Society for Pharmacology and Experimental Therapeutics SURF.

Weekly Seminar Schedule (Sample)

Week	Event	Week	Event
1	Laboratory safety training and welcome session	6	Toxicology in the News and Networking event
2	Dr. Michael Gallo, Toxicology Research	7	Field Trip to Bristol-Myers Squibb
3	Dr. Mark Robson, Environmental Health Sciences Research	8	Research Symposium
4	Career Development and Networking	9	Final Oral Presentations
5	Responsible Conduct of Research training	10	Final Oral Presentations

ENVIRONMENTAL JUSTICE

Workshops with community members through Ironbound Community Corporation (ICC)

- COEC has supported ICC events related to environmental health topics of relevance and interest to the Ironbound community in Newark, NJ.
- Family health workers, who help bridge a gap between preschool parents and ICC, attended a panel discussion in which two CEED researchers informed the audience on environmental health issues – common household chemicals and environmental exposure of pollutants in the Newark area.
- Newark residents participated in a public meeting to learn more about the goods movement industry, the health and environmental effects of having one of the largest seaports in their backyard and how they can organize to ensure that Newark receive community benefits and mitigation of the pollution from the Port Authority.

South Ward Air Monitoring (SWAM) Project

- CEED researchers, COEC and the New Jersey Environmental Justice Alliance are collaborating with Central High School in Newark, NJ to introduce students in a freshman Critical Thinking Class to air pollution issues
- The main objectives of SWAM are to:
  - increase high school students' understanding about the effects of diesel emissions;
  - increase the students' awareness of the basic concepts of the scientific process, air monitoring, good practices, and study design; and
  - work with students to develop and document an air monitoring plan specific to their community
- Primary support provided by the New Jersey Department of Environmental Protection

EMERGENCY RESPONSE: SUPER STORM SANDY

- The CEED and COEC response after Super Storm Sandy provided information, health advice (on-line and in person), and equipment to mayors, towns, community leaders and community members.
- COEC surveyed local populations in affected areas to identify and develop research on unique concerns.
- CEED researchers have been able to research electric generator use, prevalence of respiratory illness, and information sources in communities as related to Super Storm Sandy

COEC EVALUATION PLAN

- Assess the extent of the partnerships to translate and disseminate Center research and career information.
- Evaluate the effectiveness of COEC activities to enhance the dialogue between community stakeholders and Center researchers regarding environmental health issues and increase awareness and understanding of environmental health research.

Methods:

- Brief needs assessment (pre-survey)
- Evaluation questionnaire (post-survey)

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

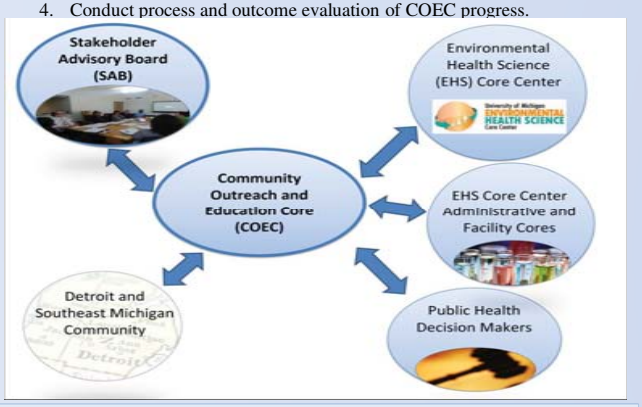
Core Team and Stakeholder Advisory Board

Background

The Community Outreach and Education Core (COEC) fosters enhanced understanding among community members, policymakers and public health decision-makers concerning the role of environmental exposures in disease, and promotes scientific collaboration between Center researchers and the communities involved.

To achieve this goal of bi-directional communication, we have four objectives:

1. Enhance partnerships with stakeholders (e.g. community-based organizations, local health departments, health advocacy groups, and other local, state, and regional partners) to translate and disseminate scientific findings on the role of environmental exposure in disease, and to communicate community concerns, priorities and needs for research to UM-National Institute of Environmental Health Sciences (NIEHS) Center members.
2. Increase awareness and understanding of recent scientific findings (primarily those of the UM-NIEHS Center) on the association between environmental exposures and health outcomes.
3. Promote dialogue among all stakeholders with the goal of improving capacity to make informed environmental health decisions.
4. Conduct process and outcome evaluation of COEC progress.



COEC Core Team

Leader: Amy Schulz, PhD
Professor, Health Behavior and Health Education (HBHE)

Co-Leader: Barbara Israel, DrPH
Professor, Health Behavior and Health Education (HBHE)

Coordinator: Myra Marie Tetteh, MPP

Stakeholder Advisory Board

The Stakeholder Advisory Board (SAB) serves to strengthen dialogue and interaction between the UM-NIEHS Center and community stakeholders, to ensure understanding by Center researchers of community and policy needs, and to ensure effective dissemination of research in appropriate venues. Members include:

Jaye Clement, MPH, MPP, Director of Community Health Programs and Strategies, Henry Ford Health System

Paul Harbin, BS, Environmental Health Section Team Leader, Institute for Population Health

Alisha Opperman, MSW, Community Engagement Project Manager, Detroit Neighborhood Partnership East/Warren-Conner Development Coalition

Erminia Rameriz, MSW, CSW, Director of Community Relations and Outreach, Community Health and Social Services Center, Inc.

Angela G. Reyes, MPH, Founder and Executive Director, Detroit Hispanic Development Corporation

Sheryl Shellman Weir, MPH, Section Manager, Michigan Department of Community Health, Health Disparities Reduction and Minority Health Section

Robert Sills, MPH, Toxics Unit Supervisor of the Air Quality Division, Michigan Department of Environmental Quality

Sherita Smith, BA, Director, Imagine Creative Opportunities Now

Donele Wilkins, President/CEO, Green Door Initiative

Guy O. Williams, President/CEO, Detroiters Working for Environmental Justice

Video: Reaching a Wide Audience

The COEC and the SAB worked with a group of University of Michigan School of Public Health students in 2012 to develop a video about oxidative stress as one pathway linking environmental exposures to health outcomes. Through video, we intend to reach a diverse audience with information about individual, community and policy changes that can reduce environmental exposures and their adverse effects on health. Our second video, focused on endocrine disruptors and early development, is scheduled for release in 2013.

Policy Advocacy Workshop

In partnership with the Detroit Community-Academic Urban Research Center (Detroit URC) Neighborhoods Working in Partnership (NWP) Project, the COEC has developed environmental policy advocacy trainings. These trainings, building on NWPs work with Policylink, are designed to enhance community capacity to engage in policy advocacy efforts to promote environmental health. Our first training was conducted in 2013 with the Detroit Neighborhood Partnership East (DNPE)/Warren Conner Development Coalition (WCDC), a SAB member organization. Workshops are conducted by a team of community and academic policy trainers who provide training and technical assistance to community groups engaged in policy advocacy work on environmental health and environmental justice issues.

The DNPE/WCDC workshop focused on strengthening capacity in five areas essential to effectively informing decisions to promote environmental health:

1. Connections between the environment and health.
2. Distinguishing policy solutions from programmatic solutions to identified problems.
3. Power mapping, using scenarios tailored to the group's priorities, participants identify decision makers, supporters, opponents and others who may be key to addressing their selected issue.
4. Selecting policy change strategies, including petitions, peaceful demonstrations, letters of support, and mass media. for use in a campaign.
5. Developing a policy advocacy campaign, including skills for framing a message and developing talking points to speak directly to policy makers on an issue of their concern.

The policy advocacy workshop with the DNPE/WCDC sought to strengthen participants' ability to influence policy decisions related to the Lower Eastside Action Plan (LEAP), with direct implications for the environment and health.

In years 3-4 of our funding cycle, the COEC will continue to serve as a resource for stakeholders, through development of policy briefs, policy trainings, and presentations and meetings with policy makers.

Support for this collaboration was provided by grant P30ES017885 from the National Institute of Environmental Health Sciences, National Institutes of Health.

Integration of Environmental Health into Public Health Practice

Neasha Graves, MPA; Kathleen Gray, MSPH; Amy MacDonald, MS; Kelly Robinson; Carolyn Crump, PhD
Community Outreach and Engagement Core, UNC Center for Environmental Health and Susceptibility

In the past year, the COEC has focused on building the capacity of key partners to conduct local outreach on a variety of topics related to Center research, including conducting healthy homes assessments. In the policy realm, the COEC led the development and implementation of a statewide healthy homes strategic plan and assisted the NC Division of Public Health (DPH) in implementing new federal guidelines to address lead exposure during pregnancy.

Capacity Building

In three central NC counties and a local historically black university, the COEC provided in-depth training for over 150 public health professionals and lay health advisors. Participants learned to use COEC toolkit materials to demonstrate scientific concepts, conduct hands-on activities, and provide clients with take-home materials. Following a yearlong, statewide strategic planning process, the COEC is addressing healthy homes education/outreach needs outlined by stakeholders in the 3-year plan.

Training

- Led 7-hour training for 17 school nurses, social workers and environmental health staff launching **new healthy homes** program.
- Trained 30 staff members in a community-based managed care program to address **healthy homes and asthma triggers** on home visits to asthmatics.
- Trained for 31 lay health advisors and staff who coordinate **breast cancer** outreach and screening activities at public events.
- Prepared 62 senior community health nursing students to incorporate **healthy homes and asthma** concepts into home visits and clinical practice.
- Prepared 15 senior public health education students to conduct hands-on **obesity** activities with Boys & Girls Club youth, ages 6-12.

Technical Assistance

- **Convened the statewide NC Healthy Homes Task Force,** comprised of 23 partners addressing health-related housing hazards.
- **Facilitated a 50-participant conference** of local health/housing agencies in Durham County, resulting in increased referrals for home assessments and fostering growth of local healthy homes coalition.
- **Developed custom assessment tools**, consent forms and resource guides.
- **Assisted** local health department **in building a referral network** of 44 school nurses and social workers for families in need of home assessments.

Lead and Pregnancy

Improving Public Health Practice through Policy Change

Working with the NC DPH Women's Health Branch, the COEC integrated environmental health into maternal health practices statewide through implementation of CDC's 2010 Guidelines on lead and pregnancy.

Convened a work group of state / local maternal and environmental health programs to develop an implementation plan.

Developed a risk assessment tool and training and educational materials for clinical staff to use.

Integrated into statewide maternal health agreement addendums requirements for risk assessment for lead exposure and education of all pregnant women.

Conducted web-based and in-person trainings, with WHB staff, for 250 nurses and public health professionals.

Related Initiatives

Publication: 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*, May 2013. Joint with UNC Breast Cancer and the Environment Research Program.

Supplemental grant: Health and Hydrofracking: Comparative Assessment of Community Information Needs. Joint with COECs at the Universities of Cincinnati and Rochester.

The **UNC CEHS Community Outreach and Engagement Core (COEC)** improves public understanding of how susceptibilities and environmental factors interact to cause disease, with a goal of enabling people to make informed decisions about reducing disease risk and hazard exposure.

Funded by NIEHS (P30 ES010126). **www.sph.unc.edu/cehs**

UNC GILLINGS SCHOOL OF GLOBAL PUBLIC HEALTH

Resources for Education and Action for Community Health in Ambler "REACH Ambler"

Frances K. Barg, PhD, Edward Emmett, MD, Lisa Jacobs, MSW
Perelman School of Medicine, University of Pennsylvania

Perelman School of Medicine University of Pennsylvania | CEET
CENTER OF EXCELLENCE IN ENVIRONMENTAL TOXICOLOGY

Background

Asbestos exposures in Ambler, PA began in the late 1800s when the Keasbey & Mattison Company began using asbestos to manufacture asbestos cement products. Asbestos-containing waste from the plant was dumped in several surrounding areas through the 1980s. These sites continue to present remediation challenges that are being evaluated by the EPA. Residents have many questions about how to understand the consequences of their exposure.

The University of Pennsylvania's Center for Excellence in Environmental Toxicology (CEET) funded a pilot ethnographic study in Ambler designed to identify community perceptions about environmental and occupational exposure to asbestos. In the ethnographic study, researchers identified a range of themes, including significant uncertainty about risk and remediation mechanisms:

"I know that there's a risk, but I don't know how much of a risk, so I can't up and flee if I don't know. … How much are we really in danger? This is really what I kind of don't know yet. I don't know honestly what the risk is for real ... Who really has the answer?"

They also identified serious concerns about the effects of asbestos exposure on community identity:

"The first Superfund site ruined this town; it ruined it, the exposure ruined it. And then you saw the mass exodus...and the storefronts went...all the people who worked in the factories moved out; it depressed the area, and it wasn't necessarily the pollution, it was the factory closing down."

This pilot work informed the team's successful application for a National Institutes of Health (NIH) R25 Science Education Partnership Award (SEPA), "Resources for Education and Action for Community Health in Ambler," or, REACH Ambler

SEPA REACH Ambler Study

The SEPA REACH Ambler study, funded in September 2012 for five years, will:

1) Document the historical and current experience of living near and working at a contaminated site

2) Provide residents with data so that they have information to help shape the future of their community

3) Develop and evaluate an on-line and in-person science education program that will elaborate on the history of asbestos manufacturing and resulting asbestos exposure in the communities of West and South Ambler

The REACH Ambler team will use qualitative research methods to better understand the plant's impact on the community and perspectives about future uses for the remediated site.

Researchers will:

- select a stratified purposive sample of up to 60 current and former community residents, former workers and their families, and other community stakeholders to conduct open ended semi-structured interviews.
- collect up to 20 oral histories to provide a first-hand account of the historical, political, and scientific context of asbestos in Ambler.
- continue to develop a West and South Ambler residency database that will contribute to knowledge about the relationship between health outcomes and asbestos exposure.
- conduct semi-structured interviews, focus groups, and stakeholder surveys as part of the evaluation strategy.
- collaborate with CAMRA to collect filmed interviews and other audio-visual recordings, to be used part of the evaluation strategy and as content for the on-line and museum-based exhibits. CAMRA is a unique research collaborative at the University of Pennsylvania dedicated to experiments in research representation.

REACH Ambler is made possible by a Science Education Partnership Award (SEPA), funding from the National Institutes of Health.

SEPA SCIENCE EDUCATION PARTNERSHIP AWARD Supported by the National Institutes of Health

NIH National Institute of Environmental Health Sciences

Health Impact Assessment in Rochester, NY

University of Rochester Environmental Health Sciences Center, Community Outreach and Engagement Core
Dr. Katrina Korfmacher and Valerie Garrison

Local Health Impact Assessment Activities

What is Health Impact Assessment (HIA)?

Health Impact Assessment (HIA) is a tool for providing decision-makers in non-health related sectors with information on how proposed plans and policies will likely impact community health. The overall goal of HIA is to promote "health in all policies." HIAs produce recommendations to maximize positive and minimize negative health impacts for all affected populations, particularly groups at higher risk for health problems.

The HIA Learning Group

About the HIA Learning Group

Our Community Advisory Board chair, Dr. Doniger (Monroe County Department of Public Health Director), encouraged us to explore how HIA might be implemented to promote environmental health in Rochester. In 2011, we initiated a Rochester Health Impact Assessment (HIA) Learning Group. The Learning Group's goal was to educate community leaders about HIA, promote its application in our area, and explore its long-term potential to improve community health through influencing local decision making. The Learning Group was facilitated by the COEC for its first year; co-chairs were later appointed from the University of Rochester's Center for Community Health and the Finger Lakes Health Systems Agency.

HIA Learning Group Members

- AARP
- Action for a Better Community
- Alternatives for Battered Women
- Anthony L. Jordan Health Center
- City of Rochester
- Center for Environmental Initiatives
- Center for Governmental Research
- The Community Foundation
- North East Area District
- Project HOPE
- Finger Lakes Health Systems Agency
- Fireproof Children
- Foodlink
- Genesee Transportation Council
- The Greater Rochester Health Foundation
- Injury Free Coalition for Kids
- Knauf Shaw LLC
- Monroe County
- New York State Department of Health
- Perinatal Network of Monroe County
- Planning Consultants
- Prevention 1st
- Rochester Institute of Technology
- Rochester Regional Community Design Center
- The Strong
- Town of Webster
- University of Rochester Medical Center
- Urban Design 4 Health

The Learning Group's efforts include:

- Monthly meetings to discuss local applications of and future strategies for HIA; working groups focus on:
  - Education and training (to promote awareness and understanding of HIA)
  - Mapping (to leverage geographic data to assess health impacts)
  - Projects (to develop potential HIA applications for specific projects)
- Talks by HIA practitioners from other cities including:
  - Baltimore City Health Department
  - Parks & Trails New York
  - Madison County Department of Public Health
  - Oregon Public Health Institute
  - Toronto Public Health
  - Urban Design 4 Health
- Proposals to conduct HIAs in Rochester
  - City of Rochester Local Waterfront Revitalization Program
  - School bus purchase decisions focusing on health impacts of reduced emissions
  - City of Rochester corner stores legislation
- Participated in one national and one international conference on HIA
- Coordinating with the NYSDOH project to map health impacts around brownfields

COEC Role in HIA

- Formed and facilitated HIA Learning Group for its first year; transitioned leadership to partners
- Conducted over 15 trainings and presentations on HIA for local leaders and interest groups
- Obtained funding for and conducted the Healthy Waterways HIA, the first full HIA in the state of New York

Healthy Waterways

About Healthy Waterways

Photo by Sylvan Hemingway Jr.

The COEC received a grant from the Health Impact Project – a collaboration between the Robert Wood Johnson Foundation and The Pew Charitable Trusts – to prepare an HIA that will inform Rochester's Local Waterfront Revitalization Program (LWRP). The LWRP, conducted as part of the New York State Division of Coastal Resources' statewide coastal management program, will guide city, private, and state/federal decisions affecting Rochester's waterways into the next decade.

The goal of the Healthy Waterways project was to assess how future changes along Rochester's waterfront addressed in the LWRP might affect community health, and to make recommendations that maximize the health benefits of the program.

This project provides an opportunity to explore how HIA might be used to improve health in Rochester. Thus, an overarching goal of Healthy Waterways was to increase the community's understanding of HIA practice and its potential value for informing local decision-making processes.

Screening

Before undertaking the Healthy Waterways project, the research team worked with stakeholders to assess the likelihood that an HIA of the LWRP would significantly contribute to the planning process. The screening process determined that:

- The LWRP will affect community health
- Absent an HIA, the LWRP would not focus on potential health impacts
- An HIA could enhance stakeholder engagement in the LWRP
- An HIA was feasible and timely

Stakeholder Groups Engaged

- City of Rochester
  - Planning
  - Environmental Services
  - Transportation
  - Recreation and Youth Services
- Monroe County
  - Environmental Services
  - Public Health
  - Water Quality Coordinating Committee
- PlayBEST
- HealthiKids
- Genesee Transportation Council
- PLEX Neighborhood Association
- Southwest Common Council
- Sector 4 CDC
- Federation of Monroe County Environmentalists
- Parks & Trails New York
- EHSC Community Advisory Board
- Rochester HIA Learning Group

Stakeholder Engagement

During the screening and scoping phases, we met with stakeholder groups to identify concerns within LWRP boundaries. Input was solicited from stakeholder groups involved in or likely to be affected by changes in the waterfront that had implications for human health.

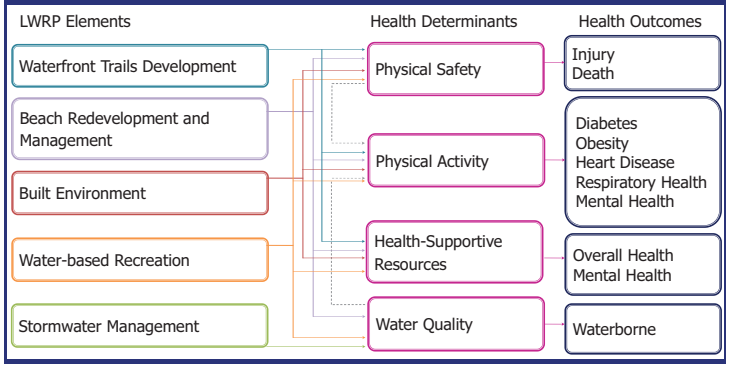
Scoping

Local health data and stakeholders helped identify the most significant health issues facing communities in Rochester that may be influenced by changes to the waterfront. Health Impact Assessment is based on the observation that health outcomes are strongly affected by features of the built, natural, or social environment. These features are commonly referred to as "health determinants." Based on stakeholder input and an initial literature review, we identified four key health determinants likely to be affected by activities in the waterfront. We then identified potential LWRP elements (recommended actions, policy changes, or projects) that might significantly affect the key health determinants and health outcomes.

Assessing the LWRP Plan Elements

Our assessment linked potential LWRP elements to specific health determinants. We employed a variety of methods to assess current conditions in Rochester's waterfront and potential impacts of the LWRP, including literature reviews, analysis of existing data, and limited new data collection. New data collection included three separate community surveys conducted in Summer 2013 with beach users, waterfront trail users, and southwest community residents. Integrating these data sources, our assessment identified probable pathways between identified LWRP elements and health outcomes (Figure 1).

Figure 1: Health Determinant Pathways



Recommendations Development, Monitoring and Evaluation

We identified several ways in which the Healthy Waterways could influence the LWRP to improve health:

- Building a case for discussions of health as a goal in the introduction, vision and overview sections of the LWRP
- Providing health-related data for the inventory and analysis sections of the LWRP
- Proposing health-related recommendations for various plan elements

We consulted with stakeholders to develop recommendations based on our findings, and developed a full draft report for public distribution in April 2013. We plan to compile responses, finalize the report and disseminate our findings by June 1, 2013. The City of Rochester LWRP is on task to be completed by December 2013. The project team documented the known and expected impacts of the HIA on the LWRP process, and set recommendations for evaluating the future impact of the HIA and recommendations related to it.

COECs and HIA

Opportunities for COECs in HIA

- Because it emphasizes equity and social justice, HIA relies heavily on community engagement. COECs are in a unique position as trusted partners who regularly engage with communities. For the Healthy Waterways HIA, we were able to leverage existing networks to gather input on the process, content and recommendations, as well as receive help with data collection. This experience also bolstered the City's efforts of community engagement with the LWRP, particularly in encouraging community members to be involved and provide input through public meetings hosted by the City.
- Many policy decisions, especially those that impact the built environment have strong ties to environmental health.
- HIA can be used as a translational tool to communicate the complex interactions between political, social and environmental factors. In particular, HIA helps communities understand how environmental changes might influence their health.
- HIA provides COECs with a means of prospectively informing policies that influence environmental health.
- HIA is multidisciplinary, assesses complex interactions, and relates to diverse health impacts. Although COEC staff may not have expertise in all fields related to an HIA, they often have relationships with key stakeholders and access to national experts who can assist.
- As an academic partner, the COEC may be viewed as a 'neutral party,' and hence be able to credibly conduct an HIA of a controversial issue.

Challenges for COECs in HIA

- The HIA process is not "scientific "in the sense of generating new knowledge. HIA encourages use of existing data to predict potential health implications. People may misperceive HIA as a scientific process, then criticize the result if it does not conform to traditional standards for research.
- HIAs often extrapolate based on experience and integrate information from stakeholders, literature and existing data. The judgments and assumptions in doing so may lead to concerns about the objectivity of recommendations.
- Because the HIA process begins with identifying potential health impacts, it is difficult to know before embarking on a project whether it will relate directly to environmental health. Thus, COECs may find that an HIA unexpectedly expands beyond their mission and expertise.
- The purpose of HIA is to develop recommendations to inform policy. Communicating and promoting these recommendations is a key part of the HIA process. COECs may struggle with this process being perceived as "advocacy."

Moving Forward: Next Steps for Rochester

Recognizing these opportunities and challenges, our COEC plans to continue to promote and support the practice of HIA in Rochester, but it may take on different roles in future projects. We plan to:

- Facilitate ongoing discussions in Rochester to generate ideas for new HIA projects. Examples of possible projects include school district policies on neighborhood schools; modification of school lunch and summer meals programs; and the City's vacant property demolition plan.
- Promote integrating HIA into City of Rochester and Monroe County decision-making frameworks.
- Support development of a Community Health Mapping Center able to analyze environment, health, and demographic data in response to requests by community groups and decision makers.
- Continue to educate diverse community groups and leaders about how HIA can promote "health in all policies" in Rochester.

This poster was funded by the National Institute of Environmental Health Sciences grant # ES01247. Visit http://www2.envmed.rochester.edu/envmed/EHSC/outreach/coec/index.html to learn more about the EHSC COEC.

Health and Hydrofracking: Comparative Assessment of Community Information Needs

Katrina Smith Korfmacher, PhD[1], Kathleen Gray, MSPH[2], Erin Haynes, DrPH[3], Megan Hoert Hughes, MEM[2], Sarah Elam[3]
[1]University of Rochester, Environmental Health Sciences Center, Rochester, NY [2]University of North Carolina at Chapel Hill Center for Environmental Health and Susceptibility, Chapel Hill, NC [3]University of Cincinnati, Department of Environmental Health, Center for Environmental Genetics, Cincinnati, OH

Source: Ohio Department of Natural Resources

Background

Communities have expressed concerns surrounding hydraulic fracturing (HF) on potential health and environmental risks from air emissions, water pollution, and other changes. Community Outreach and Engagement Cores (COECs) in three Environmental Health Science Centers in New York, North Carolina, and Ohio are collaborating to better understand these concerns. These states are in different phases of HF. There is currently no active HF in New York and North Carolina, while Ohio is projected to have as many as 2,250 drilled wells by the end of 2015.

Purpose

The purpose of the study is to understand community concerns about potential health impacts of HF, sources of information, and research needs.

Fracking planning meeting in Washington D.C., January 2013.

Methods

COECs conducted key informant interviews with community groups, health professionals, and local government officials to obtain diverse perspectives on health concerns and information needs. Coding for specific themes included a variety of topics identified by color (Figure 1). The interviewing process was integrated with the collection of additional data (e.g., reports, news articles, etc.) to provide geographic, political, and economic context.

Preliminary Findings

A total of 48 interviews were conducted (Table 1). Based on initial analysis, interviewees identified a common set of environmental and human health concerns, such as water and air quality. Useful sources of information mentioned included local media, online tools, and peer reviewed articles. Interviewees had a desire for baseline testing in states where HF had not yet begun, and to learn from the experiences of communities with active HF.

		Interviewee Descriptors					Position on HF		
State	# Interviewees	Public Hlth Professional	Local Gov't	Environmental (non-gov't org)	Citizen/ Landowner	Outreach/ Education	Opposed	Support	Neutral/ Undecided
NY	19	1	3	7	7	0	7	3	7
NC	15	3	1	4	5	2	6	0	11
OH	14	4	2	5	1	2	8	2	4
Total n (%)	48	8 (17%)	6 (12%)	17 (33%)	13 (27%)	3 (8%)	21 (52%)	5 (10%)	22 (46%)

Table 1. Interviewees by state and descriptor

Position on fracking
Interviewee involvement with HF
Potential Community Health Issues
Sources of information and credibility
Types of information/research needed
How to share information
Economic impacts of HF
Miscellaneous

Figure 1. HF themes coded by color

Funded by a grant from the National Institutes of Health. University of Rochester Environmental Health Sciences Center: P30ES001247, University of North Carolina at Chapel Hill Center for Environmental Health and Susceptibility: P30ES010126, University of Cincinnati Department of Environmental Health Center for Environmental Genetics: P30ES006096.

Center Research & Teaching, Environmental Sustainability, Community Outreach & Engagement Activities

Andrea Hricko, Ed Avol, Rob McConnell, John Froines and Frank Gilliland

Southern California Environmental Health Sciences Center

- Directed by Dr. Frank Gilliland
- Research investigators from USC, UCLA, Caltech
- Conducts research on the health impacts of air pollution
- Landmark research on the health effects of near-roadway pollution

Research Activities

USC Children's Health Study underway since 1992, investigating the health effects of air pollution in over 12,000 children across southern California

Traffic-Related Air Pollution investigating the link between traffic and asthma, autism, heart disease, and cancer

Intra-Community Variability– characterizing the differences in pollution within and between communities

The "Burden of Disease" – assessing the cost of air pollution in medication, doctors' visits, & hospitalizations

New Environmental Health Teaching Programs and New Environmental Sustainability Activities

NEW Environmental Health Track in the USC Master of Public Health Program at Keck School of Medicine & NEW Environmental Health Minor for USC Undergraduates

NEW Environmental Sustainability Research Network for faculty and postdocs at USC. A. Hricko and E. Avol speak at first workshop.

UCLA's Sustainable Technology & Policy Program: a joint undertaking of the Schools of Law, and Public Health, focused on identifying and promoting the use of safer alternatives to hazardous chemicals.

Translational Research/Outreach Efforts

- Evaluation of Draft Environmental Impact Reports: proposed I-710 Freeway expansion, proposed BNSF SCIG rail yards
- Working with various government committees on transportation & port issues
- Working with regional air quality agency to make the latest science accessible to regulators and policy makers

Community Outreach and Engagement Program

"Moving Forward" conferences on healthy solutions for communities impacted by trade, ports, and goods movement.

"THE Impact Project," a community-academic collaborative to address pollution around ports, rail yards, and goods movement facilities.

"Moving Forward Network," a nationwide effort to link organizations working on ports and goods movement throughout the U.S. 2013 meeting held in Kansas City, MO.

"Neighborhood Assessment Teams" – training of teams to conduct community monitoring.

Sen. Barbara Boxer Hearing on Ports' Impacts

Supported by:
National Institute of Environmental Health Sciences (Grant #5P30ES007048)

Funding for the Outreach Program comes from NIEHS, The California Wellness Foundation and The Kresge Foundation

Transforming Community Outreach and Engagement: Development of a Gulf Coast Regional Network

Sharon A. Croisant, MS, PhD,[1,2,3,4] John Sullivan, MA,[1,2,3] Lauren E. Scott, MSW,[1,3] Amber Anthony,[1,3] & Michele K. Cravey [3,4]

utmb Health Center in Environmental Toxicology

Community Outreach and Engagement Core

Director: Sharon A. Croisant, MS, PhD
Education: Lauren E. Scott, MSW & Nonie Mendias, RN, PhD
Asthma & Children's EH & IHSFC Liaisons:
Sharon A. Croisant & Randall M. Goldblum, MD
Public Forum and Toxics Assistance: John Sullivan, MA
Policy: Alexandra B. Nolen, PhD, MPH and John Prochaska, DrPH
Collaborative Research Teams Liaison: Rolf Konig, PhD
COEC Coordinator: Amber Anthony
CTSA and GC-HARMS Liaison: Michele K. Cravey

Mission:

- Translate science and medicine for the communities we serve through establishment of bidirectional communications between and among scientists, clinicians, trainees, and the public to foster the exchange of information and development of community-engaged research

Targeted Audiences:

- Center investigators, health care practitioners and those engaged in public health, those engaged in policy-making related to environmental health, and the lay public with a vested interest in understanding the science

Specific Aims:

- Serve as the translational arm for Center science and environmental health medicine
- Partner with local, regional, and statewide stakeholders
- Develop outreach and educational models and disseminate best practices
- Liaise with the IHSFC and the Center's Collaborative Research Teams (CRTs) to promote and establish community-based research and community-based participatory research projects
- Increase connectivity between the UTMB Institute of Translational Sciences (Clinical and Translational Science Award) to facilitate translation of relevant clinical environmental research to stakeholders

Services Provided:

- Liaise with scientists from CET Collaborative Research Teams
- Provide assistance with grants and design of population-based studies
- Provide opportunities for engaging stakeholders
- Provide education & development in Community Engagement and Community-Based Participatory Research
- Partner with local, regional, & statewide stakeholders to improve quality of human health
- Disseminate best practices

Overview: Our process tends to be iterative, including meaningful dialogues that frequently lead to progressively intensive activities—Environmental Justice *Encuentros* (meetings for networking, translation of environmental health science, and exchange of information), Community Science Workshops that are used to incubate potential community-based participatory research projects, followed by the research itself (carried out through the IHSFC), followed by dissemination of findings to both the scientific and lay communities—which often jump starts the next project. Throughout the past years, we have repeated this process of engagement multiple times across the Gulf Coast region, resulting in a series of overlapping networks with emphases on: Environmental Justice, coastal heritage, Texas healthy ports communities, educational initiatives, and communities affected by the Macondo Oil Spill and other natural and manmade disasters that impact community resiliency. To maximize not only the scope but the impact of our efforts, we are now in the process of developing a more fully integrated Gulf Coast Regional Environmental Health Science Network, the purpose of which will be to enhance future environmental health research, as well as outreach and engagement projects.


Education: St. Luke's Health Charities


Healthy Ports Network: Ship Channel


EJ *Encuentro* & Healthy Ports Network: Air Alliance Houston


GC-HARMS: Alabama Fishers Cooperative

t.e.j.a.s.
Texas Environmental Justice Advocacy Service


GC-HARMS: Coalition of Vietnamese-American Fisher Folk

Galveston Historical Foundation Green Revival
Coastal Heritage: Galveston Historical Foundation

mog Offshore SCI Café
Education: SCI Cafe


EJ *Encuentro* Network: Communities In-Power & Development Association (CIDA)


GC-HARMS: United Houma Nation


GC-HARMS: Louisiana Environmental Action Network (LEAN)

Map Legend:
- Coastal Heritage
- EJ *Encuentro* Network
- Education
- Healthy Ports Network
- GC-HARMS

[1]ICenter in Environmental Toxicology
[2]Department of Preventive Medicine and Community Health
[3]Sealy Center for Environmental Health and Medicine
[4]Institute for Translational Sciences

This work is supported by the Center in Environmental Toxicology and the Sealy Center for Environmental Health and Medicine at the University of Texas Medical Branch, funded in part by a P30 Core Center Award (ES006676-16A1) from the National Institute of Environmental Health Sciences, National Institutes of Health.

Center for ecogenetics & Environmental Health

Environmental Health in a Community Context

Dave Eaton, PhD, Center Director • Terry Kavanagh, Center Deputy Director
Kelly Edwards, PhD, COEC Director • Marilyn Hair, MPH, COEC Manager • Jon Sharpe, MEd, Administrator

Tribal Partnership Highlight

The **Native Tradition, Environment And Community Health (TEACH) Project** began in 2008 with an EHS Core Center Administrative Supplement. The Northwest Indian College and the Center for Ecogenetics and Environmental Health at the University of Washington shared the funding and co-managed the project. One of the goals of the Native TEACH Project was to find out how Native ways of understanding the world and our place in it might lead to a unique understanding of environmental health – a "NATIVE Environmental Health Science."

To do this, we got input from Tribal college students, staff and faculty from 30 Tribal colleges around the U.S. We did this through a combination of talking circles, interviews, and written surveys administered at the Northwest Indian College and at the 2009 American Indian Higher Education Consortium (AIHEC) student conference. From this data, we identified three core themes: **Community**, **Wellness**, and **Inter-Relationship**. Native Environmental Health Science is the study of how these three themes intersect and overlap, and what this means for our actions as individuals and communities.

In order to return our research results to the participants, the team created a traditional story based on the three themes. This story, entitled *The Return*, was shared through live presentations, a student-created narrated video montage, and sessions at various professional meetings.

In 2012, we partnered with Michelle Montgomery, a Native Senior Fellow at the UW, to create a comic/coloring book version of the story to help us share the research findings with a larger audience. Nicholas Salazar, a student at the Institute of American Indian Arts in Santa Fe, NM, created the artwork for the book.

Over 250 copies of the book were distributed at the 2013 AIHEC Student Conference in Green Bay, WI. NWIC is distributing 100 copies and Mr. Salazar has arranged for IAIA to hand out 150 copies to students, staff and faculty there. A PDF of the book is also available for free download from the CEEH website and is posted on the PEPH Resource Center.

Native TEACH Project
Tradition, Environment And Community Health

Community Partnership Highlight

The Duwamish River Cleanup Coalition (DRCC) is EPA's Community Advisory Group for the Duwamish River Superfund site in Seattle. DRCC's goal is ensuring a cleanup that's accepted by & benefits the community and protects fish, wildlife and human health.

In 2012, the COEC was a sponsor of the **Duwamish River Festival** with entertainment, boat tours, and cleanup information for the Georgetown and South Park neighborhoods that surround river. These neighborhoods have many low-income, non-English speaking, and non-white residents. The Festival drew hundreds of neighbors, including Native Americans, Hispanics and Southeast Asians. The COEC also sponsored a bike tour and staffed a table at the event.

On October 9th, 2012, the DRCC Program Manager co-presented at our **Public Health Café, Seafood: It's Healthy, But Is It Safe to Eat?** The well-attended event focused on EJ issues such as the effects of contamination on Native Americans and subsistence fishermen whose traditional diets include lots of seafood.

Anticipating the EPA cleanup proposal that was announced in Feb, 2013, DRCC conducted a **Community Health Impacts Assessment (CHIA)**. COEC is partnering with DRCC to publish and print the CHIA study. COEC is also hosting and promoting a DRCC educational workshop at UW about the cleanup and helping to disseminate information encouraging the people to participate in the public comment period.

In addition to the above partnership activities with the DRCC, COEC also created a role play featuring fictional characters with various perspectives toward seafood contamination and cleanup of Puget Sound. The activity, entitled "**Seafood from Puget Sound: How Much Can We Safely Eat?**" was reviewed by the WA Department of Health Fish Advisory staff and has been used with a variety of audiences. The document is on the CEEH website and in the PEPH Resource Center.

BLOG: www.ecogenetix.org
TWITTER: @ecogenetix, @phcafe
FACEBOOK: Public Health Café

Supported by NIEHS grant ES07033. Created October 2013.

SCHOOL OF PUBLIC HEALTH
UNIVERSITY of WASHINGTON

VANDERBILT UNIVERSITY

Lessons Learned From a Multi-Topic Community Forum

Goals

- Introduce COEC and Center in Molecular Toxicology to the community
- Showcase COEC resources and investigator expertise
- Share research on topics of interest to the community

Action

- Community forum
  - Fluoride
  - Plastics
  - Vaccines
- Target audience: Parents of young children
- Factors in topic selection
  - Recent media attention
  - Conflicting information in the community, especially among new parents

"Fluoride, Plastics, and Vaccines: What Parents Should Know"

- BPA and dangerous plastics found in bottles and food/drink packaging
- Are vaccines/immunizations related to autism and other adverse health effects?
- Is fluoride in the water supply and dental products a danger, specifically to children?

Speakers

- Nathalie Maitre, M.D., Ph.D, Division of Neonatology, Vanderbilt
- Elizabeth Williams, M.D., Vanderbilt Vaccine Research Program
- James Pace, Jr., DDS, local dentistry practice

The Process

1. **Informal poll of families with young children (Plastics)**

"I drank out of BPA bottles every single day of my pregnancy and wondered if that could have caused any of her asthma, ear aches, or now her issues with attention span."

"I'm always worried about using plastic bottles in the microwave due to the BPAs."

2. **Advertising**

Listservs	E-newsletters
Day care centers	Newspapers
Online calendars	Flyers
Social Media	Announcements to organizations and support groups

3. **Forum and Materials**
   - Refreshments served
   - Q&A after each speaker
   - Fact sheets on each topic
4. **Web Based Materials**
   - Videos of speakers
   - PowerPoint presentations
   - Fact sheets
   - Presenter contact information

5. **Feedback**
   - "…glad it was evidence-based information."
     "Post flyers everywhere."
   - Future topics requested included antibiotics, MRSA, antimicrobial products, carbon monoxide, sun exposure, and allergies

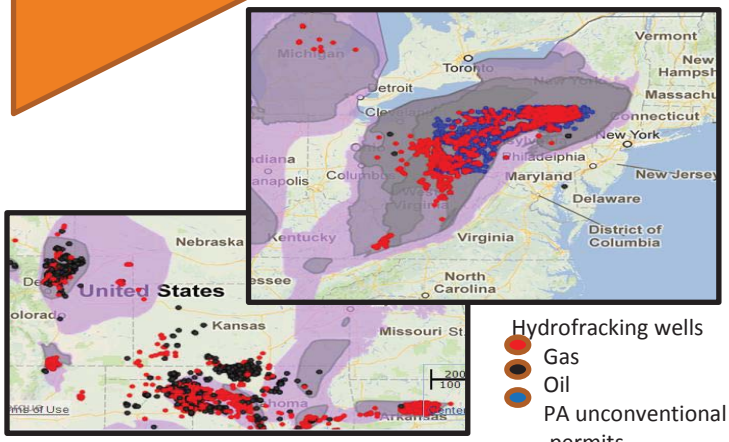
What We Learned

- Pre-forum polling of parents helps speakers tailor presentations to community
- Audience responded positively to recommendations for specific actions they could take
- Presenter enthusiasm brings energy to the presentation
- Speakers may need coaching on how to present scientific information to a community audience
- Explaining the roots of common misconceptions and using clear language to explain science is a powerful way to debunk myths

The Harvard WorldMap – A Tool for Research, Engagement, and Outreach

Ann Backus, MS[1], Matthew Tumpney, SM[1,2], Steve Melly, MS[1]
[1]Harvard School of Public Health, [2] Gradient

The Harvard WorldMap – an open source, public domain tool for sharing and visualizing spatial-temporal data.
Designed for collaboration among researchers and for use with the community, individual permissions to the map layers can be arranged to maximize sharing and protect sensitive information.

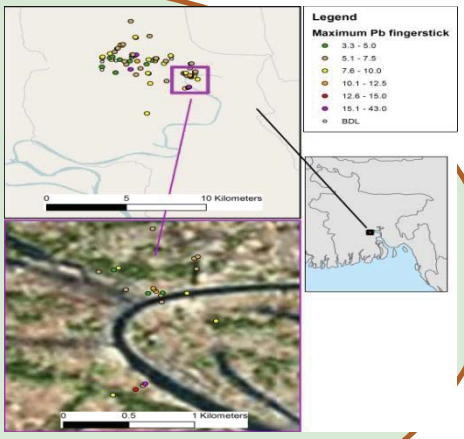


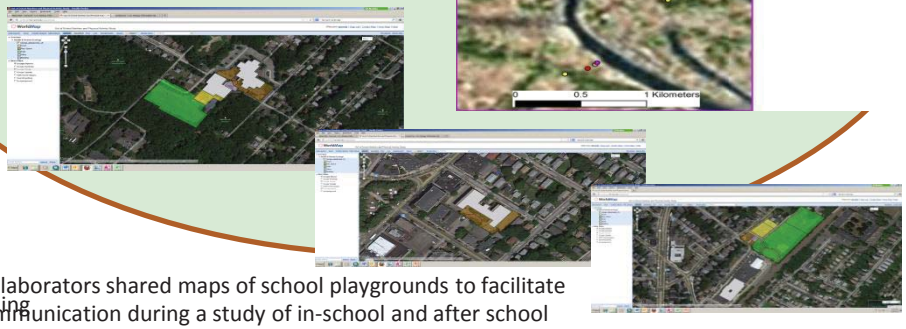
Hydrofracking wells
- Gas
- Oil
- PA unconventional permits

HSPH researcher Maitreyi Mazumdar, MD, studying arsenic exposures in Bangladesh used the **Harvard WorldMap** to explore possible sources of unexplained lead exposure in her pediatric study subjects.

A Research Tool

What can we represent?
How can we generate new hypotheses?
How can we facilitate collaboration?





Collaborators shared maps of school playgrounds to facilitate communication during a study of in-school and after school physical activity.

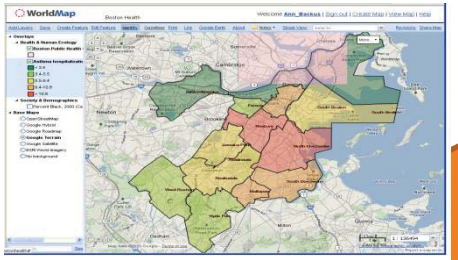
An Engagement Tool

Matt Tumpney, an HSPH student engaged biking commuters to HSPH and recreational bikers and walkers in a project to measure PM2.5 on their routes over the course of a week.

A **Harvard WorldMap** plot of PM2.5 measurements in Boston on a Google Map background.

An Outreach Tool

Harvard WorldMap of Asthma Hospitalizations 1998 Boston helped COEC determine where to focus community outreach.



New Data Issues:

privacy, ownership, quality control of data shared across multiple parties, vetting, responsible/ethical use…

HWM Training:

HSPH, UPENN, UW-Milwaukee, Boston College, Tufts, Carnegie Mellon, University of Texas Medical Branch Galveston, and others

With funding from the National Institute of Environmental Health Sciences, NIEHS Grant P30-ES000002

HARVARD SCHOOL OF PUBLIC HEALTH | Harvard-NIEHS Center for Environmental Health

Title: Engaging East Baltimore Residents Through a "Day at the Market" Event

Johns Hopkins Center in Urban Environmental Health, Baltimore Maryland

Community Outreach and Engagement Core

Abstract

Staff

Michael A. Trush, COEC Director
Barbara Bates-Hopkins, Community Engagement Coordinator
Patricia J. Tracey, Community Engagement Coordinator

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 Environment Health has engaged community members is through an activity called "Day at the Market". It is currently a joint Environmental Justice Partnership and 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 researcher. "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.

Introduction

The "Day at the Market" was initiated 6 years under the auspices of a Center pilot grant awarded to Dr. Nancy Kass and the Environmental Justice Partnership (EJP) as an event to disseminate research to the community(1). It is held at the Northeast Market, which is one of 6 Baltimore City run markets. The Northeast Market is two blocks from the Johns Hopkins Medical Institutions. As an engagement tool it: allows COEC to engage the community where they gather in East Baltimore; serves as an "eyes and ears" event for the Center in the community; allows us to talk with and provide materials to residents about environmental health issues such as asthma, lead, smoking, microwaving foods in the right containers; allows residents to talk directly with scientists about their research findings; provides a forum for community recruitment for clinical studies, focus groups or CABs; and provides public health services directly to residents(2). The "Day at the Market" allow researchers to disseminate their work in an informal setting comfortable for the community**.** Prior to participation in the "Day at the Market", Ms. Bates-Hopkins shares with researchers the intent of the program and some tips on how to interact with the community. She solicits feedback from researchers after their participation. This activity helps to facilitate **trust** between the community and researchers. This activity also provides an opportunity for other COEC partners. For example, Civic Works presented and discussed their B'More Green Program, a job training and placement program in environmental technology. Health service providers are invited to deliver services such as blood pressure and vision screening. Thus, the community can be made aware of available existing services and resources. Finally, we obtain feedback both verbally and through a sign-in-sheet, where we capture comments from residents about concerns and topics about which they desire more information. On the average, about fifty individuals will use the sign-in-sheet. However, more than fifty individuals generally stop and talk or take materials. Sometimes COEC staff follows up with a phone call, when an individual is seeking specific information. Otherwise, individuals are not contacted by COEC. Residents are always encouraged to contact COEC anytime with additional questions or information needs, and they do.

TAKING THE SCIENCE TO THE COMMUNITY (2, 3, 4, AND 5)

Community Canvassing Campaign:

The COEC Center's Coordinators assisted the Johns Hopkins Center for Injury Research and Policy (JHCIRP) in reaching out to East Baltimore communities to enable the Baltimore City Fire Department (BCFD) to increase the number of families they provide smoke alarms and home safety education.

The JHCIRP and BCFD outreach program was designed to learn more about the safety behaviors of communities and provide interventions and education (5).

COEC & SIDNEY KIMMEL COMPREHENSIVE CANCER CENTER EXPAND DAY AT MARKET

This expansion, sponsored by the Cigarette Restitution Fund, promotes cancer screening and provides cancer awareness, services and education.

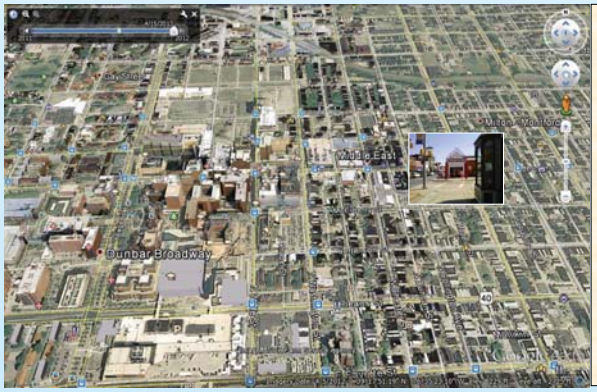
USING PUBLIC HEALTH SERVICES TO FACILITATE RESEARCH DISSEMINATION


CIRP CARES programs teaches parents and their children how to prevent burns, falls, strangulations, poisoning and other unintended injuries.


Stoke and Diabetes Screening


University of MD Student Sight Savers, Glaucoma Screening


Blood Pressure Screening



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MIT Center for Environmental Health Sciences, Community Outreach Education and Engagement Core (COE²C)

"Understanding Air" A Hands-On Package for Learning About Climate Change and Air Pollution Designed for both General Audiences and Classroom Settings

Eben Cross, Amanda Gruhl, Kelly Daumit, Kelsey Boulanger, Amy Fitzgerald, Jessica Garrett, Jesse Kroll and Kathleen M. Vandiver

Massachusetts Institute of Technology, Cambridge, MA

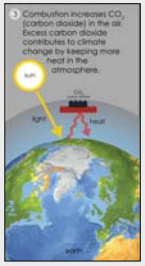
Abstract

Often the general public finds it hard to take a stand on environmental health issues such as climate change and air pollution because people feel uncertain about their knowledge of the basic science. Thus the Community Outreach Education and Engagement Core (COE²C) in partnership with the Kroll Lab and the MIT Edgerton Center created a hands-on way to deliver the essential facts about air and combustion. Employing the LEGO® Atoms & Molecules Set where each color LEGO brick represents a different elemental atom, participants happily work with these inviting and familiar materials, constructing models of the tiny lumps of matter which make up air, visualizing the invisible molecules. The constituents of air and their relative concentrations are modeled first. Next the products of the chemical reaction combustion are discovered, as the atoms in the initial molecules recombine into new molecular products. Thus fossil fuel combustion products become evident, including carbon dioxide, carbon monoxide and carbon (soot) as well as NO_x and SO_x and ground-level ozone, O_3.

Using an evaluation instrument referred to as a (System for Assessing Mission Impact) SAMI card, developed by the St. Louis Science Center, the impact of the "Understanding Air" curriculum was studied in two different settings with different audiences: 1) a middle school science classroom at the Susan B. Anthony MS, Revere, MA with 8th graders; and 2) a booth at the Science Family Days Event at the American Association for the Advancement of Science (AAAS) Conference on February 16, 2013 Boston, MA with families. In both settings engagement was high. The SAMI Card contained three questions with a four point Likert scale, with 4 being the maximum. Notably, 100% of the eighth graders in Revere, MA (n=137) responded positively to "Did you learn something?" The results were: "Liked this activity" = 3.4 ± 0.6; "Learned from this activity" =3.3 ± 0.6; and "Would like to learn more" = 3.2 ± 0.6 (n=137). From the SAMI Card open-ended question, "Please tell us two things you learned from this activity," 30% of the answers related to the composition of air; 26% to combustion, and quite importantly 11% to health. Similar results were obtained from families at the booth at the AAAS event: "Liked this activity" =3.8 ± 0.4; "learned from this activity" =3.3 ± 0.6; and "would like to learn more" =3.5 ± 0.8. (n=88).

The COE²C looks forward to designing a turn-key package for outreach booths and tables, which would include ready-to-print posters, signs and instructions for volunteers. These files would be posted on the MIT COE²C and other NIEHS websites, making the "Understanding Air" booth materials freely available along with the LEGO Atoms & Molecules classroom lessons which are currently offered online http://mindandhand.mit.edu/educators/curriculum-packages/air.shtml.

Background



350

The upper safety limit for atmospheric CO2 is 350 parts per million (ppm). Atmospheric CO2 levels have stayed higher than 350 ppm since early 1988.

396

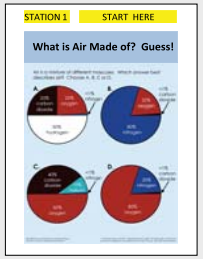
As of February 2013 measurements are at 396.80 parts per million (ppm). The concentrations of CO2 in the atmosphere are increasing at an accelerating rate from decade to decade.

http://co2now.org/.

Methods

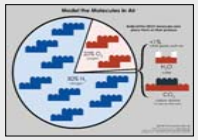
To peak interest on the outset, students are asked to guess what air is made of. They make a selection, get immediate feedback by turning the placemat over to see the correct answer, and they also enjoy a reinforcement activity which helps them visualize the invisible molecules in air. Students build a model of air which is a homogenous mixture of various compounds and elements. They use the placemat as a guide. This construction task uses LEGO® bricks, where each brick represents an atom. Bricks can be bonded together in specific shapes to produce simple molecules with the correct formulas.

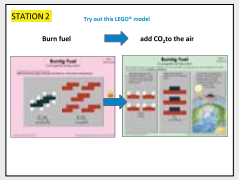
Next, participants observe how the combustion of hydrocarbon fuel adds CO_2 to the air. The production of other unhealthy air pollutants from burning hydrocarbons is experienced as well. Middle schoolers can complete all the basic activities shown here. Younger audiences can pause at any station.

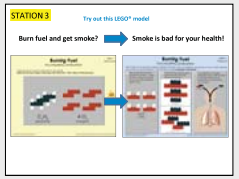


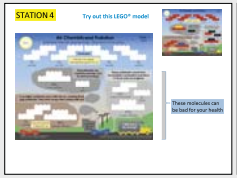
Each LEGO® Brick is an atom in the model below. Elements are the standard CPK colors: N=blue; O= red; H= white; C= black. Water vapor and carbon dioxide comprise less than 1% of air. Carbon dioxide levels are 396 parts per million (PPM).

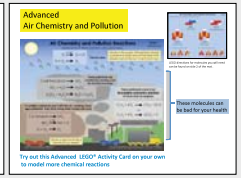
STATION 1 Continued







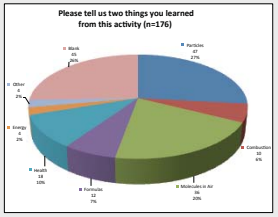




Results

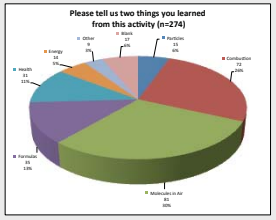
Informal Setting for families:
AAAS Family Science Days, Feb 2013
(n=88) (ages: 73%= 5-11 yr; 15 %= 12-14; 2%=18+) (gender 61%=M; 39%=F)

1	Did you like this activity?	Average = **3.8 ± 0.4**
2	Did you learn from this activity?	Average = **3.3 ± 0.6**
3	Would like to learn more?	Average = **3.5 ± 0.8**



8th grade students in classroom:,
Susan B. Anthony Middle School, Revere, MA Nov 2012
(n=137) (ages: 89%=12-14 yr; 11% =15-18) (gender: 46%=M; 54%=F)

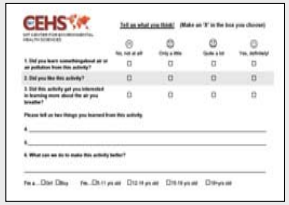
1	Did you like this activity?	Average = **3.4 ± 0.6**
2	Did you learn from this activity?	Average = **3.3 ± 0.6**
3	Would like to learn more?	Average = **3.2 ± 0.6**



Evaluation Instrument

The evaluation instrument is called a SAMI card. (System for Assessing Mission Impact) This evaluation instrument was developed by the St. Louis Science Center staff and shared with K. Vandiver. Vandiver presented this tool at the NIEHS Directors meeting at a Community Outreach and Engagement Core session in Boston, March 2012. The SAMI system is utilized by museums because of its broad applicability. Investigators in museums can analyze and tally together responses to activities independent of the age of the participants and the topic presented.

The questionnaire used at MIT was modified to have three (versus four) questions to be answered with a four point Likert response scale (1.0-4.0). The questionnaire includes an open ended question "Please tell us two things you learned from this activity." These results were summarized by categorizing the responses by subject. The last question on the card, "What can we do to improve this activity?" was often left blank or marked "nothing" and therefore these results were not included here.



Conclusions

Response to the "Understanding Air" activities was highly positive in both settings-- with the general audience and with the eighth grade students with Likert scale scores all questions averaging between 3.2 to 3.8 (out of 4.0). The results show that the informal group was a little younger and scored themselves higher on: 1) learning, 2) enjoyment and 3) interest. However to prove whether age indeed was the factor, age would need to be controlled for. In the open ended questions, the informal group subjects' top responses were: the composition of air, how to write formulas, and the existence of particles in the air. (An instrument for counted 2.5 nm particles was demonstrated). Overall, the 8th graders' top responses were: the composition of air and the chemical reaction of combustion.

Taken together, these results are strong indicators that the key concepts for climate change and air pollution are being acquired. Also, health was mentioned as a topic learned in 11% of the responses in both audiences. This is another positive indicator that the "Understanding Air" curriculum material can deliver an effective environmental health outreach program to students in classrooms as well as to general audiences at public events.

Acknowledgements

Funding Support: MIT Edgerton Center and NIEHS Grant NIH P30-ES002109
Other Support: COE²C thanks Ms. Juliet Perdichizzi for her excellent technical assistance.

NIEHS Core Center Meeting, April 2013

Responding to Community Needs

Outreach Programs - Engage Specific Audiences and Address Community Requests

Marti Lindsey, PhD, Outreach Director, Serrine S. Lau, PhD, Center Director, Southwest Environmental Health Sciences Center (SWEHSC), Universtiy of Arizona

Environmental Health in American Indian Communities

Meeting the Needs of Community Members and Environmental Professionals

Background and Rationale

The US census reports almost 5% of the Arizona public is of American Indian decent compared to under 1% elsewhere in the country. Many tribal communities are disproportionately effected by natural and industrial environmental hazards. Therefore the SWEHSC has chosen to focus on those communities for community engagement efforts, with information concerning SWEHSC topics, exposure to environmental chemicals, including organic solvents, metals, airborne particular matter, and natural toxins.

Goals

Create a Community partnership with the Inter Tribal Council of Arizona (ITCA) and the Gila River Indian Community (GRIC) to identify and prioritize environmental toxics:

1. Create a list of Risks within the Community
2. Inform the Community about environmental health / toxics problems to possibly address
3. Focus on concerns of Community members
4. Create a Community Risk Reduction Plan

Audiences

- Elders
- Community Leaders
- Youth and Families

Activities/Content

SWEHSC investigators presented their research at community meetings:

- "Environmental Causes of Cancer"
- "Air Pollution and Human Health"
- "Environment and Genetics Interactions"
- "Asthma & the Environment"

The COEC adapted existing materials and developed / presented new materials at thirteen Community activities Information walks about:

- "Asthma and Allergy"
- "Diabetes and the Environment"
- "Dangers of Pesticides and Household Chemicals"

Evaluation

- Reached over 900 Gila River Indian Community members and over 50 of the Community's leaders
- GRIC DEQ regularly requests COEC to provide programming for their events - reaching 250 more people each year

Assessment

- Risk Ranking Activity
- Wrote 2 Phase II grants to continue the work

Actions

- Director of the GRIC DEQ serves on the SWEHSC SAB
- COEC assisted with writing a CARE Phase II grant
- COEC asked to provide professional development sessions to ITCA Tribal Environmental Managers meetings - increasing the appreciation of SWEHSC as a resource for Tribes
- COEC participates in GRIC Earth Day and youth conferences

Impact Measures - Environmental Health Sciences Community Outreach & Engagement

Impact = # participants X duration of exposure X depth of information
| dictated by goals & project rationale | measured by evaluation & assessment | may lead to action

Impact	Rationale	Goals	Numbers	Evaluation	Assessment	Duration	Activities	Content	Action
High	Goals developed in collaboration	Develop Understanding & Action	10's	Interviews, detailed surveys, focus groups	Written work, joint grants, & posters	High	Internships, joint program development & CBPR	Detailed current research information that may be controversial	Research questions, policy development, EHS for a career
	Done in collaboration	Increase Knowledge & Interest		Session evaluations, participant discussions	Pre/Posttests, knowledge surveys		COEC sponsored seminars, meetings, & professional development sessions	In-depth information that may be controversial	Ask question(s), attend another meeting, apply for participation
	Requested by the community	Create Knowledge & Interest		Observations, session evaluations	Debriefing discussions & quizzes		Informaiton displays & presentations at partner events, such as health fairs	General information with an effort not to be controversial	Reach out to COEC, attend meeting(s)
Low	Initialed by COEC	Develop Awareness & Interest	1000's	Surveys, numbers, web hits	Participant comments	Low	Flyers, media (TV & Newspaper) articles, & webpages	Basic non-confrontational non-controversial information	Look for more information

Challenges

- provide venues for increased exposure over time
- reach the largest number of people at each level of impact
- create single projects that become systematic programs over time
- disseminate appropriate levels of information while promoting the research of the center
- provide information in ways that promote understanding and action but not paralyzing fear

Bioscience Education & Environmental Health

Promoting Students to Enter the Research Pipeline

Background and Rationale

In response to requests from the Southern Arizona education community, the COEC has placed high school students in SWEHSC laboratories for over ten years. In collaboration with the BIO5 Institute this became the KEYS High School Student Research Internship Program.

Goals

1. To promote high school students pursuing research careers
2. Expose high school students to Environmental Health Sciences
3. To disseminate SWEHSC research to the community

Audiences

- High School Students
- High School Teachers
- General Public

Activities

- 1 week of hands-on training
- 6 weeks of full time laboratory research
- Reading research papers lessons using asthma articles
- Toxicology testing experiment & lecture
- Weekly science literacy workshops
- Create and present a science poster
- Interns Receive 3 science credits
- Teachers participate as Professional Dev
- Press Releases and internet stories
- Year round fund raising

Evaluation

- Participant observations & discussions
- Session evaluations
- Mid term survey - interns & faculty
- Alumni interviews & surveys

Assessment

- Pre/Post assessment
- Written assignments
- Written Reflections
- Posters created & presented

Actions

- Since 2007 KEYS has provided 188 highly motivated high school students (16+) a summer opportunity to participate in laboratory research.
- SWEHSC investigators are integral to the success of all student programming: Providing placements for KEYS Interns, promoting their graduate students and post-docs to mentor high school students, providing presentations, reviewing materials, and supporting their students in conducting activities with KEYS interns
- There have been 23 articles and television segments since 2007

"With today's wonderful young minds we will be able to train the next generation of scientists, health professionals, and great thinkers. These young people are the ones who will be continuing with the scientific discovery. We must start now by allowing students to ask questions in the search for answers." – Serrine S. Lau, PhD, Director, SWEHSC

Defining Environmental Health Literacy - NIEHS Inter Center Pilot Project

Universities of Arizona[1] & Rochester[2] - Chen, S.[2] Lindsey, M.[1] Valdez, M.K.[1] Velez, M.D.[2]

Background

Within health literacy are concepts and skills specific to different areas of health. We are interested in understanding the content and skills that make someone environmentally health literate (EHL). Rather than develop our own proposal of what EHL means, we seek to answer this question by gathering the input of a variety of EH professionals, developing a consensus model, and fast-tracking a process that is still ongoing for general health literacy.

Methods

1) Interview EH professionals about the skills and knowledge necessary to EHL
2) Build a model of EHL
3) Interview EH users to compare how lay audiences process EH information to the model of EHL
4) Develop a feasible model of EHL for a public audience
5) Survey EHS centers and outreach members response to the model

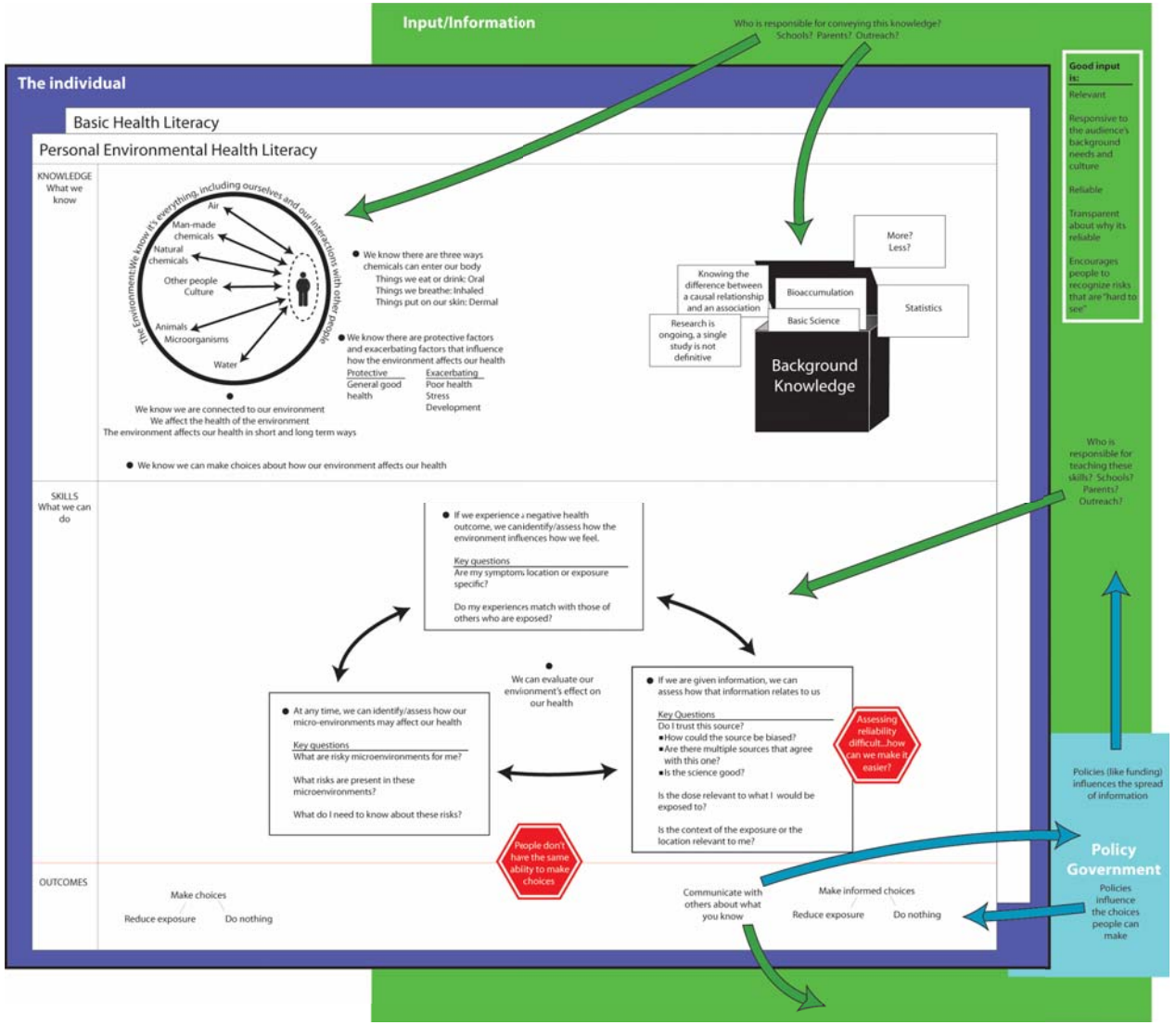
Participants

Demographics	(n=11)
Age Mean (min, max)	51 (27, 66)
Gender	Male= 3 Female= 8
Race	Caucasian= 10 African American= 1
Ethnicity	Non-Hispanic= 10 Hispanic= 1
Type of Profession*	Researcher= 3 Secondary School Educator= 5 Adult Educator=2 Environmental Professional=1
Education Level	Masters= 8 Ph.D.= 3

Next Steps

Our immediate next steps are to refine the common themes of EHL through additional interviews and a survey that will be distributed to NIEHS grantees nationwide. This survey will include open-ended questions that invite survey takers to provide additional comments and input.

Our long-term goals include developing a measure of EHL, determining how it relates to general health literacy, identifying the consequences of low versus high EHL, and implementing methods of improving EHL.



Where on the EHL scale do you think the following skills rank? Low, Medium, High, or Not Necessary

Knows the difference between a casual relationship and an association.	Knows we can make choices about how the environment affects our health.	Understands that environment and human health are interconnected.	If experiencing negative health outcome and can identify and assess how the environment can influence the way we feel.	Can communicate with others about our EH knowledge.	At anytime can assess how our micro environments may affect our health	If given information, we can assess how that information relates to us.	Knows there are three ways a contaminant can enter our body: dermally, through inhalation or ingestion.	Understands research is ongoing and a single study is not definitive.

Preparing the Next Generation of Interdisciplinary Environmental Health Workers: Two Graduate Student Projects – EHSRC COEC, 2012

The 2012 Farm Bill – Implications for Environmental Health

Meagan Schorr, MPH Graduate Student in Community and Behavioral Health
University of Iowa College of Public Health

In Fall 2011, an Environmental Justice Forum and PEPH Meeting were held in Iowa City, in conjunction with Ken Olden receiving the Richard and Barbara Hansen Leadership Award from the University of Iowa College of Public Health. At these events, it became widely apparent that the federal Farm Bill has far-reaching implications for environmental public health. Immediately following, NIEHS asked the EHSRC to research and report on the environmental health aspects of the Farm Bill.

The Farm Bill is the primary agricultural and food policy tool of the federal government intended to set the farm, food, and rural policy goals and priorities for the United States. The next version of the Farm Bill is currently under review. Its importance lies in a legacy of farm policies which have resulted in a multitude of environmental health and sustainability concerns.

The advent of the next Farm Bill is an opportunity to reform its tenets and effect policies which promote fair farming practices, ensure environmental stewardship, and support an infrastructure to allow for healthy affordable food to be accessible to all. The 2012 Farm Bill is titled, "The Agriculture Reform Food and Jobs Act of 2012.

Impacts to Public Health

Livestock Production

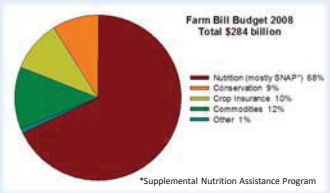
- Farm policy keeps costs of commodity crops (i.e. soybeans and corn) low, promoting grain-fed livestock over healthier and more environmentally friendly production systems such as pasture-raised and grass-fed meat, eggs, and dairy.
- Commodity grain producers receive subsidies to lower their costs making it possible for livestock producers to lower production costs. Large livestock producers are put at an advantage over small farmers in the market.
- A market disproportionately favorable to industrialized animal operations allows them to thrive and proliferate. Concentration of production increases toxic emissions and over-application of animal waste lead to environmental health concerns in the form of air and water pollution and antibiotic resistance

Federal Food and Nutrition Assistance Programs

- Supplemental Nutrition Assistance Program (SNAP) – (formerly known as the food stamp program) is intended to improve the health of low-income people by helping families buy the food they need for a nutritionally adequate diet.
- The Emergency Food Assistance Program provides food at no cost to low-income Americans in need of short-term hunger relief.
- The Commodity Supplement Program provides commodity food packages for low-income pregnant and breastfeeding women, other new mothers up to one year postpartum, infants, children up to their sixth birthday, and elderly persons at least 60 years of age who meet income eligibility requirements.
- Many of these federal food programs are unable to meet USDA dietary guidelines because they rely heavily on donated food.

Local Foods

- When foods travel a shorter distance to market, they retain freshness and more nutrients.
- Foods grown and sold locally benefit small farmers and the local economy
- When food is transported over long distances, vehicles contribute to increased energy use and environmental pollution.



Sustainability

- Current farm policy supports a model that is highly dependent on pesticides and herbicides, which can pose a threat the public.
- A shift to biomass production on marginally productive land could have significant environmental and economic benefits. Use of perennial crops (i.e. prairie grasses and fast growing trees) could reduce soil erosion; increase water retention and infiltration; decrease pesticide and fertilizer use; improve carbon sequestration; and increase levels of biodiversity and wildlife habitat while providing biomass for energy production.

Food Supply, Prices and Access

- Crops such as fruit s and vegetables receive little government support and limited crop insurance which makes healthier food choices more expensive to grow and ultimately to purchase, while processed foods are cheaper and easier to access.
- Current farm policy encourages overproduction of commodity grain and oilseed crops (i.e. corn and soybeans) driving down production costs and leading to increased use of hydrogenated vegetable oils and high fructose corn syrup in foods
- For many consumers, food selection is not based on nutritional value but on cost factors or availability, with greatest health impacts on low-income communities

The Iowa Flood Information System and Public Health - An Integrative Project

Joanna Krajewski, MPH Graduate Student in Community and Behavioral Health
University of Iowa College of Public Health

In 2012, the EHSRC COEC partnered with the Iowa Flood Center to incorporate public health information into The Iowa Flood Information System (IFIS) , a web-platform developed at the University of Iowa following the Midwest flood event of 2008. The system provides the general public easy access to community-based flood conditions, forecasts, inundation maps and flood-related data and information.

This EH graduate student-led collaboration expanded IFIS to include the locations of trauma centers, hospitals and clinics, combined sewage systems, water treatment plants, un-sewered (high risk) communities, and livestock facilities within the state. In addition, plans are underway to include flood safety and evacuation tips, road closings maps, and information on sandbag availability. To date, public health information is still being incorporated into the system.

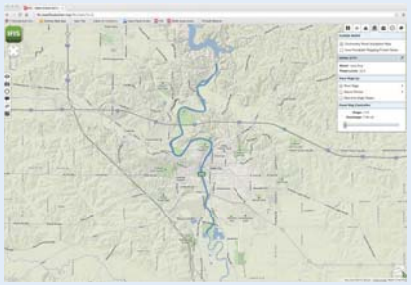
The IFIS will help communities make better-informed decisions on the occurrence of floods, and will alert communities in advance to help minimize damage and health impacts of floods.

University of Iowa Campus, 2008

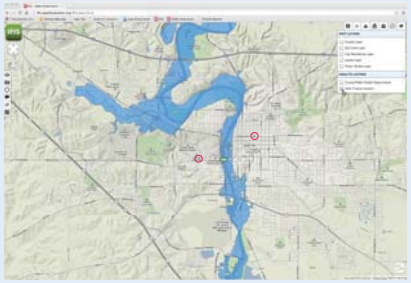
Bridge sensors track water elevations and stream the data directly to IFIS for motorists traveling a given region of the state. This aids in determining safety and accessibility during a flood threat event. Multiple views accommodate various user types and needs.

Public Health Latitudes/Longitudes Integrated into IFIS

- Trauma Centers
- Health Departments
- Hospitals and Clinics
- Sewage Systems
- Water Treatment Plants
- Livestock Facilities
- Un-sewered Communities



This Community Flood/Inundation Map shows the Iowa River flowing through Iowa City, IA at a relatively normal height of 17.0 feet.



This Map shows the Iowa River flowing through Iowa City at flood stage, demonstrating the reach of flood waters. Circled in red are the nearest trauma centers available to people in the area.

Interactive interfaces allow access to inundation maps and flooding scenarios with contributions from multiple rivers. Real-time and historical data of water levels, gauge heights, and rainfall conditions are available in the IFIS by streaming data from automated IFC bridge sensors, USGS stream gauges, radar technology, and National Weather Service forecasts. Users are able to filter data sources for their communities and selected rivers.

The IFIS includes a rainfall-runoff forecast model to provide a five-day flood risk estimate for over 1000 communities in Iowa. Multiple view modes in the IFIS accommodate different user types from general public to researchers and decision makers by providing different levels of tools and details. River view mode allows users to visualize data from multiple IFC bridge sensors and USGS stream gauges to follow flooding condition along a river.

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Middleton, WI 53562
Tel. (608) 831-9777
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CHILDREN'S ENVIRONMENTAL HEALTH SCIENCES CORE CENTER
THE NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES

OUR NEXT GENERATION INC.
Neighborhood Center
3421 W. Lisbon Ave
Milwaukee, WI 53208

The Lisbon Avenue Noise Initiative

OVERARCHING GOAL

Empower youth and other community members to recognize environmental health problems and community assets and to learn to work together with multiple partners and leverage existing resources to create a healthier, safer environment and improved quality of life.

ABSTRACT

The Lisbon Avenue Initiative began when Mr. David Boucher, Amaranthe Café and Bakery owner, inquired about *'noise pollution.'* The café is located on Lisbon Avenue, a highway through the city's north side. People experience heavy traffic and sirens from two ambulance companies and a fire department.

In response, the Community Outreach and Engagement Core (COEC) conducted key informant interviews with local fire, police, business, and community organizations to identify stakeholders' perceptions about the environmental challenges and assets in this neighborhood.

Both ambulance company owners offered 'noise' as a key issue. They also noted that many of their 'runs' did not require ambulance transit. Clients frequently use ambulances for transportation to health care (i.e., hospitals) despite a federally qualified health center located in the neighborhood.

COEC recruited a bioengineer and community noise specialist, Mr. Gonzalo Sanchez, President of *Industrial Design, Inc.*, from the Madison area, to serve as our acoustics expert. He is volunteering his time.

Our Next Generation (ONG), an after-school/summer youth organization on Lisbon Ave. & 35th Street offered to have their youth be key team members. These high school-aged youth and ONG staff are learning from Mr. Sanchez and COEC about the science of noise; causes; how it is measured and mitigated; and health effects including hypertension, stress, and violence.

A zebrafish experiment is being designed by Center Scientist/COEC science educator Dr. Daniel Weber and Mr. Sanchez for ONG youth to conduct in the Center's behavioral toxicology laboratory that Dr. Weber directs. The experiment is designed to help youth understand the behavioral reactions to stressful noise and use this to educate the community and its leaders. Students will be able to do posters and disseminate their work at the 2014 Science Conference conducted annually by our Center's Science Education Partnership Award team (Drs. D. Petering and C. Berg, Co-PIs).

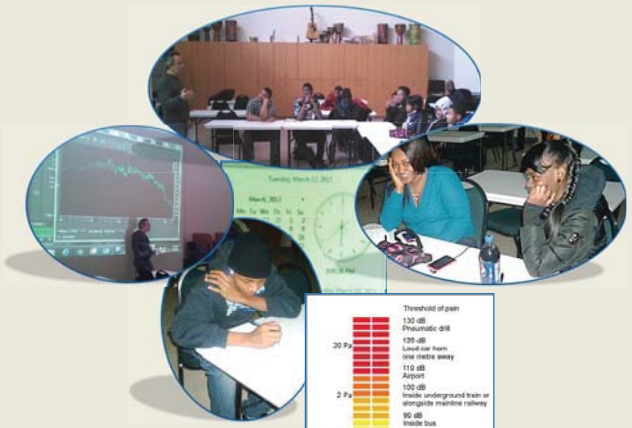
Several ONG youth presented some of their initial evidence at the 2013 SEPA-sponsored Conference held April 15 at UW-Milwaukee. Ultimately, the plan is for multiple youth to be involved in disseminating their findings (with input from the community) at other conference(s) and to elected and appointed city officials.

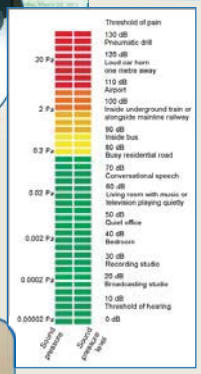
Mr. Sanchez, community acoustics expert, setting up for the evening's program.

'Lisbon Avenue Noise Initiative' Team

Left to right: Mr. Gonzalo Sanchez, bioengineer and President, *Industrial Designs, Inc.*; Mr. Robert Dunn, Executive Director, *Our Next Generation (ONG), Inc.*; Ms. Rukiya Alexander, ONG Educational Coordinator; Mr. DeShawn Ewing, ONG Program Leader; Ms. Ruth Shank, COEC Community Outreach Specialist; Dr. Jeanne Hewitt, COEC Director: Mr. Luis Delgado, COEC Community Outreach Specialist.

Ms. Rukiya preparing the youth for learning about sound and how it is measured.





Below, team preparing for April 15, 2013 Science Conference. On right, presenter Julian Miller. Not present, Devon Gildart.

Dr. Daniel Weber getting ready for the noise experiment in the behavioral toxicology laboratory.

Lisbon Avenue

OUTCOMES

SHORT-TERM

1. Understand noise—what it is, how noise is measured, its effects on human health, its causes and solutions.
2. Develop a zebrafish model of noise and the startle reflex to learn about noise and demonstrate its effects to other audiences.
3. ONG youth communicate what they know to other youth and teachers at local science conferences in 2013 and 2014.

MID-TERM

4. Work effectively in community groups as leaders and members.
5. Appreciate the policy-making process and how to effect change.
6. Communicate what they know about noise and other environmental and social factors to community members (in a forum) and elected and appointed officials (in formal meetings).

LONG-TERM

6. Advocate for community change based on science and community input.
8. As funding becomes available, submit abstract(s) to present findings with scientists (including Mr. Sanchez) and ONG leaders at one or more national professional meetings

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National Institute of Environmental Health Sciences

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People

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> "It's helpful… we're not going to re-invent the wheel."

> "The real value of PEPH is connecting people who should be connected but don't know about each other."

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