Environmental Health Sciences Core Center-EHS CC (NIEHS) Inter-Center Working Group Initiative

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Inter-EHS CC Working Group

- Environmental Health Science (EHS) Core Center Program-funded by NIEHS

- Strength of EHS CC - COEC program
  - communities
  - health care professionals
  - decision makers

- History of working Group
- Accomplishments to Date
- Individual Presentations
History of Working Group

- NIEHS Annual EHSCC Meeting-March 2012
  “Hydrofracking and Public Health Issues and Impacts”-Dr. Penning

- Ten of twenty EHSCC indicated a desire to interact: bi-monthly teleconferences

- Sixteen Centers and COEC representatives are now in the group
  - Columbia University
  - Johns Hopkins School of Public Health
  - MD-Anderson
  - Oregon State University
  - University of Iowa
  - University of Pennsylvania
  - University of Rochester
  - University of Wisconsin –Milwaukee
  - Harvard School of Public Health
  - New York University
  - MIT
  - University of Cincinnati
  - UNC-Chapel Hill
  - USC and UCLA
  - University of Texas Medical Branch
  - Rutgers University

- Mobilization of Center resources to tackle emerging environmental health challenges
Penn Pilot Project: “Field Survey of Health Perception and Complaints of Pennsylvania Residents in Marcellus Shale Regions” Poune Saberi MD and Judith McKenzie, MD – Penn [Presented at the AOH Conference in April, 2013]

Inter-Center Pilot Project: “Groundwater quality and health outcomes in adjacent areas with and without hydro-fracturing”
Columbia Investigators: Beizhan Yan, PhD; Martin Stute, PhD; Brian Mailloux, PhD; Matt Neidell, PhD; Steven Chillrud, PhD
PENN Investigators: Reynold A. Panettieri, Jr. MD; Poune Saberi, MD, MPH; Marilyn Howarth, MD
Inter-Center Pilot Project:
“Harvard WorldMap: Fracking Research Repository for All Concerned (HWM:FRRAC)”

Harvard Investigators: Ann Backus, A.B. MS; Aaron Bernstein, MPH, MD;
PENN Investigators:  George Gerton, PhD; Alexander S. Whitehead, D.Phil.  http://worldmap.harvard.edu/maps/FrackMap

NIEHS- P30 Opportunity Fund Supplements:
2012- “Fracking - information needs” Rochester /U Cincinnati / UNC-CH
2013- “Risk Perception of Hydrofracturing in Eastern States”
       COECs: Penn; U. Cincinnati; U. Rochester; UNC- Chapel Hill-Gray
2013- “Effects of Oil and Gas Drilling in Appalachia” U. Cincinnati/Oregon
2013- “Impact of Sand Mining & Transport in Communities” U. Iowa
2013- “Produced Water Toxicology and Community Engagement” NYU, Rutgers
1. base-line ground water quality data should be taken before drilling begins and monitored over the lifetime of the gas-producing well.

2. full disclosure of the HF chemicals must take place so that they can be correlated with measurements of ground and surface water pollution: composition of the HF and produced water must be determined for hazard identification.

3. a validated specific and sensitive indicator of early ground water contamination should be identified for site management and mitigation.

4. fate and transport of ground and surface water pollutants should be elucidated under HF conditions.

5. the effluent from waste-water treatment plants should be monitored to determine their effectiveness

6. fundamental research on the toxicology of the HF and produced water must be performed for risk characterization
1. ambient and occupational air-quality should be measured at active drilling sites and be compared with base-line measurements in adjacent regions without UNGDO.

2. the impact of diesel emissions on local air quality should be determined.

3. residential indoor air quality data for homes potentially impacted by UNGDOs should be compared with those homes not impacted.

4. determine spatial and temporal relationship between emissions from multiple point sources with their impact on air quality.

5. the impact on air pollution by a field of gas producing wells should be compared to emissions produced by coal-fired power plants.
Recommendations - Community Outreach

1. Embrace CBPR principles in designing studies on environmental and public health impacts of UNGDO so that the right studies are performed. All stakeholders should be engaged to foster multi-directional communication and accountability.

2. Communities should help determine how best to disseminate research findings and there should be timely and transparent dissemination of data.

3. The sources of funding for research should be openly disclosed to communities.

4. Determine whether rapid “industrialization” overwhelms health and public services and the social fabric of communities.

5. Determine how existing regulations impact the reporting of environmental health effects of UNGDO.

6. Conduct research on risk perception, including the impacts on community polarization.
1. Health utilization in communities with and without hydrofracturing should be performed to identify health outcomes that may have changed.

2. An environmental epidemiology study should be performed to determine whether an association exists between health outcomes data and water-quality in private drinking wells in communities with and without hydrofracturing.

3. An environmental epidemiological study should be performed to determine whether air pollution associated with unconventional natural gas drilling increases the incidence of respiratory illness and cardiovascular disease.

4. Epidemiological data must be accompanied with exposure data: proximity mapping, biomonitoring, and biomarkers of exposure and effect.
Members of the working group

Leslie Reinlib, PhD  Program Officer
Liam O’Fallon, MA  Program Analyst

Sara Mishamandani