

NIEHS highlights public health and disaster research at oil spill conference

By Joe Balintfy

Researchers from more than 35 states and 20 countries met Feb. 16-19 in Houston to focus on results from oil spill, ecosystem, and public health research, five years after the Deepwater Horizon disaster. The 2015 Gulf of Mexico Oil Spill and Ecosystem Science Conference attracted representatives from 140 universities, 80 companies, and 17 government agencies. Altogether, about 1,000 people participated in sharing the results of research and application of findings.

“This year’s meeting highlighted the opportunity we have to do more, and to increase attention to the importance of health research related to the Gulf oil spill,” said NIEHS and National Toxicology Program Director Linda Birnbaum, Ph.D.

In her keynote presentation during the session on human health, Birnbaum reviewed National Institutes of Health (NIH) and NIEHS accomplishments, including new health and safety resilience training, ongoing efforts of the GuLF STUDY, toxicology research, and the Deepwater Horizon Research Consortia, which created community-university partnerships aimed at addressing the health effects stemming from the oil spill. Highlighting the importance of community involvement, Birnbaum said, “Communities know who they are, know what concerns them, and want to work with researchers to be part of the program.”

She also emphasized the need to leverage the research platforms and relationships that have developed. In particular, the new NIEHS Disaster Research Response Project is addressing challenges in carrying out timely health research in response to future disasters and emerging threats (see [text box](#)).

Gaps to gains

Organized by the Gulf of Mexico Research Initiative (GoMRI), the conference included more than 500 oral and poster presentations. One session, titled Gaps to Gains, held particular interest for NIEHS staff and grantees, as it addressed two important conference themes — public health and community engagement. NIEHS presenters for this session included Birnbaum; [Dale Sandler, Ph.D.](#); [Christine Ekenga, Ph.D.](#); [Aubrey Miller, M.D.](#); [Joseph \(Chip\) Hughes](#), and predoctoral fellow Kaitlyn Gam.

Sandler, Ekenga, and Gam shared findings from the [GuLF STUDY](#) (<https://gulfstudy.nih.gov/en/index.html>)

. Sandler pointed out that participants in the study reported cough, shortness of breath, wheeze, and tightness in the chest. “Workers had a small but statistically significant higher prevalence of all four of the respiratory symptoms at the time they enrolled in the study, after we took into account where they lived and the other potential confounding factors,” Sandler said.

Miller and Hughes shared presentations on new efforts to perform timely disaster health research, and build responder mental health resilience. “Continued NIEHS involvement with GoMRI and the Deepwater Horizon oil spill will help assure that human health and environmental health impacts are not forgotten or overlooked as the Gulf recovers,” said Hughes.

Grantee perspectives

Several NIEHS grantees also presented during the Gaps to Gains session, many from Tulane University (see [sidebar](#)). [Stacy Drury, M.D., Ph.D](#) (<http://tulane.edu/som/departments/psychiatry/faculty/stacy-drury-md-phd.cfm>) , associate professor of psychiatry and behavioral sciences at Tulane, discussed chemical and nonchemical stressors linked with the spill, and the impact on telomere length, which is an indicator of stress and health, in infants and young children. She said that mothers,



“You can’t do environmental health research unless you get the communities involved,” Birnbaum said at the conference. (Photo courtesy of Joe Balintfy)

Other NIEHS grantees presenting at the conference

[Emily Harville, Ph.D](#) (http://tulane.edu/publichealth/epi/faculty_harville.cfm) , **Tulane University** — “Experience of the Deepwater Horizon Oil Spill and Mental Health in Pregnant and Reproductive-aged Women”

[Jessi Howard, Tulane University](#) — “Community-based Participatory Research in Southeast Louisiana on Challenges in Determining Air and Foodborne Exposures in Low-income Participants”

[Arti Shankar, Ph.D](#) (http://www.sph.tulane.edu/publichealth/bio/faculty_shankar.cfm) , **Tulane University** — “Quality of Life as a Measure of Resilience in Gulf Coast Women Pregnant for the First Time”

[Mark Wilson, Ph.D.](#)

through their parenting, may be able to counter the biological effect of stressors.

Other speakers discussed mental health, ways to quantify health impacts, and community-based participatory research related to the Gulf oil spill. “The university-community partnerships are collaborating on approaches and sharing results, to understand better the interplay and effects of multiple stressors on human health,” said Birnbaum.

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(http://tulane.edu/publichealth/ehs/faculty_wilson.cfm), **Tulane University** – “A Targeted Risk Assessment of Polycyclic Aromatic Hydrocarbon Exposure in Vietnamese-American Shrimp Consumers Following the Deepwater Horizon Oil Spill”



Richard Kwok, Ph.D., left, co-study leader on the NIEHS Gulf STUDY, talks with Miller, right, who presented “Translating Lessons From the Gulf Oil Spill Into Improved Disaster Health Research.” (Photo courtesy of Joe Balintfy)



Some of the NIEHS participants and presenters gathered at the NIEHS display were, from left, Balintfy; Hughes; April Bennett; Gam; Ekenga; Sandler; Kwok; and Miller. (Photo courtesy of NIEHS)

Disaster research exercise prepares local, national participants

Prior to the conference, more than 140 participants, including police, firefighters, representatives from state and local health departments, academics, and government representatives, met for the **second tabletop exercise** organized by the NIH Disaster Research Response Project. NIEHS and partners reviewed the realistic but fictitious scenario of a Category 4 hurricane hitting Galveston Island and sending a 20-foot storm surge up the Houston ship channel, which is lined with oil tankers, refineries, and neighborhoods.

Progress in disaster preparedness, response, and recovery may be hampered by the absence of scientific data to guide procedures, citizen action, and the use of medical countermeasures. “Short and long-term health consequences from a variety of exposures often go unknown,” said Hughes. “Researchers have identified behavioral health consequences, but don’t yet fully understand the needed preventive and mitigating measures. While there are many reasons for the overall lack of disaster science, a major contributor is the inability to conduct disaster research in the immediate post-disaster period, when critical information is most perishable.”

The experts discussed oil spills from tankers and refineries, as well as likely fires. Responders would have to prepare for air and water pollution problems, as well as flooding that would affect a large number of people.

“What we realized is that this storm surge would cause flooding for miles,” said Birnbaum. “And that 1.5 million residents would be displaced from the area.”

Participants exchanged ideas about what they would need to do and learned the importance of doing research in a scenario like this. “Disaster health research helps us understand ways to prevent adverse impacts in the future,” said Birnbaum.

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