

Community resilience and disaster response in the U.S. Gulf Coast

By Annah Wyss

"Residents, Responders, and Resilience" was the topic of a Feb. 25 webinar hosted by the NIEHS Partnerships for Environmental Public Health (PEPH) program. The event highlighted NIEHS-funded research on community responses to technological and natural disasters, specifically the Deepwater Horizon oil spill and Hurricane Katrina.

By describing their community-engaged research and workforce development projects in the Gulf Coast region, presenters illustrated how well-built social networks and community engagement enhance the resilience of communities affected by disasters and can help address future health threats.

Social capital influences community resilience

Brian Mayer, Ph.D., associate professor of sociology at the University of Arizona, presented on his research funded through the Deepwater Horizon Research Consortia. He opened the webinar by explaining the ways both individual and community level characteristics, including human, economic, social, and political capital, can influence the resilience of populations before and after a disaster.

In their research, Mayer and colleagues compared two counties in Florida impacted by the Deepwater Horizon oil spill. They found that the county with stronger social capital - measured as a network of social ties between various agencies, businesses, and other organizations within and outside the community - experienced a stronger recovery, including more rapid growth in the tourism and seafood industries.

"Community resilience means the capacity of communities to respond positively to crises," said Mayer. "It is the ability of a community to adapt to pressures and transform itself in a way which makes it more sustainable in the future."

Community-engaged research identifies challenges and solutions

[Healthy Gulf Healthy Communities \(HGHC\)](http://healthygulfcoast.org/),
(<http://healthygulfcoast.org/>)

(HGHC), another project funded through the Consortia, identified and engaged community partners who represent the needs of the diverse communities impacted by the Deepwater Horizon disaster. According to Tracy Irani, Ph.D., professor of agricultural communication at the University of Florida (UF), and Sam Mathews, Ph.D., professor emeritus at the University of West Florida, the project illustrates the utility of building networks between individuals and communities.

In April 2012, HGHC sponsored a community forum that brought together members of government, nongovernment, faith-based, and other organizations in the region stretching from the southern coast of Alabama to the western coast of Florida. In 2013, they also conducted community environmental scans. Irani and Mathews analyzed the transcripts from the forum, as well as data from the environmental scans, and identified challenges stemming from the disaster. These included elevated levels of assistance requests, health disparities within communities, and lack of clear planning and communications. Addressing these challenges will better prepare these communities for future disasters.

"Programs need to link from the inside out, not the outside in," Mathews said about efforts to address these community needs before and after a disaster. He stressed the importance of establishing regional community resilience centers to support communication among organizations.

Education empowers communities

In addition to technological and man-made disasters, natural disasters have affected communities in the Gulf region in recent years. Ebony Turner, Ph.D., assistant director for education and training at Dillard University's Deep South Center for Environmental Justice described several projects her group led to build community resilience in response to Hurricanes Katrina,



Mayer uses community-based participatory research to engage local stakeholders in the research process. (Photo courtesy of Brian Mayer)



Irani also serves as development director of the UF Center for Public Issues Education in Agricultural and Natural Resources. (Photo courtesy of University of Florida)

Rita, and Sandy, as well as the Deepwater Horizon cleanup.

In Houston and New Orleans, the DSCEJ sponsored a workforce development project to train over 100 individuals as construction and remediation workers. The center also supported efforts to replace contaminated soil with sod for 35 homes, as well as several schoolyards and playgrounds in New Orleans. Residents and contractors participated in training on mold remediation, and community members received training in soil remediation and use of personal protective equipment, which proved valuable after Hurricane Katrina and, later, during the Gulf oil spill cleanup.

Like the other presenters, Turner and colleagues engaged the communities they serve, to guide response efforts. "You need to hear it from the community. What do they need?" Turner concluded.

(Annah Wyss, Ph.D., is an Intramural Research Training Award (IRTA) postdoctoral fellow with the NIEHS Genetics, Environment, and Respiratory Disease Group.)



Although retired, Mathews remains involved in research projects such as HGHC. (Photo courtesy of Sam Mathews)



Turner and the DSCEJ address community and worker resilience in response to natural and man-made disasters, through workforce development and community education and training programs. (Photo courtesy of Ebony Turner)

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