

A community for disaster science

During disasters such as the 2010 Deepwater Horizon oil spill, engaging the expertise of the academic community helped responders make critical decisions. A major barrier to such engagement, however, is the cultural gap between academia's reward system and that which prevails in the disaster response community. Given the importance of developing smart approaches to disasters, whether natural or human-caused, we need to bridge this gap.

Responders are often focused on ending an emergency quickly, with minimal damage. Academics are driven to understand the basic science of these events first, as a basis for proposed actions. Each community is used to speaking to different audiences and delivering answers on their own time scales. But these differences should not discourage attempts to connect these communities.

One approach is to foster a cohesive community of interdisciplinary disaster scientists: researchers who focus on crises that severely disrupt the environment or threaten human health, and can apply scientific methods in a timely manner to understand how to prevent, mitigate, respond to, or recover from such events. Disaster scientists could come from a range of disciplines: environmental science, human health, toxic chemistry, geophysics, ecology, atmospheric science, oceanography, and the social sciences. A disaster science community could develop its own unique culture. It is well known in the disaster response community that the preparation that takes place in the years, months, and days before an event ever occurs is what truly makes the difference in reducing response time, improving coordination, and ultimately reducing impacts. In the same vein, disaster scientists would benefit from consistently interacting with the response community. The worst time to be exchanging business cards is during a crisis. Trust takes time to establish. Researchers could learn to liaise with federally authorized responders (such as the U.S. Coast Guard), police, firefighters, and others respond-

ing to oil spills, forest fires, earthquakes, hurricanes, and other emergencies. Researchers would develop ties with relevant industries (oil companies, utilities, insurance companies, etc.) and help all sides identify vulnerabilities, increase resilience, and better coordinate the scientific response. Together, responders and affected industries could create funds to support prioritized research.

The advantage of building a community for all disasters, rather than for just one type, is that researchers maintain momentum between emergencies, which may be decades or more apart for any one class. Every disaster poses similar challenges: knowing when to speak to the press and what to say; how to develop "no regrets" actions; how to communicate with decision-makers and the public; how to keep proprietary industry information confidential; how to get rapid, actionable peer review of relevant analyses and proposed actions.

So how can such a community be fostered? Scientific societies could create focus groups and thematic sessions. The American Geophysical Union's existing Focus Group on Natural

Hazards could be broadened to include disaster science. Universities could create interdisciplinary centers to pull together the relevant disciplines. The Science Partnerships Enabling Rapid Response project at the Center for Ocean Solutions is currently proposing structures and mechanisms that will enable ongoing community building and rapid information exchange between federal responders and disaster scientists.*

As U.S. Geological Survey director during the Deepwater Horizon spill, I worked with many researchers who cared not whether they got a peer-reviewed publication out of their efforts; they felt it their duty to respond to the limits of their ability. I worked with first responders who craved good scientific information for making decisions. But that might not always be the case. By creating a community for disaster science, we can encourage and better reward such selfless service.

– Marcia McNutt



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“The worst time to be exchanging business cards is during a crisis.”

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*www.centerforoceansolutions.org/project-science-partnerships-enabling-rapid-response.

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