

Interspill 2022 Extended Abstract  
Category: Outreach and Engagement

Nasim Ganji, Ph.D.  
University of Wisconsin, Madison

Thomas Coolbaugh, Ph.D. **Contact: [tcoolbaugh@ara.com](mailto:tcoolbaugh@ara.com)**  
Applied Research Associates, Inc. (Ohmsett)

Rob Holland, Ph.D.  
Oil Spill Response Limited

Tim Nedwed, Ph.D.  
Exxon Mobil Corporation

Title

Oil Spill Response Science: The Value of Graduate Student/Industry Scientist Interaction

Abstract

A key aspect in any area of scientific research is the interaction at interfaces, whether physical interfaces or those more diffuse. In particular, it is important to recognize that interfaces exist at different levels, e.g., between technical disciplines, different organizations, different analytical techniques, or specific backgrounds and experiences of individual team members. With that in mind, a focused effort should be made to recognize where interfaces may exist and how to make the most of any potential synergies that are likely to arise.

In recent years efforts have been taken by the oil spill response community to enhance stakeholder engagement in spill response science and the realities of what an actual oil spill response entails. Key to these efforts was the engagement between oil industry scientists and academic researchers, many of whom were funded by the Gulf of Mexico Research Initiative, during the period from 2010 to 2020. This collaboration helped foster a better understanding of the different experiences, expectations, and research interests across different research communities. An improvement of these interactions would provide active and consistent engagement between industry scientists and graduate student researchers to enhance the understanding of potential differences between academic and industrial research, e.g., differences in timing, scaling, funding, regulatory aspects, and the realities associated with actual emergency response operations. Additionally, these interactions provide the opportunity to discuss research plans, results, and the uncertainties within the context of an oil spill response.

Industry developed a number of decision-making tools that may not be well known within the academic research community, e.g., Spill Impact Mitigation Assessment (SIMA), Net Environmental Benefit Assessment (NEBA), Shoreline Cleanup Assessment Technique (SCAT), and fact sheets on Dispersant and In Situ Burn use.

By providing both sets of researchers with opportunities to hear about and discuss each other's experiences result in benefits arising from:

- An understanding of how an academic research program can provide insight relevant to both academic and industry researchers.

## Interspill 2022 Extended Abstract

### Category: Outreach and Engagement

- The realization that interactions between industry scientists and graduate researchers can provide significant opportunities to expose students to industry's capabilities, challenges, and realities.
- Industry scientists gaining firsthand insights into academia's knowledge of industry activities, e.g., publications, conferences, and global regulatory issues.

The proposed paper/presentation will focus on modes of interaction between graduate students and industry scientists, including:

- Industry visits to universities and student participation at workshops and conferences
  - Presentations
  - Group discussions
  - Mentorship and one-to-one discussions
  - Possible input to research programs
  - Thesis committee participation
- Graduate student interactions
  - Conferences/Workshop attendance
  - Regular Email /Video discussions
  - Participation as technical paper reviewers
  - Access to relevant technical resources (e.g., National Academies of Science, Engineering and Medicine publications, and resources from IPIECA, API, etc.)

Key goals include providing:

- The next generation of academic/industry researchers with professional contacts and an understanding of spill response-related science.
- Experienced researchers with a means of sharing their research with industry counterparts.

Specific examples of accomplishments to date include presentations to and discussions with graduate students and faculty about current and future research efforts around the world, especially related to the Macondo oil spill in the Gulf of Mexico in 2010. Over a two-year period, scientists from major oil companies and international spill response cooperatives visited academic institutions in the United Kingdom, Canada, and the United States. As a result of these initial interactions, several students attended international oil spill conferences and experienced an even broader exposure to the science of oil spill response. Additionally, industry scientists attended university-sponsored workshops and conferences to give presentations on a range of topics that served to impart the real-world aspect to the questions that must be addressed to make proper decisions during an actual emergency spill response. Ultimately, the goal is to have an informed, global scientific community that may be relied on to provide valuable technical support during the difficult decision-making process that can arise during the various stages of a spill response.