FEDERAL RESEARCH OPPORTUNITIES RELATING TO THE GULF COAST OIL SPILL
UPDATED: JULY 14, 2010

The following pages provide information on the ways in which the various federal research agencies are responding to the Deepwater Horizon Oil Spill in the Gulf of Mexico. This information will be updated as needed to reflect new activities and potential funding opportunities for the academic research community to assist in responding to the crisis in the Gulf.

This document will address the following federal agencies and departments:

- National Science Foundation
- National Oceanic and Atmospheric Administration
- U.S. Geological Survey
- Department of Health and Human Services (including the National Institutes of Health)
- Department of Energy
- Environmental Protection Agency

Information about BP funding is also included in this document. For ongoing information on the federal government’s unified response to the spill, you are encouraged to visit www.deepwaterhorizonresponse.com or http://www.restorethegulf.gov/.

NATIONAL SCIENCE FOUNDATION (NSF)

Near-term Funding: Rapid Response Research (RAPID) awards are the mechanism through which NSF is allocating its funding in response to the oil spill in the near-term (http://www.nsf.gov/pubs/policydocs/pappguide/nsf10_1/gpg_2.jsp#IID1). Potential projects (while connected to the emergent situation) should still be tied to a specific research question – not just monitoring/collecting information. Before submitting a proposal, an investigator should contact an NSF program officer working in the area of research in question. If the program officer thinks the idea is merit based and on budget (maximum $200,000), they will recommend faculty submit the proposal. NSF can turn around a response in one to two weeks with no outside approval needed.

In addition to a general notice on RAPID award availability, NSF released two “Dear Colleague” Letters encouraging oil-spill proposals for regular and RAPID awards in specific areas: the Social, Behavioral and Economic Sciences Directorate (SBE) and the Major Research Instrumentation (MRI) program:

- SBE will support research that investigates how the effects of the oil spill relate to the social, behavioral, and economic sciences. SBE is particularly interested in projects that build upon
existing data sets or that would identify high priority enhanced or new data sets to improve research in this field. While SBE has not specifically set aside funds for such research, the Directorate encourages investigators to submit proposals for the fall 2010 or spring 2011 competitions. Research proposals that cannot wait to begin until December 2010 can submit an application for a RAPID award.

- RAPID proposals can also be submitted through the MRI program. Since the purpose of the program is to expedite the acquisition or development of instrumentation to enable quick-response research on the effect of the Gulf oil spill, NSF will be looking for proposals that show the ability to get the instrumentation in place quickly and use it in such research (i.e. does the institution have an NSF RAPID grant for the research or some other funding/resources in place to support the research getting done and the instrument getting used in a timely fashion?). Up to $5 million is expected to be available to support MRI RAPID awards in FY 2010. Proposals are due July 30 and will not count against the caps on institutional submissions to the regular MRI competition.

More information about the SBE Dear Colleague letter can be found here. More information about the MRI Dear Colleague letter can be found here. A list of the RAPID awards made to date can be viewed here.

**Research Topics:** As can be seen from the list of the RAPID awards to date, NSF is currently getting significant interest from the oceanography community, including geochemistry (especially for research related to the water column) and geology (as the oil interacts with the coast/beach). Modeling has also been identified as an important focus topic (e.g. sediment transport, mixing of oil/gas plume with seawater). In addition, long-term impacts to sediment transport has been mentioned as an area of interest to explore through the fall 2010 solicitations.

**Regular (non-RAPID) Grants:** In addition to the RAPID award mechanisms, NSF expects to support research related to the oil spill through regular proposals submitted to NSF core research programs and solicitations in related areas. For example, the Dynamics of Coupled Natural and Human Systems and Water Sustainability and Climate programs are both grant mechanisms which are well suited to research questions tied to the impact of the oil spill. NSF has also suggested faculty look at the Macrosystems Biology solicitation which is growing to take some existing research up to the next scale.

**Possible Larger Funding Opportunities:** NSF is working with the White House on a possible near-term investment (unclear if it would require Congressional approval) for $50-60 million to study the longer-term effects of the oil spill. The announcement of this funding (if approved) is expected to be this summer.

**National Oceanic and Atmospheric Administration (NOAA)**

NOAA continues to play an active role in the response to the Gulf oil spill, utilizing its existing infrastructure and capabilities, including NOAA owned aircraft and six NOAA research vessels, as well as NOAA-supported research centers. Actions by NOAA continue to focus primarily on daily forecasts, including weather and tracking the path of the oil, and real-time natural resources

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damage assessment, including issuing fishery closures. Forecasting and modeling of the oil’s trajectory is of major concern to NOAA given the projected “busy” Atlantic hurricane season (with a possible 14 to 23 projected named storms), which threatens to bring the oil on-shore. NOAA’s fact sheet on “Hurricanes and the Oil Spill” can be viewed here: http://response.restoration.noaa.gov/book_shelf/2076_hurricanes_oil.pdf.

While NOAA is not currently issuing new competitive funding opportunities for extramural partners (with the exception of some supplements to existing NOAA-funded institutes like the Coastal Response Research Center (CRRC) at the University of New Hampshire), NOAA continues to develop new research and assessment tools. One new online tool is www.GeoPlatform.gov/gulfresponse, which is a web-based GIS platform providing near-real time information about the response effort, including the latest data from federal responders about the spill’s trajectory and how it will impact fishery closures and other resources. The website was developed by NOAA and CRRC at the University of New Hampshire. In addition, NOAA continues to post a series of fact sheets, maps, and other tools on its website: http://response.restoration.noaa.gov/dwh.php?entry_id=812.

If you have existing relationships with a NOAA center in your region, you are encouraged to reach out to them about ways your institution can be helpful.

All of NOAA is engaged in responding to the current environmental crisis in the Gulf. Below is a breakdown of the various responsibilities within the agency:

**Office of Response and Restoration (OR&R)** – Most of the work falls within OR&R, which is a trans-NOAA office responsible for providing scientific information in response to major environmental crises, such as oil spills. In the current case, OR&R is responsible for providing scientific information to the Coast Guard, who has primary immediate response jurisdiction over the spill. Within OR&R there are two divisions:

- Emergency Response Divisions (ERD), which is responsible for predicting where the oil is going and its effects, overflight observations and mapping, recommending cleanup methods, and managing data and information.
- Assessment and Restoration Division, which is responsible for planning for assessment of injuries to natural resources, coordinating with stakeholders like state and federal trustees, and implementing sampling plans.

**National Weather Services (NWS)** – NWS is responsible for providing incident forecasts, including marine and aviation forecasts.

**National Environmental Satellite, Data, and Information Services (NESDIS)** – NESDIS is providing experimental imagery data to assist in forecasting the spill’s trajectory.

**National Marine Fisheries Service (NMFS)** – NMFS is responsible for determining fishery closures and other issues affecting marine mammals, sea turtles, and other fishery resources.
**National Ocean Services (NOS)** – NOS is providing oceanographic modeling support (through the use of NOAA’s fleet), nautical charts, aerial imagery, as well as support for the National Estuarine Research Reserves and coastal managers.

**U.S. Geological Survey (USGS)**

USGS continues to assist in the oil spill response, but most efforts are from within the Survey. Thus far USGS has not announced extramural funding related to the oil spill.

USGS remains part of a larger DOI effort and its scientists will be:
- Collecting satellite imagery to assess the impact on wetlands and coasts.
- Developing maps showing NOAA projections of spill trajectory with respect to DOI Lands.
- Collecting samples to ascertain source and levels of toxicity to soils and water systems.
- Conducting tests to determine cause of mortality of wildlife.
- Developing models that depict how local tidal and current conditions will interact with seafloor bathymetry to carry oil over barrier islands.
- Providing decision support tools to help DOI land managers mitigate the effects of the oil spill and assist in restoration efforts.

Institutions should continue to work with local USGS contacts ([http://www.usgs.gov/state/](http://www.usgs.gov/state/): select state to see USGS activities and contacts) to discuss how they might work with the Survey in response to the oil spill.

For additional information on USGS’s response to the Gulf oil spill response effort, please see: [http://www.usgs.gov/deepwater_horizon/](http://www.usgs.gov/deepwater_horizon/).

**DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS)**

Within HHS, the Assistant Secretary of Bioterrorism Preparedness and Emergency Response is overseeing all HHS responses and activities related to the oil spill.

**HHS contact:** Stacy Elmer, Special Assistant to the Assistant Secretary of Bioterrorism Preparedness and Emergency Response, email: stacy.elmer@hhs.gov.

Below is a summary of major activities within HHS agencies related to the spill. At this time, the National Institutes of Health (NIH) is the only agency with plans to issue grant announcements specifically geared toward spill research and response.

**Centers for Disease Control and Prevention (CDC)**

CDC recommends using existing mechanisms for surveillance of acute health conditions. However, if existing mechanisms do not exist within an affected gulf coast state, targeted drop-in health care surveillance is recommended. CDC has developed a surveillance tool to be used for drop-in surveillance to monitor health complaints. Complaints captured by the tool include upper

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respiratory conditions; cardiovascular conditions; eye conditions; and stomach complaints such as nausea.

According to the White House, the CDC is conducting surveillance in Louisiana, Mississippi, Texas, Alabama, and Florida to detect any potential health effects related to the oil spill using established national surveillance systems, including the National Poison Data System (NPDS) and BioSense to track respiratory, vascular, and dermal issues. CDC is also coordinating and clarifying procedures and case definitions for the Food and Drug Administration and states to use with surveillance systems in detecting illnesses associated with consumption of oil contaminated products.

**National Institute for Occupational Safety and Health (NIOSH)**
Currently NIOSH is protecting workers and volunteers responding to the oil spill in the Gulf of Mexico with the following efforts:

- Providing information to BP, the Occupational Safety and Health Administration (OSHA), the U.S. Coast Guard, and other federal and state partners about protecting workers and volunteers from potential safety and health hazards.
- Assisting OSHA and the National Institute of Environmental Health Sciences (NIEHS) with information about tools for training workers including health hazard risk assessment and personal protective equipment selection.
- Conducting a voluntary survey of workers to obtain a record of those who have participated and a mechanism to contact them about possible spill-related symptoms of illness or injury, as needed.

**National Institutes of Health (NIH)**
The National Institute of Environmental Health Sciences (NIEHS) has two open program announcements that can support research related to oil spill effects and clean up. There are time-sensitive R21 grants for $275,000 over two years and R03 grants for $100,000 over two years. Additional opportunities may be announced as the disaster continues.

At a June 16 House Energy and Commerce Subcommittee on Health hearing on issues related to the oil spill, Dr. Aubrey Miller, NIEHS Supervisor for Public Health Science, testified on the state of the science. He confirmed that the ongoing time-sensitive grants will be used to quickly fund research on the public health impact of the oil spill on affected populations in the region.

Topics to be considered for funding are:
- Environmental monitoring and characterization related to the spill;
- Toxicity testing of complex mixtures using high-throughput technologies and innovative statistical approaches;
- Exposure assessments for individuals and populations;
- Research on short-term health effects, including respiratory effects, irritants and changes in immune function;
- Research on long-term health effects, including risk of cancer, adverse pregnancy outcomes and neurodevelopment effects in children; and
- Risk assessment research, including understanding the unique risks of vulnerable populations, such as children, pregnant women, the elderly and people with chronic health issues.

In his written testimony, Dr. Miller noted that NIEHS helped form and is co-leading the HHS Interagency Oil Spill Health Monitoring and Research Workgroup, which includes the HHS Assistant Secretary for Preparedness and Response, NIOSH, the National Center for Environmental Health, the Agency for Toxic Substances and Disease Registry and the Substance Abuse and Mental Health Services Administration (SAMHSA). Within the workgroup, NIEHS is focused on identifying all the relevant human health and toxicological information to drive research efforts; developing new tools, such as health surveys and medical tests, to gather essential information about adverse health effects; and engaging additional stakeholders to produce the best process, products, and outcomes.

**NIEHS Contacts:** Gwen Collman, Ph.D., interim director, and Patrick Mastin, Ph.D., acting deputy director, NIEHS Division of Extramural Research and Training. Emails: collman@niehs.nih.gov and mastin@niehs.nih.gov.

**DEPARTMENT OF ENERGY (DOE)**

The Department of Energy (DOE) and Secretary of Energy Steve Chu continue to be on the scene and actively involved in assisting BP with the response to the Deepwater Horizon Oil Spill. There have been no funding opportunities related to the oil spill announced by the Department.

Secretary Chu has made several trips to the BP command center and is in daily contact with the DOE team on site and with BP executives. More than 200 scientists, engineers, and other experts from DOE national laboratories are actively engaged in the response effort.

Secretary Chu has also assembled a team of top scientific experts to join discussions with BP about possible solutions. These experts include the Director of Sandia National Laboratories, an IBM Fellow Emeritus, and academics from University of California Berkeley, Washington University, and Massachusetts Institute of Technology.

Secretary Chu and the DOE team provided technical assistance to BP for the “top kill” attempts in late May, and provided assistance for the “top hat” exercise in early June.

To ensure that the public has complete information on the oil spill response efforts, on June 8, DOE launched a website -- [http://www.energy.gov/open/oilspilldata.htm](http://www.energy.gov/open/oilspilldata.htm) -- to post information on schematics, pressure tests, diagnostic results, and other data about the malfunctioning blowout preventer. This technical information is available on line to experts making recommendations on the response effort as well as to the public.

Significant effort has been put into improving the assessment of the impact of the spill, including release on June 15 of an increased estimate of how much oil is leaking from the well – an
estimate of between 35,000 to 60,000 barrels of oil per day. That same day, Secretary Chu and Secretary of the Interior Ken Salazar met with oil industry executives to review BP’s containment plan and identify additional resources that could be deployed to the cleanup effort.

Additional information on the Department’s activities in support of the response effort can be found at: http://www.energy.gov/open/oil_spill_updates.htm.

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA is responsible for providing science expertise for the protection of public health and the environment. It is important to note that EPA has primary jurisdiction over inland environmental emergencies, while the Coast Guard takes the lead when emergencies occur in coastal or deep water areas. Although EPA is ramping up its efforts to assess the environmental impacts of the spill, they are not responsible for the federal response to the underwater leak itself.

EPA’s focus continues to be on daily sampling and monitoring of air, water, sediment, and underwater use of dispersants. The issue of dispersants is a primary focus for the agency and they are partnering with NOAA centers and labs to assess the potential impact of these chemicals to ocean and environmental health (see http://www.epa.gov/bpspill/dispersants.html).

EPA is also busy reviewing the technology suggestions that have been submitted by the public through its Web portal.

Contact information for the Regional Emergency Management Program for your state can be found here: http://www.epa.gov/swercepp/web/content/regional.htm.

BP FUNDING

In May BP announced its intention to pledge up to $500 million toward an open research program studying the impact of the Deepwater Horizon oil spill. However, the actual mechanisms for distributing the funding are not yet clear. Gulf coast governors have indicated that they want to be involved in that process. Thus far, the only awards announced through this program have been three awards totaling $25 million to three Gulf coast institutions, see: http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7062936.

Initially the program was to address key questions that reflect discussions with the U.S. government and academic scientists in Washington DC the week of May 17, 2010.

Including:

- Where are the oil, the dispersed oil, and the dispersant going under the action of ocean currents?
- How do oil, the dispersed oil and the dispersant behave on the seabed, in the water column, on the surface, and on the shoreline?
What are the impacts of the oil, the dispersed oil, and the dispersant on the biota of the seabed, the water column, the surface, and the shoreline?

How do accidental releases of oil compare to natural seepage from the seabed?

What is the impact of dispersant on the oil? Does it help or hinder biodegradation?

How will the oil, the dispersed oil, and the dispersant interact with tropical storms, and will this interaction impact the seabed, the water column and the shoreline?

What can be done to improve technology:
  - To detect oil, dispersed oil, and dispersant on the seabed, in the water column, and on the surface?
  - For remediating the impact of oil accidently released to the ocean?