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THE GULF RESEARCH PROGRAM'S INITIATIVE ON LONG-TERM MONITORING IN THE GULF OF MEXICO

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The Gulf Research Program

Who: Division of the NASEM (2013)

Why: Courts allocated some *Deepwater Horizon* penalty monies to "community benefit"

What: $500 million to support grants, fellowships, and other activities

When: 30-year program (2013-2043)

How: Competitive funding opportunities; Guided by the GRP's "Strategic Vision" (2014) and 20+ member Advisory Board.




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Defining Features of the GRP

- Directed to operate in three areas:
  - Oil system safety
  - Human health
  - Environmental resources

- Directed to work via three mechanisms:
  - Research & development
  - Education & training
  - Environmental monitoring

- Future-oriented, rather than documenting effects of DWH
- Perspective extends beyond the Gulf of Mexico
- 30-year duration

Mission and Program Initiatives

Mission: Over its 30-year duration, the Gulf Research Program works to enhance oil system safety and the protection of human health and the environment in the Gulf of Mexico and other U.S. outer continental shelf areas by seeking to improve understanding of the region's interconnecting human, environmental, and energy systems and fostering application of these insights to benefit Gulf communities, ecosystems, and the Nation

Reducing risk in offshore oil and gas; improve underlying science

Enhancing the health and resilience of coastal communities

Data & Observations for improved management of coastal resources

Building capacity to address cross-boundary challenges

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Grants

2016 Exploratory Grants - $3 million, 9 grants

- TOPIC 1: Scenario planning to explore risks in offshore oil and gas operations
- TOPIC 2: Helping coastal communities plan and adapt to environmental change in regions with offshore oil and gas operations

2016 Synthesis Grants - $4.4 million, 9 grants

- TOPIC: Scientific synthesis connecting environmental, social, and/or health data

2016 Capacity Building Grants – $3.2 million, 12 projects

- TOPIC: Cross-boundary networks to address regional environmental challenges in U.S. OCS regions

2017 Research-Practice Grants – $10.8 million, 4

- TOPIC: Enhancing coastal community resilience and well-being in the Gulf of Mexico region

Grants Continued

2017 Research & Development Grants - $10 million, 1-3 years

- TOPIC: Preventing the Next Spill: Understanding Systemic Risk in the Offshore Oil and Gas Environment

2017 Research-Practice Grants - $5 million, 1-3 years

- TOPIC 1: Integration of Monitoring and Evaluation into Environmental Restoration Projects to Improve Outcomes in the Gulf of Mexico
  TOPIC 2: Improving Risk-Based Evaluations to Support a Public Health Response to the Next Oil Spill

Fellowships

Early-Career Research Fellowships

- Facilitate academic, intellectual, and professional development of individuals who have outstanding scholarship promise
- Recognize early-career researchers for past performance and future potential for substantial contributions to advancing scientific understanding
- Provide funding and mentorship at critical pre-tenure phase of fellows' academic careers

Science Policy Fellowships

- Provides valuable experience at science-policy interface through one-year placement on staff of state environmental, natural resources, oil and gas, or public health agency; or regional offices of relevant federal agencies.
- Fellows participate in and contribute to state or federal policymaking process. Duties vary by placement but can include analysis and synthesis of scientific information to support policy development, writing policy memos, and drafting legislation.

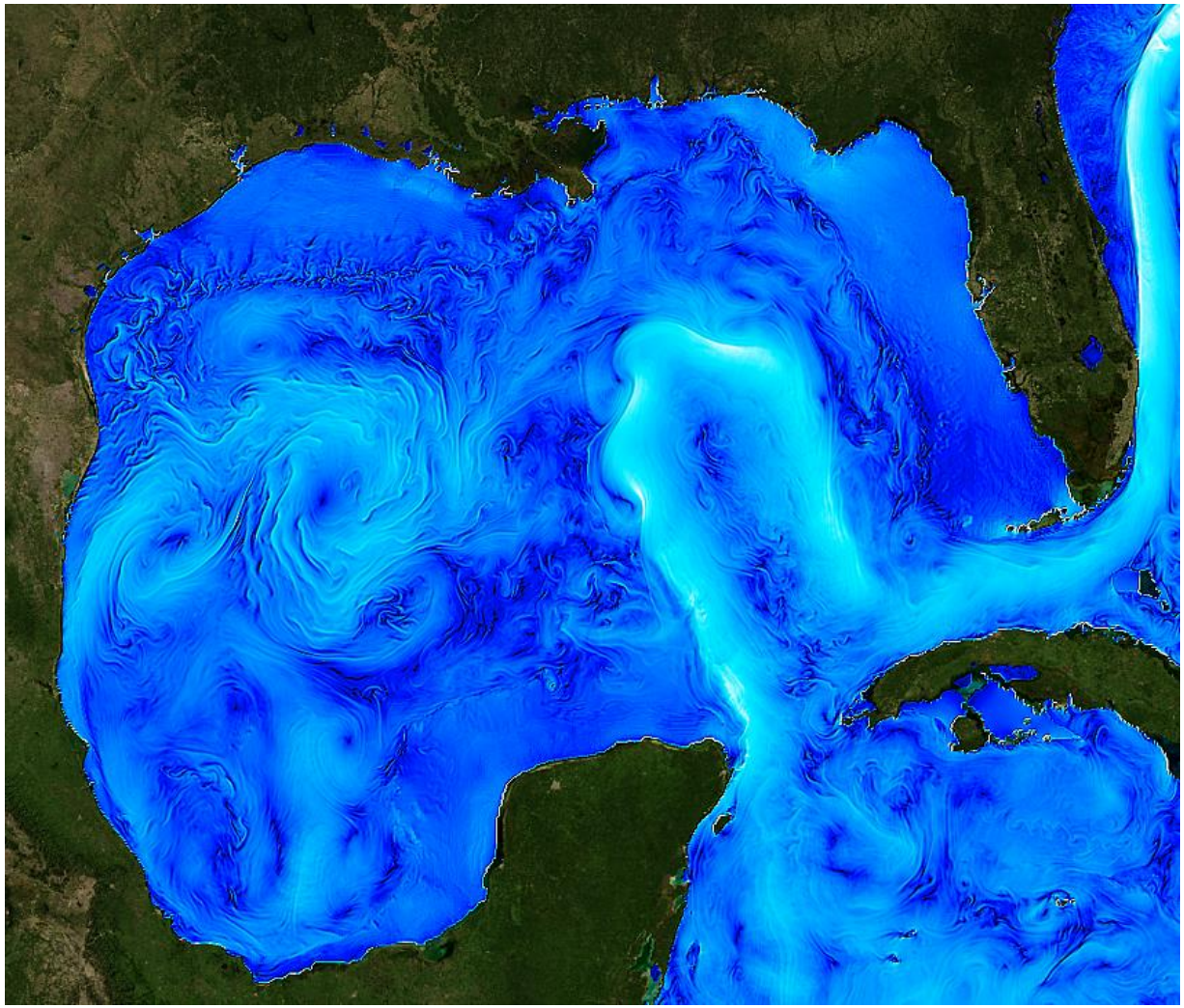
Expert Reports/Workshops in Process

- Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico (OSB, available at www.nationalacademies.org/gulf/resources).
- Committee on Advancing Understanding of Gulf of Mexico Loop Current Dynamics (GRP)
- Evaluation of the Use of Chemical Dispersants in Oil Spill Response (OSB)
- Committee on Measuring Community Resilience (PGA)
- Committee on Long-term Coastal Zone Dynamics: Interactions and Feedbacks between Natural and Human Processes and their Implications for the U.S. Coastline (DELS)
- A Workshop on Research Needs: Preparing for a Rapid Response to Major Offshore Oil and Gas Spills (HMD)
- The Human Factors of Process Safety and Worker Empowerment in the Offshore Oil Industry: A Workshop (BOHSI)

Projects with Enduring and Lasting Impact

1. Engage **multiple generations of scientists**, through fellowships grants, and other career building activities, in research and policy making.
2. Catalyze long-term monitoring and research that will advance scientific understanding of **deep water ecosystems and processes** in the Gulf of Mexico
3. Support long-term monitoring and research to improve the science and practice **environmental restoration and restoration monitoring**
4. Participate and provide leadership in an **oil-system safety** network of stakeholders
5. Strengthen the science and practice of **coastal community resilience** in regions along the US outer continental shelf through research and capacity building
6. Encourage and develop capacity for **scientific synthesis** (e.g., integration of data and methods; application of scientific research) to improve the safety of energy production and protect human well-being and the environment

Loop Current Campaign



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LC Statement of Task

- Summarize the existing scientific understanding of the physical forces that shape and energize the Gulf of Mexico Loop Current and associated eddies as well as the current state of ocean current modeling specific to the Gulf of Mexico.
- Determine what critical information is needed to better understand the variability in strength, location, depth, and size of the Loop Current (i.e., observational, modeling and research priorities). Specify the measurements needed to improve analytical models and forecasts of the Loop Current System that are useful for facilitating safe oil and gas operations and effective mitigation and response activities, as well as managing environmental resources and protecting Gulf communities.

LC SOT Continued…

- Assess the capacity of current technologies to meet the overarching goal of characterizing Loop Current dynamics and suggest opportunities for new approaches, improved technologies, or transfer of technologies from other realms.
- Describe critical components of a field campaign necessary to fill gaps identified by the committee in observations and observational technology, data assimilation, physics and analyses that are needed to improve understanding of Loop Current variability and improve modeling and forecasting skill.
- As possible, include estimated costs of field campaign components, and identify collaboration needs and opportunities among public, private, academic and international sectors.

Longitudinal Community Data Project

- Multiple stressors affecting Gulf Coast communities
- Longitudinal data (individual & community level) provides baseline information and insights into
  - Impacts of multiple stressor environment
  - Successful adaptation strategies
  - Opportunities to enhance resilience
- Goal: Inform research, policies, and decision making that improve resilience and well-being.

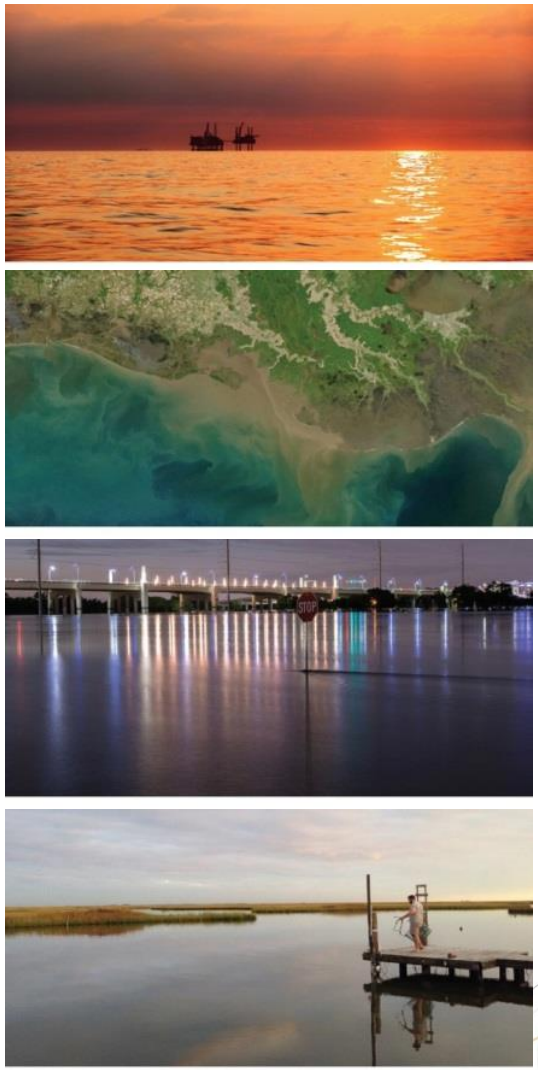
Rationale for GRP

- GRP's interest → Advancing science that serves community needs
- GRP's 30 y duration → Long-term commitment and coordination
- Identified need → Baseline information is critical, but rarely available
- High Impact → Challenging, but if done well provides valuable information and lasting resource

Next Steps

- Fall 2017 – Project scoping, information gathering meetings

- Spring 2018 (tentative) - Exploratory workshop with researchers and community members and leaders



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Summary

1 - Looking to invest (soon) in long term monitoring to better understand Gulf of Mexico circulation.

2 – Longitudinal data to understand impacts of multiple stressors on coastal communities.

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Contact information:

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