

DEEP-C: DEEP SEA TO COAST CONNECTIVITY IN THE EASTERN GULF OF MEXICO

Consortium Director – Eric Chassignet

ADMINISTRATION

1) Contract Activity

- 4/13 (31%) of the Consortium's subcontracts have been executed.
- Requested and received approval to enter fixed-price Sub-Agreement with SAIC.
- Requested and received approval for NRL version of Conflict of Interest forms.

2) Risks and Impacts

Negotiations and subsequent delays in the execution of the prime agreement meant that sub agreements were also delayed. *Corrective Actions:* Every effort is being made to expedite the remaining nine subcontracts so that work can begin. However, these delays will likely result in underspent budgets at the end of year 1, and a need for a time extension to allow for a full three-year period for completion of scheduled deliverables.

RESEARCH

1) General progress update

a. Accomplishments

Task 1: Geomorphology and Habitat Classification

- Processed and analyzed newly collected bathymetric data from NOAA Ocean Exploration Program and applied results to revision of sampling site array and integration with the C-IMAGE project.

Task 2: Physical Transport of Particulate and Dissolved Material from the Deep Ocean to the Coast

- Data analysis, modeling, and the completion of May 2012 cruise on the RV Pelican from Cocodrie on which the team deployed Rafos floats, current meter arrays, and occupied a CTD section across the DeSoto Canyon.

Task 3: Geochemistry, hydrocarbon chemistry, and isotope tracing

- Trained and recruited personnel, undertook numerous at sea and coastal field collection sorties, completed analysis on a pre-spill sample set for Hg and stable isotopes from the Big Bend area, and conducted a series of lab experiments investigating intrusion and migration of PSHs contained in dispersed oil with and without Corexit addition on saturated beach sands.

Task 4: The Ecological Pathways

- Developed cruise objectives and initiated independent cruises that tested and deployed gear, collected hydrographic and sediment data in support of physical oceanographers and chemists from Deep-C and C-Image consortia, crossed benthic depth strata (from the coast to 3,000 m, including shelf, slope, and deep-sea benthos), water column features (pelagic, mid-water, and deep sea waters), and trophic levels,

(from microbes to phytoplankton, microzooplankton, and demersal fishes) from the Macondo well head, through De Soto Canyon, and across the NW Florida Panhandle Bight Shelf.

Task 5: The Earth System Model

- Laid out the foundation for the Earth System Model Prediction System.

b. Obstacles

- Research Vessels. One of the elements missing from the body of work is sampling mesopelagic fish fauna. This is critical to our understanding of trophic interactions and benthic pelagic coupling relative to the oil spill, especially involving the deep scattering layer. What is needed is a ship with the capabilities to conduct research in this zone using midwater trawls with appropriate mesh size for their capture.

c. Collaboration

- A collaborative effort was started with the CARTHE consortium members on Uncertainty Quantification (UQ) aspects (A. Srinivasan, M. Iskandarani). The collaborators will meet again during the LAPCOD meeting in June 2012.
- Collaboration with the Ocean Exploration RV Okeanus Explorer expedition in the Gulf. The data set of seafloor bathymetry being collected will be very useful to Deep-C researchers.
- Participation in a cruise on the RV Weatherbird II conducted 15-24 February 2012 (FIO cruise, Chief Scientist: K. Daly-Mote; FSU participants: Brian Wells, Chris Hagen). Work included study of benthic habitats and natural hydrocarbon seeps: exploration and limited multi-core sampling. The cruise track followed the east side of DeSoto Canyon and included also some stations on the west side. All sediments were frozen and brought back to FSU for analysis; subsamples were sent to the Kostka Lab at Georgia Tech.
- Collaboration between FSU, Eckerd College and USF to conduct C-14 on cores collected immediately after the spill to test the dirty blizzard hypothesis. Sample selection completed and analysis initiated.

2) Please enter information for the following categories on the attached spreadsheet.

- a. Cruises & Expeditions
- b. Workshops and meetings organized (*Participant lists are requested*)
- c. Publications (*Copies are requested*)
- d. Presentations and Posters (*Copies or photos are requested*)
- e. Quotes/Interviews/Features/Articles (*Copies are requested*)
- f. Data
- g. Consortium participants
- h. Student and post-doctoral participants
- i. Scientific partnerships and collaborators
- j. Outreach products and activities
- k. Images (*Copies are requested*)
- l. Leveraged (non-GoMRI) funding contributing to Consortium activities



Research
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