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Academia Session

Commenter's Affiliation	Comment
Academia	Will existing restoration projects be evaluated for their utility?
Academia	Concern about implementing observing systems - are we addressing this? Critical tools include satellites and it takes a lot of time to plan for these. Need integrated tool to help everything in the Gulf = would be satellites. Add modeling to picture.
Academia	Is there a formal connection between the Task Force and the various groups developing tools?
Academia	Need to expend effort to translating science to the public. Critical link between scientists and continuation of efforts for next event is needed. Answer has to do with risk assessment and inherent is the translation of science. Have we thought about a team to be ready for the next event. Right now Louisiana University Marine Consortium (LUMCON) is holding a workshop to address response issue.
First Academic presentation part 1	Problem –can’t restore what we do not understand to begin with consequently primacy should not be given to restoration. Must at least give parity to understanding. Need to make connections across space time and trophic levels. These define ecosystems and the processes that provide controls on all ocean state variables. Ecology is not biology but a comprehensive multidisciplinary subject that requires understanding and a predictive capability on how large scale natural systems work talks about the connections between estuary and coastal ocean or continental shelf. Let’s use coastal ocean instead of offshore. Also connections between the Caribbean and Gulf.



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First Academic presentation part 2	<p>Work after Deep Water Horizon (DWH) was possible because they had observing capabilities in place. Wants to emphasize need for in place programs for modeling and data collection (monitoring). Path forward-Comprehensive multidisciplinary, approach required to understand the coastal ocean system. No single sensor or model is adequate. Need ensembles. Necessitates true partnership between Academies and other sectors. Starting point: Existing observing and modeling resources must be sustained and enhanced; Coastal Ocean Observing System (COOS) concept provides a framework. Emphasis ought to be on observing and modeling versus data management; COOS should evolve through r&d and local expertise. Operational monitoring cannot advance defensibly unless the scientific underpinnings are there; Corollary is that scientists must be involved in the decision making.</p>
First Academia-presentation part 3	<p>Restoration activities in Florida. General types of projects: Cultural resource protection; Ecological protection; Exotic removal; Hydrologic restoration/enhancement; Upland restoration/enhancement; Wetland restoration/enhancement; Beach renourishment/erosion control; submerged aquatic vegetation/oyster/coral restoration; Fisheries stock enhancement. Beach renourishment – Florida State University site , gives performance metrics so can judge success. Well done database. Unique governance approaches-Tampa Bay regional planning council: Serves as a broad based forum for open discussion of estuary issues, and as a voice for protection, restoration and wise use of the bay by the entire region. Created Tampa Bay nitrogen management consortium-Successful public private partnership to address nitrogen loading. Began as a voluntary program to assess nitrogen allocations to the 189 permitted sources throughout the watershed. Has reduced nitrogen by 50 percent.</p>



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First Academia-presentation part 4	Final points. Restoration efforts are locally driven and effort is uneven within the state. No overarching umbrella to coordinate statewide. Much is event driven. Most is small scale and limited to a few habitats. Need to push for innovative governance structure emphasizing public/private partnerships. This will allow the conversation to happen.
Academia	Cost is typically a factor in looking at source/root issues.
Academia	All this coastal/nearshore work, but what about deeper water/offshore areas? Definite gap in info.
Academia	Merits to both looking at symptoms and/or root issues. Indian River Lagoon example – originally was to decrease nutrient loading and learned it was really a muck issue.
Second Academic presentation part 1	Northeast part of Gulf of Mexico poorly studied part of coast biologically and physically. Deep Water Horizon (DWH) sampling twice a week during the event. Concern about redundant efforts. Coquina tissue (live in surf zone) are sensitive indicator of oil. Done with Florida Institute of Oceanography funding transects of west Florida panhandle bight. Seeing anomalous pigmentation in fish, would healing is becoming an issue, parasite loads are higher, livers are abnormal (distended and packed with bile) probably because they are processing hydrocarbon contaminants.



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<p>Second Academic presentation part 2</p>	<p>Long term impacts-polychlorinated biphenyls (PCBs) a problem in Gulf of Mexico, except in Escambia. What about Louisiana? We don't track and so we don't know. Overfishing: red snapper are overfished and now small. We don't know much about recruitment or production issues. What is the interaction between DeSoto canyon deep water that comes out and spreads across the shelf? Need full blown characterization of the Northern Gulf/DeSoto canyon. We are looking for the biological issues now; the chemical effects are pretty much gone. May be looking at reduced resilience that might come with degradation. Difficult to put numbers and dollars on things. Mentioned degraded reef system in the Florida keys. Can't figure out numbers to characterize it, we also may not be able to put numbers on effect from DWH. Need "local" peer review – important to help local expertise disseminate information and address state and local issues. The more general the rfp, the more novel and responsive are proposals. Need longer term funding, suggest endowment to keep things going.</p>
<p>Third Academic presentation part 1</p>	<p>Bottom line: restoration is more than just DWH but long term degradation due to habitat loss, nutrient enrichment, overfishing, development and climate change. Science can help planners set achievable goals for restoration, monitor progress in recovery efforts towards long term goals, help prioritize efforts asked on where the greatest potential lies, provide ecosystem level understanding of linkages among individual restoration and totality of services improved through restoration. Monitoring need to be incorporate at beginning at multiple scales including control areas. Goals should incorporate sea level rise and storm surge on resiliency of Gulf of Mexico Large Marine Ecosystem (LME). Compensatory projects need to be considered relative to ecological and socio economic impacts.</p>

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Third Academic presentation part 2	Societal goals need to be incorporated into planning, prioritization and monitoring through a credible and adaptive approach. Push for mangrove restoration, a good nursery, etc in Florida may mitigate some Louisiana issues. Fisheries point of view, larvae were in same areas where the dwh spill was in the gulf and so will become a driver. Need to sort out restoration effects on life histories if we are going to use fish production as a metric. Restoration questions: What strategies should be employed to divert sediment into Louisiana marshes and how can they be maintained? What are potential impacts of wetlands, bi reconstruction on habitats, lower Mississippi River productivity, storm surge protection, and sea level rise? What metrics do we need-size of dead zone, net change in wetlands size and quality, population size and yields of fishery, recovery rates, value of ecosystem services, high quality baselines for hydrocarbons, dissolved oxygen, etc, improvements in skill to forecast movement and dispersion of hydrocarbons?
Third Academic presentation part 3	Recommendation-Form a science advisory committee early to help in writing the strategic plan and as a sounding board. Need to work on collaboration mechanisms among agencies. Harmonize science activities under Natural Resource Damage Assessment (NRDA), BP, agencies including Natoinal Science Foundation (NSF) and restoration related activities. Should have a common strategy regarding use of penalty funding.
Academia	Done first? Stop channelization of the Louisiana wetlands, stop nutrients from going into Gulf.
Academia	Communicate and educate public so they trust what the government is doing.
Academia	How can we get a clean slate and know what we have? We need factually put out the issues. Are we ready for Shell's permits for deep water drilling. We don't have an observing system and the economics (with Congress) probably won't fund it.



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Academia	Sustain and build upon a multi-disciplinary observing/monitoring system. Invest in observing systems and tie this into the broader connectivity issue
Academia	Make sure we define restoration. What are we restoring to?
Academia	Wes Tunnel's white paper – how soon the gulf will recover. Should have talked about hypotheses about what will be happening. They could be tested.
Academia	Worried about too much restoration by truck on land as opposed to the ocean. Deep ocean, coastal ocean and estuaries.
Academia	Disagree, the Gulf of Mexico is large and so is the watershed so can't limit it at the estuaries.
Academia	Three priorities-This is not just a bunch of people in Florida and Louisiana, whatever we do improves/impacts the middle of the country. Need a governance structure. Monitoring is third priority, are underinvested in observing system, need it to make connectivity.
Academia	Experience with S. Florida-Ecosystem conceptual models to use a straw man including human dimensions, can predict potential outcomes that are testable. Provides a structure, develop indicators, these report cards tied to science provide info on whether we are going in the right direction.
Academia	Need a governance system that is de-politicized to get any work done.
Academia	Again, concept of endowment to prepare us for the next spill.
Academia	Must be projects for restoration immediately available that are not implemented because they are not funded, e.g., land purchase for conservation.
Academia	Conceptual models are good for screening purposes.



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Academia	Missing with DWH is forensic study, we don't have the tools, no real oil spill models.
Academia	Marine protected areas can be used as a restoration tool.
Academia	Also need to understand lethal and sub-lethal effects in the deep sea.
Academia	Plea to make this money sustainable and not disappear in a vortex in Washington; would like to see it end up on the Gulf.
Academia	Question about the Gulf of Mexico alliance-Most useful thing were the nutrient round robins to standardize techniques and data. Microbial source tracking has been really useful.
Academia	Need performance standards that are easily recognizable by the public, i.e., dead zone, blue-fin tuna.
Academia	Ecosystem-based management-includes the watershed. Good that the Task Force is looking at this.
Academia	Restore to resilience? Hard to define what resilient means. One species may flourish (e.g., bacteria), which others are harmed (e.g., phytoplankton).
Academia	Tremendouse knowledge/science base in Florida.