2019

Gulf of Mexico
Oil Spill & Ecosystem
Science Conference

February 4-7, New Orleans, LA

Contents

Welcome to the Seventh Annual

Gulf of Mexico Oil Spill & Ecosystem Science Conference

February 4-7, 2019

Hyatt Regency New Orleans, 601 Loyola Avenue, New Orleans, LA

In its seventh year, the Gulf of Mexico Oil Spill and Ecosystem Science (GoMOSES) Conference seeks to connect science and application to policy, practice, and management. As usual, the conference is a time to come together and discuss what has been learned. Unlike other years, more weight will be placed on what questions either remain unanswered or have arisen from nearly ten years of research. This comes in preparation for the conclusion of the Gulf of Mexico Research Initiative and a shift in focus from oil spill response to restoration and recovery. In other words, we are preparing for the next phase in Gulf research. Anchoring these changes is an interdisciplinary approach to thinking about science, ecosystems, and communities, which was championed by Chris Elfring, who represented the Gulf Research Program on the conference Executive Committee and passed away in 2018.

The 2019 program, *Minding the Gaps: Research Priorities for Response, Restoration, and Resilience*, aims to forward these goals through four days of meetings, presentations, and discussion. Several workshops will focus on response planning, ecosystem monitoring and restoration, science communications, and data management. On February 5, the program opens with a discussion of what support will be needed as the Gulf science and management community begins the transition from an emphasis on oil spill response to recovery and restoration. Keynote speakers Robert Spies and Buck Sutter will set the stage with lessons learned from the Exxon Valdez spill and an assessment of the current state of Gulf science versus pre-Deepwater Horizon. Twenty-three scientific sessions will hone in on what we know and identify what questions remain. In closing, we will take a moment to remember Wes Tunnell and his many contributions to Gulf science, and honor Chris D'Elia with the inaugural Wes Tunnell Lifetime Recognition for Gulf Science and Conservation.

This is the last year of GoMOSES in New Orleans, Louisiana – for now. A heartfelt thank you to New Orleans for hosting; we hope you have a chance to enjoy the city's history and traditions and visit your favorite places once again. Finally, thank you to the sponsors, the Executive Committee, and the conference staff for your time and dedication – you have again made this event a success.

Thank you for your participation. We look forward to a fantastic week and hope to see you again in Tampa, Florida, for the 2020 conference!

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In Memory Of

Chris Elfring

Chris Elfring passed away on June 7, 2018, at the age of 62, as a result of brain cancer. Chris's career was defined by a long-standing interest in the policy dimensions of science and communicating science to non-scientists. This began with her time as a AAAS Science Fellow in 1979, continued with her work as a park ranger at Acadia National Park in the early 1980s, and eventually led to a three-decade career at the National Academies of Sciences, Engineering, and Medicine, where she rose to become a highly respected and valued member of its senior leadership team, most recently serving as the founding Executive Director of the Gulf Research Program.

Chris left a lasting impact on the Academies. In addition to leading the launch of the Gulf Research Program, Chris previously served as the director of both the Board on Atmospheric Sciences and Climate and the Polar Research Board. She provided strategic leadership to the suite of activities known as "America's Climate Choices." She was a leader in planning the International Polar Year 2007-2008, and has a geographic feature in Antarctica, Elfring Peak, named in honor of her polar science work. In 2012, the American Meteorological Society (AMS) awarded her the Cleveland Abbe Award for Distinguished Service to the Atmospheric Sciences and she was elected an AMS Fellow.

Chris's deep love of the environment and the outdoors touched all who knew her -- at work, in her community, and her family -- to their great and enduring benefit.

Stay Connected!

In order to keep paper usage at a minimum, the GoMOSES Conference is offering most of its content digitally. All the information you need can be found on the conference webpage: *http://gulfofmexicoconference.org/*. In addition, there are several other ways to stay connected:

1) **Download the official conference app to:**

   • Get immediate conference updates and schedule changes;

   • Browse the conference schedule and abstracts;

   • Create your own schedule;

   • Use the Maps feature to locate your talks and sessions;

   • Make notes and comments on scientific sessions you attend;

   • Plus more!

The technical support for the conference app has changed, so even if you have a previous year's app on your phone or tablet, you will need to download the 2019 app. Download instructions are the same for both Apple and Android phones.

• Search for "Crowd Compass Attendee Hub" in your phone's app store, download, and install

• Within the Attendee Hub app, search for "Gulf"

• Download the 2019 GoMOSES Conference

• Log in by following the directions

2) **Visit our online searchable abstracts database at:**
   https://event.crowdcompass.com/gomoses2019

3) **Social Networking:** *www.facebook.com/ gulfscienceconference*   *@gulfconference #GoMOSES*

Check-in and On-site Registration:

Check-in and on-site registration will take place in the Celestin Foyer (third floor). The registration desk will be open at the following times:

Sunday, February 3: 3:00p – 5:00p
Monday, February 4: 8:30a – 5:30p
Tuesday, February 5: 7:30a – 5:30p
Wednesday, February 6: 7:30a – 5:30p
Thursday, February 7: 7:30a – 12:00p

Meals:

The following meals are provided as part of your registration fees for conference attendees.

Continental Breakfast in Storyville Hall:

Tuesday, February 5: starting at 7:30a
Wednesday, February 6: starting at 7:30a
Thursday, February 7: starting at 7:30a

Lunch is not provided. There are many options for lunch in the Hyatt Regency Hotel, including Addendum, a "grab & go" counter on the third floor. You can also explore options in nearby downtown New Orleans and the French Quarter.

Breaks will take place in Storyville Hall.

Wi-Fi/Internet:

Complimentary Wi-Fi and Internet are available in the Hyatt guest rooms. Wi-Fi is also provided in the conference meeting space.

Username: **GulfConference**

Passcode: **GOMOSES19**

Exhibits:

Exhibits from conference sponsors and partners are located in Storyville Hall for the duration of the conference. We encourage you to stop by during breaks!

Information for Oral Presenters

Each session you present in will have a laptop with your presentation pre-loaded and a laser pointer.

Presentation upload will take place in the Celestin Foyer on the third floor.

You must upload your presentation at least one hour before your session is scheduled to begin. We advise that you upload your presentation the day before your session to avoid lines and to ensure your presentation is uploaded in time.

The Presentation Upload Area will be open at the following times:

Monday, February 4: 12:00p – 5:30p
Tuesday, February 5: 7:30a – 6:00p
Wednesday, February 6: 7:30a – 6:00p
Thursday, February 7: 7:30a – 10:30a

Your presentation should be no more than 12 minutes in length (unless you have been designated a 30-minute time slot). This allows for the transition of speakers and keeps the session running on time.

Please make sure your presentation is in PC-compatible PowerPoint format set at a widescreen (16:9) ratio. Please use standard fonts, and if you include videos, provide the original files to the technical staff. You will not be able to stream videos from an online source. This will minimize technical disruptions during the meeting. You will be able to test your presentation ahead of time in the Presentation Upload Area.

Information for Poster Presenters

All Poster Sessions will take place in Storyville Hall on the third floor of the Hyatt Regency New Orleans Hotel. The room will be available for you to hang your poster in advance between 2:00PM and 6:00 PM on Monday, February 4.

Posters will hang in Storyville Hall from Monday afternoon through the duration of the conference.

Posters must be removed by noon on Thursday, February 7. Any posters not removed by their presenters at this time will be discarded.

Poster size should be no more than 48in high x 48in wide.

Media Policy

Media representatives are welcome to attend the 2019 Gulf of Mexico Oil Spill & Ecosystem Science Conference. Media participants will have a separate table to check-in at registration. Please look for the "media" sign in the registration area in the Celestin Foyer (third floor). Interview space can be provided upon request.

The conference's media policy is designed to ensure a professional forum in which presenters and other meeting registrants can discuss science-based issues freely and in which their concerns about proprietary research data and other information is acknowledged and respected. It is also designed to ensure a forum in which journalists and other media representatives can gather the information they need to deliver factual reporting.

The conference intends to assist media representatives by keeping them updated through press releases, news updates and social media. The conference will also help journalists by arranging interviews with speakers and attendees.

In return, the conference would like all media representatives to:

- Wear the designated media badge given to them by conference organizers and identify themselves as a member of the press when attending conference events or talking with any conference participants.

- Obtain permission from Communications and Media Staff before filming, taping or otherwise recording any activity or interview at the conference. Broadcast journalists can record the opening and closing plenaries but audio and video taping of any scientific session is not permitted.

- Any media representative, who sells, markets, or represents a company for purposes of obtaining advertising or subscriptions from any registrant will immediately forfeit press credentials.

Photo Policy

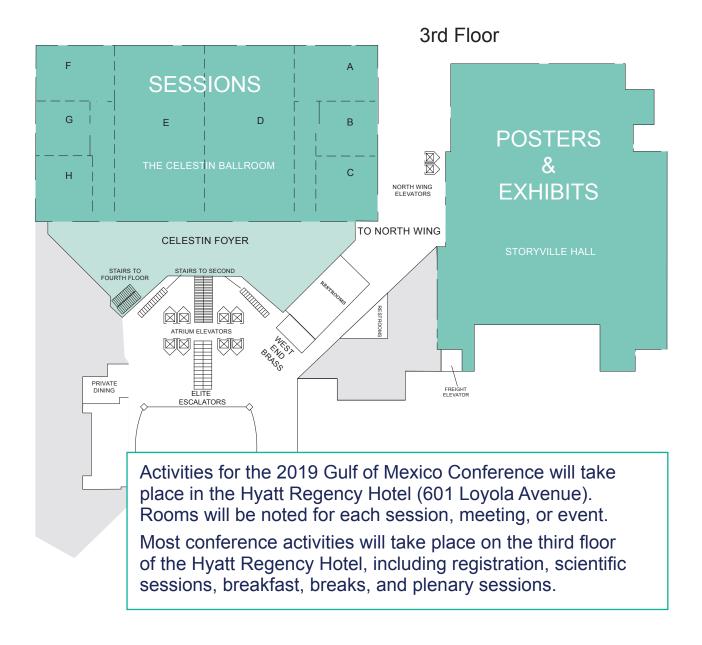Attendees are permitted to take photos during the conference.

Official conference photographs will be taken. By registering for this meeting, you agree to allow the conference to use your photo in any subsequent conference-related publication or website.

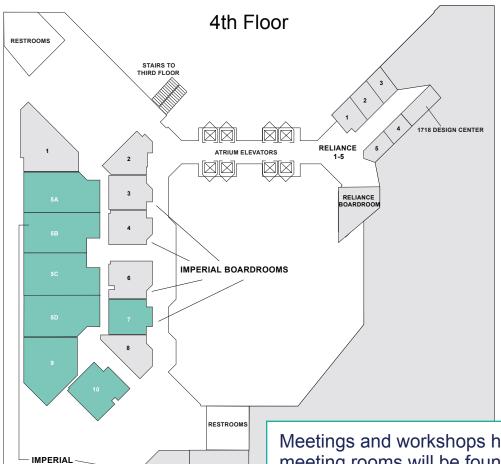## Audio and Video Policy

Attendees are not permitted to record, film or tape any scientific session.

Cell Phone Policy

Out of courtesy to our speakers and attendees, we request that all cell phones be turned off during sessions and meetings.

3rd Floor

F

SESSIONS

A

G

E

D

B

H

THE CELESTIN BALLROOM

C

NORTH WING ELEVATORS

POSTERS
&
EXHIBITS

CELESTIN FOYER

TO NORTH WING

STORYVILLE HALL

STAIRS TO FOURTH FLOOR

STAIRS TO SECOND

RESTROOMS

ATRIUM ELEVATORS

RESTROOMS

WEST END BRASS

PRIVATE DINING

FREIGHT ELEVATOR

ELITE ESCALATORS

Activities for the 2019 Gulf of Mexico Conference will take place in the Hyatt Regency Hotel (601 Loyola Avenue). Rooms will be noted for each session, meeting, or event.

Most conference activities will take place on the third floor of the Hyatt Regency Hotel, including registration, scientific sessions, breakfast, breaks, and plenary sessions.

4th Floor

RESTROOMS

STAIRS TO
THIRD FLOOR

1
2
3

ATRIUM ELEVATORS

RELIANCE
1-5

3
2
1

4

5

1718 DESIGN CENTER

RELIANCE
BOARDROOM

5A

5B

5C

5D

9

2

3

4

6

7

8

10

IMPERIAL BOARDROOMS

RESTROOMS

IMPERIAL

11

12

Meetings and workshops held in Imperial meeting rooms will be found on the 4th floor.

The Tuesday and Wednesday night poster sessions and receptions will take place in Storyville Hall on the third floor. The Gulf of Mexico Data Tools Café will be held on Tuesday evening in Storyville Hall.

Photo credit: FWC Fish & Wildlife Research Institute

Monday, February 4

Time	Event	Location
8:30a – 5:30p	Registration and check-in open	Celestin Foyer
12:00p – 5:30p	Presentation upload open	Celestin Foyer
2:00p – 6:00p	Exhibit set up	Storyville Hall
2:00p – 6:00p	Poster set up	Storyville Hall

Workshops and Associated Meetings

Time	Event	Location
7:30a – 5:00p	Workshop on the Trophic Effects of Nitrogen Sources and Plankton Food Web Dynamics for the Larvae of Atlantic Bluefin Tuna in the Gulf of Mexico (Closed)	Imperial 10
7:30a – 5:30p	Oil Spill Preparedness and Response Workshop: Tradeoff Decisions in the Gulf of Mexico (Closed)	Celestin H
9:00a – 12:00p	Monitoring Coordination Committee Meeting (Closed)	Celestin C
9:00a – 5:00p	Responding to Future Deep Water Oil Spills in the Gulf of Mexico	Celestin B
9:00a – 5:00p	BSEE/NOAA Cruise Workshop (Closed)	Celestin D
9:00a – 5:00p	AIBS Science Policy Training (Closed)	Imperial 5 C/D
12:00p – 2:00p	CONCORDE Synthesis Workshop (Closed)	Celestin G
1:00p – 5:00p	Stakeholder Engagement to Identify Monitoring and Adaptive Management Data Needs for the Deepwater Horizon NRDA Open Ocean TIG's Restoration Program	Celestin A
1:00p – 5:00p	Framing Indicators for an Ecosystem Assessment of Barataria Basin, LA	Celestin E
2:00p – 5:00p	NOAA RESTORE Site Visit: Sargassum Project (Closed)	Celestin G
5:30p – 7:30p	GoMRI Synthesis Leaders Meeting (Closed)	Imperial 5 C/D

Photo credit: Ben Raines

Tuesday, February 5

Time	Event	Location
7:30a – 5:30p	Registration and check-in open	Celestin Foyer
7:30a – 6:00p	Presentation upload open	Celestin Foyer
7:30a – 7:30p	Poster hall and exhibits open	Storyville Hall

Opening Plenary Program Schedule

Starting at 7:30a	BREAKFAST	Storyville Hall
9:00a – 10:00a	Welcome and Introduction Changing Focus: From Oil Spill Response to Restoration	Celestin D/E
10:00a – 10:30a	BREAK	Storyville Hall
10:30a – 12:00p	Panel and Discussion	Celestin D/E
12:00p - 2:00p	LUNCH BREAK	

Scientific Program Schedule

2:00p – 3:30p	Session 001	Celestin A
	Session 002	Celestin C
	Session 003	Celestin D
	Session 004	Celestin E
	Session 005	Celestin F
	Session 006	Celestin H
3:30p – 4:00p	BREAK	Storyville Hall
4:00p – 5:30p	Session 001	Celestin A
	Session 002	Celestin C
	Session 003	Celestin D
	Session 004	Celestin E
	Session 005	Celestin F
	Session 006	Celestin H
5:30p – 7:30p	Poster session & reception (featuring Sessions 001 – 012)	Storyville Hall

Workshops and Associated Meetings

8:00a – 9:00a	Gulf of Mexico Restoration and Science Program Coordination Forum (Closed)	Imperial 5 A/B
10:00a – 10:30a	Organizing Data – Best Practices and GRIIDC Submission	Imperial 9
12:00p – 2:00p	GRIIDC Advisory Board Meeting (Closed)	Celestin B
12:15p – 1:45p	The Future of the U.S. Gulf Coast Coupled Natural-Human System: NASEM Report Overview, GRP Funding Opportunity, and Research Funders Discussion	Imperial 5 C/D
3:30p – 4:00p	Submitting Cruise Data to GRIIDC	Imperial 9
5:00p – 6:00p	GoMRI Coordinators Meeting (Closed)	Celestin B
5:30p – 6:30p	What Do We Need to Know? Toward a Response Oil Assay	Imperial 5 C/D
5:30p – 7:30p	Gulf of Mexico Data Tools Café	Storyville Hall

Changing Focus: From Oil Spill Response to Restoration

Tuesday, February 5, 9:00a – 12:00p, Celestin D/E

Deepwater Horizon is not the first time a wealth of scientific research has resulted from a major oil spill; similar research activities under the Exxon Valdez Oil Spill Trustee Council informed federal legislation, spill response, and, later, restoration efforts in Alaska. What can the Gulf research and management communities learn from the Alaskan experience to help make their own transition from response to recovery and restoration? Does the Gulf region have the administrative and financial support necessary to address any knowledge gaps and maintain the current momentum for Gulf science?

Welcome and Introduction

Rita Colwell, *Chair, GoMRI Research Board*

Keynotes

A Legacy of Knowledge

Robert Spies, *Chief Scientist, Exxon Valdez Oil Spill Trustee Council (1990-2002)*

Bridging the Gap of Gulf Science and Decision-Makers

Buck Sutter, *Deputy Executive Director, Gulf Coast Ecosystem Restoration Council*

The Next Phase in Gulf Research

Panel

Chuck Wilson (Moderator)
Chief Science Officer, Gulf of Mexico Research Initiative

Pamela Plotkin
Director, Texas Sea Grant College Program

Alyssa Dausman
Vice President for Science, The Water Institute of the Gulf

Evonne Tang
Associate Executive Director, Gulf Research Program

Rita Colwell, *Chair, GoMRI Research Board*

Dr. Rita Colwell is a distinguished university professor at the University of Maryland at College Park and the Johns Hopkins University Bloomberg School of Public Health. Dr. Colwell chairs the Research Board of the Gulf of Mexico Research Initiative.

Robert Spies, *Chief Scientist, Exxon Valdez Oil Spill Trustee Council (1990-2002)*

Dr. Robert Spies received his degree from the University of Southern California in marine biology. He has studied marine pollution in Australia, the Marshall Islands, California, Washington, the Gulf of Mexico, and Alaska. He founded Applied Marine Sciences in 1990 and served as editor-in-chief of Marine Environmental Research and as chief scientist for the Exxon Valdez Oil Spill Trustee Council. He has about 50 publications in peer-reviewed journals dealing with the effects of contaminants on marine invertebrates and fish and long-term change in marine ecosystems. He was the editor of "Long-term Ecological Change in the Northern Gulf of Alaska."

Buck Sutter, *Deputy Executive Director, Gulf Coast Ecosystem Restoration Council*

Mr. Frederick (Buck) Sutter is the deputy executive director and program director for the Gulf Coast Ecosystem Restoration Council. Prior to this position, he served as the director of the Office of Habitat Conservation for the NOAA National Marine Fisheries Service where he was responsible for habitat protection and restoration across the nation to sustain fisheries and recover listed species within the context of a healthy and resilient ecosystem. Buck joined NOAA in 1993, working in State-Federal partnerships and highly-migratory species management, and served as the deputy regional administrator for the NOAA Fisheries Southeast Regional Office from 2003 - 2010.

Opening Plenary

Synthesis, Integration, Collaboration, and Linkages: Moving Complex Data into the Right Hands

Tuesday, February 5, 2:00p – 5:30p, Celestin A

Dave Reed, Florida Fish and Wildlife Conservation Commission
Elizabeth Fetherston-Resch, Florida Institute of Oceanography
Emily Frost, Smithsonian Institute
Jessica Henkel, Gulf Coast Ecosystem Restoration Council

How can we foster more transdisciplinary and cooperative approaches to science, decision making, and community engagement? Data must be synthesized and served to the many GoM audiences in a clear and compelling way if we are to successfully turn information into insight. Existing analyses and tools can be powerful instruments in effectively communicating science, and efforts are underway to develop a data management framework to support more efficient aggregation, integration, and synthesis of information in the future. These efforts will be necessary to bridge the gap between researchers and the response, restoration, resiliency, and management communities who use this data to shape the future of the Gulf region.

Time	Title	Presenter
2:00p – 2:15p	An Overview of the DIVER Data Management System and How It Integrates Regional Data with Tools for Data Collection, Reporting, Search, and Visualization	Ben Shorr, NOAA
2:15p – 2:30p	NRDA Restoration Monitoring Data Integration into DIVER Application	Nicolas Eckhardt, NOAA
2:30p – 2:45p	Exploring Coastal Vulnerabilities to Oil Spills with the Tactical Analysis and Coordination for Oil Spills (TACOS) Suite	Tony Grubesic, Arizona State University
2:45p – 3:00p	Use of Open Data Science to Inform Restoration Projects in Estuaries: A Tampa Bay Example	Jessica Henkel, Gulf Coast Ecosystem Restoration Council
3:00p – 3:15p	Incorporating Deepwater Horizon Data into Core NCEI Databases to Improve the Quality of Data Products in the Gulf of Mexico	Zhankun Wang, National Center for Environmental Information
3:15p – 3:30p	A Call for a Consistent and Transparent Framework for Habitat Mapping in the Gulf of Mexico	Vincent Lecours, University of Florida
3:30p – 4:00p	Coffee Break	
4:00p – 4:15p	RECOVER Virtual Lab: Utilizing RECOVER Data through a Virtual Lab Application to Disseminate and Communicate Oil Spill Science	Alexandra Karaczynski, University of Miami
4:15p – 4:30p	Predictive Neural Network Model for Real-Time Nowcasting of Recreational Water Quality Advisories along the Gulf Texas Beaches	Chuan-Yuan Hsu, Texas A&M University
4:30p – 4:45p	Migratory Connectivity in Cuba: Synthesis and Conservation	Jorge Brenner, The Nature Conservancy
4:45p – 5:00p	Deepwater Horizon Data Collaboration: Advancing Approaches to Managing and Sharing Environmental Data	Ben Shorr, NOAA
5:00p – 5:30p	Panel Discussion	

Turbulent Behavior of Deepwater Blowouts

Tuesday, February 5, 2:00p – 5:30p, Celestin C

Zachary Aman, University of Western Australia
Claire Paris, University of Miami
Michael Schlüter, Hamburg University of Technology

This session focuses on experimental multi-physics computational fluid dynamics (CFD) and multi-phase hydrocarbon modeling-based studies, and their coupling to far-field models necessary to predict crude oil distribution in deepwater blowout environments. Presentations seek to address a critical outstanding knowledge gap as to whether subsea dispersant addition significantly affected the dispersing potential of the subsea plume, considering effects on oil biodegradation, dissolution, flocculation, sedimentation, and sequestration. Related physical and geochemical processes represent critical building blocks for the next generation of 4D models to describe oil transport and fate under high-pressure and low temperature conditions, with a particular focus on assessing risk and injury, planning response, and quantitatively informing trade-offs between response options.

Time	Title	Presenter
2:00p – 2:30p	Modeling Deepwater Oil and Gas Releases: Brief History and the Current Status	Poojitha Yapa, Clarkson University*
2:30p – 2:45p	Numerical Modelling of Flow Through an Orifice Plate and the Effects that Obstructions Have on Deepwater Jets	Craig Booth, University of Western Australia
2:45p – 3:00p	Large-Eddy Simulations of Effects of Gas Bubble Dissolution on Dynamics of Deep-Sea Hydrocarbon Plume	Chen Peng, University of Houston
3:00p – 3:15p	Turbulent Structure of Oil Plumes in Oceanic Environment	Som Dutta, City University of New York
3:15p – 3:30p	Hydrate Growth on Gas Bubble Interfaces in a Water Dominant System	Louis Yu, Colorado School of Mines
3:30p – 4:00p	Coffee Break	
4:00p – 4:30p	Phenomena Affecting Breakup of Oil Patches by Plumes and Waves	Joseph Katz, Johns Hopkins University*
4:30p – 4:45p	Experimental Investigation and Prediction of Droplet Size Distributions in Turbulent Oil-in-Water Jets—Scale-Up from Lab to Large Scale	Simeon Pesch, Hamburg University of Technology
4:45p – 5:00p	Detailed Characterization of the Breakup of Subsurface Turbulent Oil Jets: Formation of Compound Droplets and Their Morphological Statistics	Xinzhi Xue, Johns Hopkins University
5:00p – 5:15p	Experimental and Numerical Characterization of Multiphase Flow from Underwater Blowout: A Combined Particle Imaging Velocimetry and Computational Fluid Dynamics Approach	Feng Gao, New Jersey Institute of Technology
5:15p – 5:30p	Population Balance Modeling to Study Evolution of Jet with Polydisperse Oil Droplets in a Large Eddy Simulation Framework	Aditya Aiyer, Johns Hopkins University

invited speaker

Analytical Advances in Chemical Analysis for Oil Spills: Recent Gains and Gaps in Knowledge Facilitated by GoMRI-Funded Research

Tuesday, February 5, 2:00p – 5:30p, Celestin C

Ryan Rodgers, National High Magnetic Field Laboratory
Elizabeth Kujawinski, Woods Hole Oceanographic Institution
Terry Wade, Texas A&M University

GoMRI-funded efforts to date have fueled the development of analytical methods to explore weathering-induced molecular-level changes in complex petroleum mixtures. This session will discuss advances in both conventional / new analytical techniques and their importance in the expansion of knowledge in oil spill science; it will highlight the most important findings in GoMRI sponsored research to date and discuss the remaining gaps in knowledge.

Time	Title	Presenter
2:00p – 2:30p	Foundational Analytical Methodologies in Oil Spill Analyses	Edward Overton, Louisiana State University
2:30p – 3:00p	The Usage of Comprehensive Two-Dimensional Gas Chromatography Following the Deepwater Horizon Disaster	Christopher Reddy, Woods Hole Oceanographic Institute
3:00p – 3:30p	Applications of High Resolution Mass Spectrometry in Oil Spill Science: Past, Present, and Future Opportunities	Ryan Rodgers, National High Magnetic Field Laboratory
3:30p – 4:00p	Coffee Break	
4:00p – 4:30p	What Can Molecular-Level Analyses Tell Us about Biological and Chemical Dynamics of Oil- and Dispersant-Degradation?	Elizabeth Kujawinski, Woods Hole Oceanographic Institute
4:30p – 5:00p	Linking Chemical Analyses with Genomics to Gain Insights into the Biochemical Underpinnings of Oil Degradation	Helen White, Haverford College
5:00p – 5:30p	Analysis of Oil Photo-Products: Insights About Oil Weathering from New Analytical Methods	Christoph Aeppli, Bigelow Laboratory for Ocean Sciences

Environmental Setting, Stressors, and Their Influence on Resilience of Benthic Fauna in the Gulf of Mexico

Tuesday, February 5, 2:00p – 5:30p, Celestin E

Patrick Schwing, University of South Florida
Sarah Davies, Boston University
Arne Diercks, University of Southern Mississippi
Isabel Romero, University of South Florida
Adrienne Correa, Rice University
Jason Sylvan, Texas A&M University

Benthic systems in the GoM are experiencing several large-scale stressors including changes in oceanic current patterns that can modify dispersal capacities of benthic and reef organisms, increases in sea surface temperatures, and increases in storm runoff, which can lead to seawater stratification and seasonal hypoxia episodes. Coupled with these global stressors, GoM benthic systems also experience more local pressures related to oil and gas activity, terrestrial runoff from agriculture, extreme storm impacts, and fishing pressure. This session highlights research across several disciplines targeted towards an integrated understanding of the marine benthic system throughout the Gulf of Mexico (US, Mexico, Cuba).

Time	Title	Presenter
2:00p – 2:15p	First Complete Profile of Marine Snow Abundance in the Orca Basin, Sea Surface to Sea Floor	Arne Diercks, University of Southern Mississippi
2:15p – 2:30p	Benthic Foraminifera as Recorders of Oil Impact in the Southern Gulf of Mexico	Maria Machain-Castillo, Universidad Nacional Autónoma de México
2:30p – 2:45p	Baseline Characterization of Soft-Bottom Benthic Communities in Support of Regulatory Permitting for Drilling in the Deepwater Mexican Gulf of Mexico	Raymond Valente, Shell Global Solutions
2:45p – 3:00p	Deep Water Coral-Associated Microbial Communities in the Gulf of Mexico Differ along Gradients of Natural Oil and Gas Inputs	Iliana Baums, Pennsylvania State University
3:00p – 3:15p	Significantly Increasing our Understanding of Deep-Sea Ecosystems While Monitoring the Deep Gulf of Mexico for Anthropogenic Impacts	Charles Fisher, Pennsylvania State University
3:15p – 3:30p	Exploring Population Connectivity of Deepwater Corals to Inform Restoration in the Northern Gulf of Mexico	Santiago Herrera, Lehigh University
3:30p – 4:00p	Coffee Break	
4:00p – 4:15p	Exploring the Role of the Microbiome on the Health and Resiliency of Corals at the Flower Garden Banks National Marine Sanctuary after Severe Storms	Amanda Shore, Rice University
4:15p – 4:30p	A Bayesian Hierarchical Model for Spatial Analysis of Reef Habitat Data of the Gulf of Mexico	Xuetao Lu, Arizona State University
4:30p – 4:45p	PAH Influence on Living Resources Resiliency	Adolfo Gracia, Universidad Nacional Autónoma de México
4:45p – 5:00p	Spatiotemporal Trends in PAH Baselines in Gulf of Mexico Fishes	Erin Pulster, University of South Florida
5:00p – 5:15p	Will Coastal Shrimp Thrive in Areas of Louisiana Where Increased Inputs of Fresh Water Occur?	Abigail Bockus, Louisiana Universities Marine Consortium
5:15p – 5:30p	Reproductive Impairment in Three Groundfish Species in and around the Northern Gulf of Mexico Hypoxic Zone	Michael Cyrana, Tulane University

Filling Long-Term Research and Monitoring Gaps across Multiple Taxa of Large Marine Vertebrates: Marine Mammals, Sea Turtles, Seabirds, and Beyond

Tuesday, February 5, 2:00p – 5:30p, Celestin F

Jenny Litz, NOAA Fisheries
Margaret Lamont, U.S. Geological Survey
Patrick Jodice, Clemson University
Vicki Cornish, Marine Mammal Commission

A variety of tools and techniques are used to record the long-term presence, movements, health, habitat use, and behavior of large marine vertebrates (LMVs) in the GoM; including aerial and vessel surveys, live-capture health assessments, telemetry tagging, passive acoustic monitoring, stable isotopes, and genetic sampling. This session will highlight the methods, survey designs, data analyses, and integrative modeling approaches being utilized for LMVs to actively support decision-making in the GoM. Session speakers will identify the major questions and gaps that remain for understanding the long-term health and resilience of LMV populations and strategies to fill these needs moving forward.

Time	Title	Presenter
2:00p – 2:15p	Cetaceans as Sentinels of Ecosystem Health in the Gulf of Mexico	Randall S. Wells, Chicago Zoological Society*
2:15p – 2:30p	When Gaps Aren't Voids: What We [Don't] Know about Marine Birds in the Gulf of Mexico	J. Christopher Haney, Terra Mar Applied Sciences, LLC *
2:30p – 2:45p	Aerial Seabird Surveys in Northern Gulf of Mexico: Design Considerations and Preliminary Results	Randy Wilson, U.S. Fish and Wildlife Service
2:45p – 3:00p	Novel Insights on the Distribution and Abundance of Seabirds from Vessel-Based Surveys in the Northern Gulf of Mexico	Pam Michael, Clemson University
3:00p – 3:15p	Marine Mammal GoMMAPPS: Seasonal Line-Transect Surveys for the Development of Spatially and Seasonally-Explicit Density Models	Joel Ortega-Ortiz, Cooperative Institute for Marine and Atmospheric Studies
3:15p – 3:30p	The Trophic Ecology and Habitat of the Gulf of Mexico Bryde's Whale (*Balaenoptera edeni*)	Lance Garrison, NOAA Fisheries
3:30p – 4:00p	Coffee Break	
4:00p – 4:15p	Juvenile Loggerhead Dispersal in the GoM, What Are the Controlling Circulation Processes and How Does This Compare to Other Global Nesting Sites?	Cheryl Harrison, University of Texas Rio Grande Valley
4:15p – 4:30p	Combining Methods to Assess Exposure of the Northern Coastal Stock of Common Bottlenose Dolphins (*Tursiops truncatus*) to Multiple Environmental Stressors	Brian Balmer, National Marine Mammal Foundation
4:30p – 4:45p	Long-Term Regional Abundance Trends of Deep-Diving Marine Mammals Near the Oil Spill Site	Kun Li, University of Louisiana at Lafayette
4:45p – 5:00p	Trends and Demographics of Sperm Whale Populations in the Gulf of Mexico: 2010-2017	Alba Solsona-Berga, Scripps Institution of Oceanography
5:00p – 5:15p	Genetic Data Suggest Sex-Biased Dispersal among Sperm Whales in the Gulf of Mexico	Nicole Vollmer, NOAA Fisheries
5:15p – 5:30p	Recurrence of Bottlenose Dolphin Immune Function Changes Associated with the Deepwater Horizon Oil Spill in the Northern Gulf of Mexico	Sylvain De Guise, University of Connecticut

*invited speaker

Science to Action: Building Partnerships and Developing Collaborations to Support Living Coastal and Marine Resource Management

Tuesday, February 5, 2:00p – 5:30p, Celestin H

Julien Lartigue, NOAA
John Tirpak, U.S. Fish and Wildlife Service
Kassie Ernst, NOAA

The effective management of living coastal or marine resources in the GoM requires understanding the resource's current status, its link to other components of the ecosystem, and the pressures the resource faces now and may face in the future. In this session, we will highlight collaborations between researchers and resource managers that demonstrate strategies to ensure the scientific findings and products emerging from the latest research are actionable, applicable, and usable by those working with living coastal and marine resources. The session will explore 1) how researchers can build and strengthen partnerships with resource managers or users, 2) how these collaborative partnerships result in decision-relevant knowledge or support tools, and 3) how information gaps and new directions for research are identified through these partnerships.

Time	Title	Presenter
2:00p – 2:15p	The Development of Living Shoreline Suitability Models for Select Waterbodies within the Gulf of Mexico	Chris Boyd, Troy University
2:15p – 2:30p	Understanding the Role of Mangroves in Buffering Coastal Inundation during Tropical Cyclones and Rising Sea Level in Southwest Florida	Y. Peter Sheng, University of Florida
2:30p – 2:45p	Identifying Priority Research Needs for Snapper-Grouper Fisheries of the West Florida Shelf through Participatory Fisheries System Modeling	Mandy Karnauskas, NOAA Fisheries
2:45p – 3:00p	From Threat to Improved Practices: How Ecological Events Led to the Design of Monitoring Tools in Two Gulf of Mexico National Marine Sanctuaries	Matthieu Le Henaff, University of Miami
3:00p – 3:15p	Evaluating Ecological and Human Dimension Indicators for an Ecosystem Assessment of Barataria Basin	Shannon Martin, NOAA
3:15p – 3:30p	Facilitating Climate Adaptation in the South-Central U.S. Using Co-Produced Science: The Challenge of Too Much or Too Little Inertia	Michael Langston, U.S. Geological Survey*
3:30p – 4:00p	Coffee Break	
4:00p – 4:15p	Incorporating Manager Input into Ecosystem Modeling Efforts for the Gulf of Mexico	David Chagaris, University of Florida
4:15p – 4:30p	Gulf of Mexico Avian Monitoring Network: A Monitoring Community of Practice	Randy Wilson, U.S. Fish and Wildlife Service
4:30p – 4:45p	Maintaining Engagement with End-Users Throughout the Research Process to Strengthen Applied Science	Kelly Darnell, University of Southern Mississippi
4:45p – 5:00p	The Northern Gulf of Mexico Sentinel Site Cooperative: Connecting Research, Service, and Decision-Making	Renee Collini, Mississippi-Alabama Sea Grant Consortium
5:00p – 5:30p	Panel Discussion	

invited speaker

GULF OF MEXICO RESEARCH INITIATIVE
SYNTHESIS & LEGACY

The Gulf of Mexico Research Initiative (GoMRI) will come to an end in 2020 after 10 years of dedicated research efforts to improve society's ability to understand, respond to, and mitigate the impacts of petroleum pollution and related stressors of the marine and coastal ecosystems, with an emphasis on conditions found in the Gulf of Mexico.
GoMRI is synthesizing knowledge to ensure that GoMRI's scientific achievements and advances are integrated and will be available to scientists and other user groups. Learn more about GoMRI's synthesis efforts, including a series of workshops that will continue through 2019, at *gulfresearchinitiative.org/gomri-synthesis/*.

GoMRI findings, including the data and peer reviewed publications, are publicly available. This data and information legacy will promote continual scientific discovery and public awareness of the Gulf of Mexico ecosystem. Please visit *data.gulfresearchinitiative.org* and *research.gulfresearchinitiative.org* to learn more!

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GULF RESEARCH PROGRAM

Catalyzing advances in science, practice, and capacity to generate long-term benefits for the Gulf of Mexico region and the Nation.

Learn more at www.nationalacademies.org/gulf

2019 Grant Opportunities

- **Safer Offshore Energy Systems 4**
  Letters of intent due Feb. 13

- **Understanding Gulf Ocean Systems 2**
  Opening 2019

- **Healthy Ecosystems 4**
  Opening 2019

2019 Fellowship Opportunities

- **Early-Career Research Fellowships**
  Applications due Feb. 20

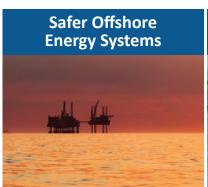- **Science Policy Fellowships**
  Applications due Mar. 6

Questions? Stop by our booth!

We'll be hosting informal Q&A sessions at our booth in Storyville Hall.

- **Gulf Research Program Fellowships Q&A**
  Tuesday, Feb. 5 at 10 - 10:30 a.m.
  Wednesday, Feb. 6 at 10 - 10:30 a.m.

- **Understanding Gulf Ocean Systems Q&A**
  Tuesday, Feb. 5 at 3:30 - 4 p.m.

- **Healthy Ecosystems Grants 4 Q&A**
  Tuesday, Feb. 5 at 5:30 - 7 p.m.

- **Data Management Q&A for Gulf Research Program Grantees and Fellows**
  Wednesday, Feb. 6 at 3:30 - 4 p.m.

Healthy Ecosystems

Thriving Communities

Safer Offshore Energy Systems

Capacity Building

Tuesday, February 5, 5:30p – 7:30p
Storyville Hall

#	Title	Presenter
P-001:		
1	Fluxes between River, Estuary, and Coastal Ocean: State of the Art and Future Challenges	Songjie He, Louisiana State University
2	Historical Dispersant Use in U.S. Waters	Doug Helton, NOAA
P-002:		
3	Experiments on Multiphase Plumes in a Rotating Environment	Daria Frank, University of Cambridge
4	Predicting Hydrocarbon Volumes and Pathways from Subsurface Formations to the Sea Floor During Blowouts in Gulf of Mexico Offshore Settings	Ipsita Gupta, Louisiana State University
5	Experimental Investigation of Oil Droplet-Turbulence Interactions under Breaking Waves	Cheng Li, University of Minnesota Twin Cities
6	The Effects of Bubbles on Oil Transport during High Wind Conditions	Glorianne Rivera Santiago, University of Miami
7	Observed High Frequency Internal Wave Accompanied by Symmetrical Unstable Fronts	Mingming Shao, University of Miami
8	Dynamic Coupling of Near-Field and Far-Field Models	Ana Vaz, University of Miami
9	Eulerian Large Eddy Simulations of Bubble-Driven Plume with Finite Bubble Void Fraction	Shuolin Xiao, University of Houston
10	Modeling of Multiphase Plumes in a Stably Stratified Environment	Guangzhao Zhou, University of Houston
P-003:		
11	Determination of Benzo[b]naphtho[2,1-b]thiophene in NPLC Fraction on the Basis of Excitation Emission Low Temperature Phosphorescence Data Coupled to PARAFAC	Sadia Arif, University of Central Florida
12	Chemometric Analysis of High-Molecular Weight Polycyclic Aromatic Hydrocarbons under Normal Phase Liquid Chromatography Conditions	Mohammadreza Chehelamirani, University of Central Florida
14	Chromatographic Optimization for the Chemometric Determination of High-Molecular Weight Polycyclic Aromatic Hydrocarbons via Photodiode Array Detection	James Janesko, University of Central Florida
15	High-Resolution Photoluminescence Approach for the Isomeric Analysis of High-Molecular Weight-Polycyclic Aromatic Hydrocarbons in the Gulf of Mexico	Anthony Santana, University of Central Florida
16	Where Did It All Go? Fate and Distribution of PAHs on *Avicennia* and *Spartina* in Barataria Bay, LA	Kristina Sebastian, Louisiana State University
17	Stable Oxygen Isotopes as a Novel, Sensitive Tracer of Petroleum Hydrocarbon Oxidation at the Sunlit Sea Surface	Collin Ward, Woods Hole Oceanographic Institution

#	Title	Presenter
P-004:		
18	Foraminiferal Bio-Monitoring as an Effective Tool for Marine Ecosystem Quality Observations in the Persian Gulf	Mehrnoosh Abbasian, University of Tehran
19	Assessing eDNA Degradation Rates in Deepwater Marine Environments to Determine Persistence Controls and Viability for Species Identifications	Susan Ambrose, Lehigh University
20	REDIRECT: Evidence for Recent Gravity Flow Deposition Downslope of DWH: Re-Sedimentation of MOSSFA?	Gregg Brooks, Eckerd College
21	Local Hydrocarbon Rich Accumulation in Sediments from the Upper Slope of the Southern Gulf of Mexico	Misael Díaz Asencio, CICESE
22	Evolution of Sedimentary Redox Conditions Following Deepwater Horizon Blowout: Geochemical and Ecological Implications	David Hastings, Eckerd College
23	A Comparison of Scleractinian Corals Occurring in the West Florida Shelf and the Florida Keys	Lindsay Huebner, Florida Fish and Wildlife Research Institute
24	Spatial and Temporal Sediment Distribution and Accumulation Patterns: Northwest Cuba	Rebekka Larson, Eckerd College
25	REDIRECT: Spatial and Temporal Sedimentation Patterns in the NEGoM: Short-Lived Radioisotope Records of Sediment Focusing and Downslope Transport of MOSSFA	Rebekka Larson, Eckerd College
26	Re-Occurring Patterns of Stratification and Hypoxia in Chandeleur and Breton Sounds in Southeast Louisiana	John Lopez, Lake Pontchartrain Basin Foundation
27	The Development and Implementation of the Foram-AMBI for the Gulf of Mexico	Bryan O'Malley, University of South Florida
28	Expanded Footprint of the Deepwater Horizon Oil Spill on Deep-Sea Benthic Communities	Michael Reuscher, Texas A&M University - Corpus Christi
29	The Utility of Benthic Foraminifera for Gulf of Mexico Oil Spill Science and Resource Management	Patrick Schwing, University of South Florida
30	Water Column Prokaryotic Communities at the Flower Garden Banks National Marine Sanctuary after the 2016 Mass Mortality Event and Hurricane Harvey	Jason Sylvan, Texas A&M University
P-005:		
31	Can You See or Hear Me Now? Evaluating the Distribution, Abundance and Detectability of Ziphiid and Kogiid Whales in the Gulf	Laura Aichinger Dias, NOAA
32	Environmental DNA Assay for Detection of the Rare Gulf of Mexico Bryde's Whale	Patricia Rosel, National Marine Fisheries Service
33	Integrative Modelling of Marine Mammal Populations Impacted by the Deepwater Horizon Oil Spill	Len Thomas, University of St Andrews
34	Gulf of Mexico Dolphin Identification System (GoMDIS)- A Collaborative Effort to Better Understand Bottlenose Dolphin Movements	Randall Wells, Chicago Zoological Society
P-006:		
35	Evaluating Restoration Outcomes from the Deepwater Horizon Natural Resource Damage Assessment - Moving from Project-Level to Programmatic Outcomes	Melissa Carle, NOAA
36	Addition of Microbial Community Composition in the Evaluation of Habitat Suitability for Tidal Marsh Restoration Projects: A Case Study from the Lake Hermitage Marsh Creation Project, Plaquemines Parish, Louisiana	Annette Engel, University of Tennessee - Knoxville

#	Title	Presenter
P-007:		
37	Role of Micron-Scale Aggregates in Hydrocarbon Oxidation	Amanda Achberger, Texas A&M University
38	Synergistic Effects of Oil Exposure, Temperature, and Hypoxia on Two Economically Important Sciaenidae Fishes in the Gulf of Mexico	Kerri Ackerly, University of Texas at Austin
39	The Effect of Deepwater Horizon Crude Oil on DNA Methylation Patterns in Wild-Caught Red Drum (*Sciaenops ocellatus*) in Louisiana Estuaries	Natalie Beeken, Texas A&M University - Corpus Christi
40	Acute Toxicity of Oil and Dispersant on Deep-Sea Crustaceans	Gopal Bera, Texas A&M University
41	Early Life-Stage Effects of Deepwater Horizon Crude Oil Exposure on the Developing Zebrafish Kidney	Fabrizio Bonatesta, University of North Texas
42	Hepatic and Biliary Accumulation of PCBs, OCPs, and PAHs in Snappers and Groupers from the Northwest Coast of Cuba	Brigid Carr, University of South Florida
43	The Hydrodynamics of Swimming Bacteria at a Clean Oil-Water Interface	Nicholas Chisholm, University of Pennsylvania
44	The Effects of the Deepwater Horizon Oil Spill on Bottlenose Dolphin Diets	Carl Cloyed, Dauphin Island Sea Lab
45	The Marsh Periwinkle (*Littoraria irrorata*) as an Indicator of Deepwater Horizon Oil Spill Effects	Donald Deis, Atkins
46	Responses of Sulfate-Reducing Bacterial Communities to Hydrocarbon Contamination	Megan Feeney, Florida Gulf Coast University
47	Interactions of Microbes and Spartina alterniflora Growing in Oiled Mesocosms	Stephen Formel, Tulane University
48	Fiddler Crab Burrowing and Oil Pollution Alter Greenhouse Gas Fluxes from Salt Marsh Soil	Adrianna Grow, Smith College
49	Succession Pattern and Phylotype Analysis of Microphytobenthic Communities in a Simulated Oil Spill Seagrass Mesocosm Experiment	Taylor Hancock, Florida Gulf Coast University
50	Effects of Nitrogen Availability on the Diatom *Thalassiosira pseudonana* in the Presence of Oil and Surfactant	Jessica Hillhouse, Texas A&M University at Galveston
51	Decline and Recovery of Horse Fly Populations in Louisiana Marshes following the Deepwater Horizon Oil Spill	Claudia Husseneder, Louisiana State University Agcenter
52	Transcriptomic Responses to Oil Exposure in Estuarine Fish Across Developmental Stages and Taxa	Elizabeth Jones, University of Southern Mississippi
53	Novel Silica-Based Nanoparticles Reduce the Toxicity of Crude Oil WAF to Fathead Minnow Juveniles After 96h of Exposure	Hajime Kurita Oyamada, University of Florida
54	The Effects of Crude Oil and Corexit on the Diatom *Phaeodactylum tricornutum* under Nutrient Stress	Brittany Light, Texas A&M University at Galveston
55	Evaluating Dolphin Serum Fatty Acid Profiles as Indicators of Ecosystem Change and Dolphin Health Following the Deepwater Horizon Oil Spill	Michael Napolitano, CSS, Inc.
56	PAH Exposure in Red Snapper Collected Around Natural and Artificial Reef Systems in the Northwestern Gulf of Mexico	Tiffany Nicholson, University of South Florida
57	From Individuals to Ecosystem: The Use of Biomarkers as Risk Indicators for Operational Discharges of Oil and Gas Activity in the North Sea	Daniela Maria Pampanin, University of Stavanger
58	Population Dynamics and Disease Prevalence in the Marsh Rice Rat (*Oryzomys palustris*) following the 2010 Deepwater Horizon Oil Spill	Anna Perez-Umphrey, Louisiana State University
59	Towards a Petrochemical Vulnerability Index for Gulf of Mexico Marine Species: Comprehensive Collection of Body Burden and Toxicity Data	Beth Polidoro, Arizona State University
60	Impacts of the Deepwater Horizon Oil Spill on the Population Structure of the Southern Ribbed Mussel (*Geukensia granosissima*)	Adam Quade, Nicholls State University

#	Title	Presenter
61	Acute and Subacute Toxicity of Polycyclic Aromatic Hydrocarbons 1-methylnaphthalene and Phenanthrene to Five Atlantic Scleractinian Coral Species	D. Abigail Renegar, Nova Southeastern University
62	A Synthesis of Toxicology of Oil in Vertebrates: Lessons from the Deepwater Horizon Oil Spill	Teri Rowles, NOAA
63	Altered Gene Expression in Developing Mahi-Mahi Embryos Exposed to Chemical Dispersant and CEWAF	Daniel Schlenk, University of California, Riverside
64	Behavioral and Physiological Responses of Bicolor Damselfish and Mahi-Mahi to Olfactory Cues Following Crude Oil Exposure	Lela Schlenker, University of Miami
65	Path to "Dirty Blizzard" from Deep-Sea Oil Plume: Bacteria Form Streamers on Rising Droplets to Increase Drag	Jian Sheng, Texas A&M University
66	Maternal Offloading of PAHs and Relationship to Hepatobiliary Changes in Gulf of Mexico Golden Tilefish	Susan Snyder, University of South Florida
67	*In-Situ* Spectroscopy of *Cycloclasticus pugetii* to Monitor Degradation of Polycyclic Aromatic Hydrocarbons	Lauren Swientoniewski, Tulane University
68	Hydrocarbon Toxicity to the Shallow-Water Coral *Porites divaricata*: Modeling and Evaluating the Effects of Macondo Crude Oil	Nicholas Turner, Nova Southeastern University
69	The Sargassum Abundance under Oil Contamination Stress	Mengqiu Wang, University of South Florida
70	The Effect of Oil-Exposure on Ammonia and Urea Excretion in Mahi-Mahi (*Coryphaena hippurus*) Early Life Stages	Yadong Wang, University of Miami
71	Southern Flounder DWH Oil Sediment Induced Oxidative Stress and DNA Damage	Dana Wetzel, Mote Marine Laboratory
72	Acute Toxicity of 1-methylnapthalene and Macondo Surrogate Crude Oil to the Peppermint Shrimp, *Lysmata boggessi*	Eileen Whitemiller, Nova Southeastern University
P-009:		
211	What Are Nanoparticles Emitted from Seawater after an Oil Spill Made Up Of?	Nima Afshar-Mohajer, Johns Hopkins University
212	A Novel Exposure Device to Assess the Health Impacts of Airborne Particulate Matter on the Human Respiratory System	Lakshmana dora Chandrala, Johns Hopkins University
213	Sand Adherence Estimated through Hand Press Trails for Children at Beaches	Alesia Ferguson, North Carolina A&T University
P-011:		
214	Determination and Evaluation of Relative Response Factors of Alkylated PAH Homologs Using Gas Chromatography/Triple Quadrupole Mass Spectrometry	Puspa Adhikari, Florida Gulf Coast University
215	Fate of Eroding Crude Oil Asphalt and Emulsion in Shallow Marsh Embayments	William Coronel, Louisiana State University
216	Fate of Eroding Crude Oil Asphalt and Emulsion in Shallow Marsh Embayments Lab Experiment	William Coronel, Louisiana State University
217	Differences in the Compositional and Functional Responses of Marine Microbial Communities to Oil, Dispersant, and Chemically Dispersed Oil	Shawn Doyle, Texas A&M University
218	Degradation of Sand Oil Agglomerates in a Sandy Florida Beach	Markus Huettel, Florida State University
219	Weathered Crude Oil from the Deepwater Horizon Oil Spill was Rapidly Biodegraded but Altered Nutrient Cycles in Permeable Nearshore Sediments	Joel Kostka, Georgia Institute of Technology
220	Microbial Degradation of Polycyclic Aromatic Hydrocarbons at Ambient Near-Surface Coastal Conditions	Charles Lewis, University of Central Florida
221	Effects of Beached Weathered Oil May Depend on Shoreline Exposure History	Alice Ortmann, Fisheries and Oceans Canada

#	Title	Presenter
222	Eastern Oysters (*Crassostrea virginica*) as Retrospective Bioindicators to Detect Oil Contamination in the Marine Environment	Kimberly Peter, Dauphin Island Sea Lab
223	Dynamics of Surfacing Oil Droplets in the Presence of Dispersants	Alexander Soloviev, Nova Southeastern University
224	Applicability of a New Green Dispersant Based on the Hydrolysis of Shrimp Waste	Xing Song, Memorial University of Newfoundland
225	Amphiphilic Grafted Nanoparticles as a Platform for Dispersants with Improved Efficiency and Biocompatibility	Susan Walley, University of Florida
P-0012:		
226	The Changes of Energy Dissipation and Temperature Dissipation Rate through Surface Boundary Layer in Grid-Generated Turbulence Flow	Mohammad Barzegar-paiin-lamouki, Texas A&M University - Corpus Christi
227	Bioaccumulation Potential of Oxygenated Oil Photo-Products Relative to Non-Polar Compounds under Laboratory Conditions	Erin Beirne, Bigelow Laboratory for Ocean Sciences
228	Molecular Composition of Photo Oxidation Products Derived from Sulfur Containing Compounds Isolated from Petroleum Samples	Martha Chacon-Patino, National High Magnetic Field Laboratory
229	Marine Oil Dispersion—Insights into Dispersant Efficacy from Phase Equilibria and Nanostructure	Louis Corcoran, University of Minnesota Twin Cities
230	Novel Fractionation Techniques Applied to Field Samples with Subsequent Characterization by FT-ICR Mass Spectrometry Reveals the Complexity of Ox Transformation Products	Cameron Davis, National High Magnetic Field Laboratory
231	Oil Uptake Efficiency of Amphiphilic Grafted Nanoparticles for Oil Spill Remediation	Christopher Keller, Tulane University
232	Can Photo-Oxidized Oil Be Biodegraded by Marine Microbes?	Phoebe Keyes, Bigelow Laboratory for Ocean Sciences
233	The Self-Assembly of Dispersants at the Oil-Water Interface Probed through Small Angle Neutron Scattering and Cryogenic Electron Microscopy	Igor Kevin Mkam Tsengam, Tulane University
234	Photodegradation of High-Molecular Weight Polycyclic Aromatic Hydrocarbons Exposed to Ultraviolet and Visible Light	Anthony Moore, University of Central Florida
235	The Structural Dependence of Photo Generated Transformation Products for Aromatic Hydrocarbons Isolated from Petroleum	Sydney Niles, National High Magnetic Field Laboratory
236	Converting Halloysite Clay Pickering Microdroplets into Liquid Marbles for Synergistic Oil Spill Remediation with Delivery of Encapsulated Bacteria	Abhishek Panchal, Louisiana Tech University
237	How Does Oil Photo-Oxidation Influence the Toxicity of Oil? Computationally Predicting the Toxicity of Oil Photo-Products	Tom Regan, Bowdoin College
238	The Effects of Crude Oil and Corexit on Silica-Replete and Silica-Limited *Phaeodactylum tricornutum*	Talia Rodkey, Lehigh University
239	Diurnal Cycling of Submesoscale Dynamics: Lagrangian Implications in Model Simulations of the Northern Gulf of Mexico	Daoxun Sun, Georgia Institute of Technology
240	The Analysis of Physical Parameters from the Stone Moorings in the Gulf of Mexico	Senam Tsei, University of Southern Mississippi
241	Half-Lives of Petroleum Hydrocarbons in Controlled Mesocosm Studies	Terry Wade, Texas A&M University
242	Oil-Microbe Interactions in the Gulf of Mexico (GoM) Modeled with the Genome-Based EmergeNt Ocean Microbial Ecosystem Model	Jiaze Wang, University of Maryland Center for Environmental Science
243	Oil Behavior in Turbulent Flows under the Effects of Dispersants	Lin Zhao, New Jersey Institute of Technology

We work
with our partners
to develop scientific
solutions to keep the coasts clean
from threats of oil, chemicals,
and marine debris.

Wednesday, February 6

Time	Event	Location
7:30a – 5:30p	Registration and check-in open	Celestin Foyer
7:30a – 6:00p	Presentation upload open	Celestin Foyer
7:30a – 7:30p	Poster hall and exhibits open	Storyville Hall

Scientific Program Schedule

Time	Event	Location
Starting at 7:30a	BREAKFAST	Storyville Hall
8:30a – 10:00a	Session 007	Celestin E
	Session 008	Celestin F
	Session 009	Celestin H
	Session 010	Celestin A
	Session 011	Celestin C
	Session 012	Celestin D
10:00a – 10:30a	BREAK	Storyville Hall
10:30a – 12:00p	Session 007	Celestin E
	Session 008	Celestin F
	Session 009	Celestin H
	Session 010	Celestin A
	Session 011	Celestin C
	Session 012	Celestin D
12:00p - 2:00p	LUNCH BREAK	
2:00p – 3:30p	Session 012	Celestin D
	Session 013	Celestin A
	Session 014	Celestin H
	Session 015	Celestin C
	Session 016	Celestin F
	Session 017	Celestin E
3:30p – 4:00p	BREAK	Storyville Hall
4:00p – 5:30p	Session 012	Celestin D
	Session 013	Celestin A
	Session 014	Celestin H
	Session 015	Celestin C
	Session 016	Celestin F
	Session 017	Celestin E
5:30p – 7:30p	Poster session & reception (featuring Sessions 013 – 023)	Storyville Hall

Workshops and Associated Meetings

Time	Event	Location
8:00a – 8:30a	Submitting a Dataset to GRIIDC	Imperial 9
10:00a – 10:30a	Submitting Cruise Data to GRIIDC	Imperial 9
12:00p – 2:00p	GoMRI Scholars Lunch (Closed)	Celestin B
12:15p – 1:15p	Evaluation of the Use of Chemical Dispersants in Oil Spill Response – A Report from the National Academies of Sciences, Engineering, and Medicine	Imperial 5 A/B
12:15p – 1:15p	How to Use Social Media to Meet Your Goals	Celestin G
12:30p – 1:30p	Update on the DWH Long-Term Data Management and Coordination	Imperial 5 C/D
3:30p – 4:00p	Organizing Data–Best Practices and GRIIDC Submission	Imperial 9
4:00p – 5:00p	Exploratory Meeting on Comparing Advances in Oil Slick Thickness	Imperial 5 C/D

Organismal Responses to Oil Exposure: From Individuals to Ecosystems

Wednesday, February 6, 8:30a – 12:00p, Celestin E

Andrew Esbaugh, University of Texas at Austin
Ed Mager, University of North Texas

Organismal responses are the fulcrum upon which ecosystems pivot between damaged and resilient following an environmental challenge. The DWH oil spill impacted a wide range of organisms in a multitude of ways, and it is crucial to understand the breadth of these organismal responses to appreciate the implications of the spill on ecosystem health. Environmental factors – such as hypoxia, temperature, and UV – as well as the predator-prey and conspecific interactions that govern ecological fitness can exacerbate or mitigate the outcomes of oil exposure on organismal performance. These findings have been crucial in filling the knowledge gaps in organismal adverse outcome pathways; an important management tool that traces the impact of an environmental contaminant from cellular impairment through ecosystem-level performance.

Time	Title	Presenter
8:30a – 8:45a	The Long-Term Impacts of the Deepwater Horizon Oil Spill on Bottlenose Dolphins and the Development of Advanced Diagnostic Tools to Better Characterize Injury and Recovery	Cynthia Smith, National Marine Mammal Foundation*
8:45a – 9:00a	What Is the Mechanism of Stress Response Impairment of Toadfish Affected during DWH Oil Exposure?	Matthew Alloy, University of Miami
9:00a – 9:15a	Impacts of Crude Oil Exposure on Ecological Performance in Fish	Alexis Khursigara, University of Texas at Austin
9:15a – 9:30a	Identifying Conserved Transcriptional Profiles among Different Fish Species following Exposure to Oil	Joseph Griffitt, University of Southern Mississippi*
9:30a – 9:45a	Lessons Learned from a Gulf-Wide Evaluation of Biomarker Expression in Red Snapper and Golden Tilefish	Kristina Deak, University of South Florida
9:45a – 10:00a	Exposure to Oil and Hypoxia Results in Alterations of Immune Transcriptional Patterns in Developing Sheepshead Minnows (*Cyprinodon variegatus*)	Maria Rodgers, University of Southern Mississippi
10:00a – 10:30a	Coffee Break	
10:30a – 10:45a	An Adverse Outcome Pathway Linking Oil Exposure to the Development of Vision in Fishes	Aaron Roberts, University of North Texas
10:45a – 11:00a	Deepwater Horizon Oil Alters the Cholesterol Biosynthetic Pathway in Exposed Larval Fish	Victoria McGruer, University of California Riverside
11:00a – 11:15a	Understanding Bioaccumulation of PAHs in Deep-Pelagic Organisms: A Decadal Time-Series Assessment in Gulf of Mexico Mesopelagic Fishes	Isabel Romero, University of South Florida
11:15a – 11:30a	Chronic Developmental and Reproductive Effects in Estuarine Species Following Acute Larval Exposures to Thin Oil Sheens and Ultraviolet Light	Marie DeLorenzo, NOAA
11:30a – 11:45a	The Effect of Oil Exposure on Reproduction and Development of Sheepshead Minnow (*Cyprinodon variegatus*) in Different Environmental Scenarios	Lindsay Jasperse, University of Connecticut
11:45a – 12:00p	Combined Exposure to Crude Oil and Hypoxia Leads to Transgenerational Epigenetic Inheritance in the Zebrafish	Naim Bautista, University of North Texas

*invited speaker

RESTORE Act Centers of Excellence Research Grant Programs – Gulf Research to Inform Policy and Management

Wednesday, February 6, 8:30a – 12:00p, Celestin F

Alyssa Dausman, The Water Institute of the Gulf
Melissa Baustian, The Water Institute of the Gulf
Elizabeth Fetherston-Resch, Florida RESTORE Act Centers of Excellence Program

This session will highlight the Centers of Excellence Research Grant Program's (CERGP) work that represents each of the Gulf Coast states, providing an overview on how each Center is addressing state needs through the five eligible RESTORE Act disciplines. Invited Center of Excellence speakers will then explore more deeply the science for decision making in each of their states. Since the host state for GOMOSES is Louisiana, staff from Louisiana's Center of Excellence (LA-COE) will provide updates on their work and what it means for coastal Louisiana, and speakers from Louisiana's Coastal Protection and Restoration Authority (LA-CPRA) will discuss coastal management goals and how research funded by LA-COE supports Louisiana's wider planning and implementation. The session will close with a panel of CERGP personnel talking about their vision for the future of intra- and inter-state research and management collaborations.

Time	Title	Presenter
8:30a – 8:45a	Using FLRACEP Funding to Meet Florida's Research Needs in the Eligible RESTORE Act Disciplines	Elizabeth Fetherston-Resch, Florida RESTORE Act Centers of Excellence Program
8:45a – 9:00a	Supporting Science and Restoration through the Mississippi Based RESTORE Act Center of Excellence (MBRACE)	Kelly Darnell, University of Southern Mississippi
9:00a – 9:15a	Texas OneGulf: Linking People and Environments for Resilient Coasts	Katya Wowk, Texas OneGulf Center of Excellence
9:15a – 9:30a	LA-COE: Funding Applied Research to Support the Implementation of Louisiana's Coastal Master Plan	Melissa Baustian, The Water Institute of the Gulf
9:30a – 9:45a	Moving on Up: Observations on Adaptive Migration in South Louisiana	Marla Nelson, University of New Orleans
9:45a – 10:00a	An Evaluation of Faulting in Holocene Mississippi River Delta Strata through the Merger of Deep 3-D and 2-D Seismic Data with Near Surface Imaging and Measurements of Vertical Motion	Mark Kulp, University of New Orleans
10:00a – 10:30a	Coffee Break	
10:30a – 10:45a	Research Relevant to Implementation of Louisiana's Coastal Master Plan	Angelina Freeman, Louisiana Coastal Restoration and Protection Authority
10:45a – 11:30a	CERGP Panel Discussion	

Human Risk Assessment Associated with Oil Spill Chemicals: Approaches and Analyses

Wednesday, February 6, 8:30a – 12:00p, Celestin H

Alesia Ferguson, North Carolina A&T University
Helena Solo-Gabriele, University of Miami
Kristina Mena, University of Texas Health Science Center School of Public Health

When a coastline is impacted by an oil spill, contamination – or even perceived contamination – can affect how we use and interact with beaches. Oil spills can also impact the ecology and appearance of an area, subsequently changing human usage patterns. It is important to understand how oil spills impact coastal areas (i.e., fate and transport dynamics, contamination level, chemical interaction, and degradation), how various populations use and rely on coastal areas, and how their activities are influenced by perturbations. This session focuses on understanding all aspects of the influence of oil spills on human behavior and human health.

Time	Title	Presenter
8:30a – 8:45a	Introduction	Kristina Mena, University of Texas Health Science Center School of Public Health*
8:45a – 9:00a	Tracking Toxic Oil Compounds Using Fractionation and Bioassays	Ahmad Alqassim, Tulane University
9:00a – 9:15a	Transcriptional Responses to Polycyclic Aromatic Hydrocarbons Found in Crude Oil in Murine Lung and Liver Cell Lines	Jeffrey Wickliffe, Tulane University
9:15a – 9:30a	Characterization of the Heavier PAH Especially Chrysene and Its Isomers in the Weathered MC 252 Oil and Their Response to Aryl Hydrocarbon Receptors	Deepa Pangeni, Louisiana State University
9:30a – 9:45a	*In Vitro* Oily Marine Aerosol Exposure Alters Human Airway Epithelial Function	Kristine Nishida, Johns Hopkins University
9:45a – 10:00a	Integrating the Results from a Fate and Transport Model in the Interpretation of Oil Spill Chemicals Concentration Distributions within Nearshore Environmental Samples	Larissa Montas, University of Miami
10:00a – 10:30a	Coffee Break	
10:30a – 10:45a	Exposures of Responders to Dispersants During the Deepwater Horizon Oil Spill: Were Response Workers Really at Risk?	Paul Nony, CTEH, LLC
10:45a – 11:00a	Protocol for Collecting Child Activity Data at Beach Sites	Helena Solo-Gabriele, University of Miami
11:00a – 11:15a	Beach Survey Results to Look at Macro-Activities for Children Exposures to OSCs	Emmanuel Obeng Gyasi, North Carolina A&T University
11:15a – 11:30a	Video-Translation Data to Look at Micro-Activities for Children during Beach Play	Alesia Ferguson, North Carolina A&T University
11:30a – 11:45a	Human Health Risk Assessment for Children Playing at Beaches following an Oil Spill	Tanu Altomare, University of Texas Health Science Center School of Public Health
11:45a – 12:00p	Discussion	

*invited speaker

Progressive Visualization Techniques for Optimized Data Synthesis and Effective Graphic Communication

Wednesday, February 6, 8:30a – 12:00p, Celestin A

Natalie Perlin, University of Miami
Dana Wetzel, Mote Marine Laboratory
Guillaume Novelli, University of Miami
Sherryl Gilbert, University of South Florida

Cutting edge research in the post-Deepwater Horizon years has produced vast amounts of information across many disciplines. Sharing and interpreting these data, however, is often limited by study-specific details or lab- and field-specific formats of data storage. Simplifying data translation between different agencies and teams using dynamic graphic communication can address this gap. The effectiveness of such communication is particularly essential for decision making and mitigation efforts and could provide critical assistance for damage assessment and strategic policy making in the event of an ongoing oil spill. Graphic communication can also help identify research gaps, synthesize data for cross-disciplinary exchange, set future research priorities, and benefit research and prognostic methods for different scientific groups.

Time	Title	Presenter
8:30a – 9:00a	Conveying Big, Complicated Ideas... Even on Small Screens	Annette deCharon, ODYSEA LLC*
9:00a – 9:15a	Data Acquisition, Analysis and Visualization of an Oyster's Gape Measurement System	M. Hasan, Jackson State University
9:15a – 9:30a	Event-Based Climatology of Tropical Cyclone Rainfall in Houston, Texas and Miami, Florida	Jill Trepanier, Louisiana State University
9:30a – 9:45a	Advances in Visualization of Deep-Sea Blowout Using Numerical Modeling and Observations	Claire Paris, University of Miami
9:45a – 10:00a	Predicting and Quantifying the Spatial Distribution of Fish Populations in the Gulf of Mexico Based on Habitat Characteristics	Jessi Ruiz, Arizona State University
10:00a – 10:30a	Coffee Break	
10:30a – 10:45a	Visualization Techniques for Big Data Storytelling: A C-IMAGE Task Group Exemplar	Dana Wetzel, Mote Marine Laboratory
10:45a – 11:00a	Integration and Visualization of Oil in the Environment Using Remote Sensing and Modeling Results in ERMA	George Graettinger, NOAA
11:00a – 11:15a	Visualization for Synthesis of Large Data Sets from the CARTHE LASER Experiment	Henry Chang, University of Delaware
11:15a – 11:30a	Visualized Genomics: Making Connections between Organismal and Population Response to Toxicant Exposure	David Portnoy, Texas A&M University – Corpus Christi
11:30a – 11:45a	Using Ensemble Modeling Approach for Probabilistic Estimates of Water Pollution from Oil Spills	Natalie Perlin, University of Miami
11:45a – 12:00p	Discussion	

invited speaker

Bridging Field and Laboratory Observations of the Fate and Effects of Weathered Oil to Inform Oil Spill Risk Assessment, Planning, and Response

Wednesday, February 6, 8:30a – 12:00p, Celestin C

Amanda Bess, Chevron
Brandi Echols, Environmental Toxicology Associates LLC
Osman Karatum, Exponent
Tim Nedwed, ExxonMobil Upstream Research

Oil weathering plays a critical role in the fate of oil in the environment, impacts on ecological receptors, and the effectiveness of oil spill response strategies. While a substantial body of literature exists on oil weathering processes, data gaps remain in understanding the rate at which these processes occur and which processes dominate the short- and long-term fate of oil in the marine environment. Data gaps in these areas may result in an over or under estimation of impacts to ecological receptors and the effectiveness of certain response strategies such as chemical dispersants, mechanical recovery, and shoreline cleanup. This session seeks to (1) connect field and laboratory observations to improve the application of this research to oil spill planning and response and inform future research, and (2) identify appropriate experimental or analytical tools to understand the fate and environmental toxicity of the products of oil weathering and degradation.

Time	Title	Presenter
8:30a – 9:00a	Challenges of Translating Findings from Lab-Based Oil Fate and Effects Studies to Conclusions Relevant to the Real World	Tim Nedwed, ExxonMobil Upstream Research
9:00a – 9:30a	Models, Lab Tests, and Empirical Field Observations and Data: Coexistence and Optimization	Paul Boehm, Exponent – Environmental*
9:30a – 9:45a	Marriage of Microcosm and Field Results: Molecular Understanding of the Weathering Processes and Fate of Macondo Well Oil by FT-ICR Mass Spectrometry	Huan Chen, National High Magnetic Field Laboratory
9:45a – 10:00a	Dispersant Effectiveness Testing of Aged Oil Conducted at Ohmsett	Douglas Mitchell, ExxonMobil Upstream Research
10:00a – 10:30a	Coffee Break	
10:30a – 11:00a	Improving Oil Toxicity Test Methods for Aquatic Organisms	Julie Adams, Queen's University*
11:00a – 11:15a	Dispersant Effectiveness Observations Relating to Oils that May Be Perceived to Be Non-Dispersible: Laboratory and Field-Based Experiences	Tom Coolbaugh, ExxonMobil Corporation
11:15a – 11:45a	Biodegradation Testing Protocols	Roger Prince, ExxonMobil Biomedical Sciences Inc.
11:45a – 12:00p	Panel Discussion	

*invited speaker

Towards Understanding the Physical, Photochemical, and Biological Processes that Determined the Fate and Effect of Oil and Oil-Dispersant Mixtures During the Deepwater Horizon Oil Spill

Wednesday, February 6, 8:30a – 5:30p, Celestin D

Edward Overton, Louisiana State University
Collin Ward, Woods Hole Oceanographic Institution
Uta Passow, University of California, Santa Barbara
Christoph Aeppli, Bigelow Laboratory for Ocean Sciences

Oil spills are complex events that adversely affect a wide variety of natural resources. Furthermore, processes such as sedimentation, dissolution, evaporation, biodegradation, and photo-oxidation alter the molecular composition of oil residues, leading to changes in its toxicity and routes of exposure. To fully understand the transport, weathering, and effects of spilled petroleum hydrocarbons in aquatic ecosystems, a wide variety of scientific disciplines is required. This results in varying views of the spills based on respective disciplinary perspectives and training. Synthesizing these views of oil spills through disciplinary perspectives and lenses into a cohesive understanding is challenging.

Time	Title	Presenter
8:30a – 9:00a	Towards Understanding the Fate of the DWH Spilled Oil: Multidisciplinary Scientists Need to Speak a Common Language	Edward Overton, Louisiana State University Uta Passow, University of California, Santa Barbara
9:00a – 9:30a	Lessons on Weathering and Partitioning of Aliphatic, Monocyclic, and Polycyclic Aromatic Hydrocarbons from the IXTOC I and Deepwater Horizon Blowouts	James Payne, Payne Environmental Consultants, Inc.*
9:30a – 9:45a	Synthesis of Photochemical Transformations of Oil in Marine Waters	Collin Ward, Woods Hole Oceanographic Institution
9:45a – 10:00a	How Toxic is Weathered Oil? The Potential Effects of Oil Photo-Products on Oil Toxicity	Christoph Aeppli, Bigelow Laboratory for Ocean Sciences
10:00a – 10:30a	Coffee Break	
10:30a – 10:45a	Impact of Sunlight on Emulsification of Oil from the Deepwater Horizon Spill	Matthew Tarr, University of New Orleans
10:45a – 11:00a	An Investigation into the Effects of Biodegradation vs. Photodegradation during Mesocosm Experiments	Derek Waggoner, Old Dominion University
11:00a – 11:15a	Detailed Identification and Molecular Characterization of Oxygen Compounds in Field Samples	Amy McKenna, Natonal High Magnetic Field Laboratory
11:15a – 11:30a	The Fate of Aromatic Hydrocarbons in Light Louisiana Sweet Crude Oil after Exposure to Natural Sunlight in Gulf of Mexico	Zhanfei Liu, University of Texas at Austin
11:30a – 11:45a	Bacterial Responses to Different Crude Oils under Varying Solar Exposure	Erika Headrick, University of West Florida

invited speaker

11:45a – 12:00p	Modeling Deepwater Horizon Oil Compositional Changes from Weathering and Dispersant Use - Implications for Water Column Exposure and Toxicity	Deborah French-McCay, RPS Ocean Science
12:00p – 2:00p	Lunch Break	
2:00p – 2:15p	Toward a Predictive Understanding of Biodegradation and Its Impacts on the Fate of Oil Deposited on the Northern Gulf of Mexico Coast	Joel Kostka, Georgia Institute of Technology
2:15p – 2:30p	Marine Oil Snow	Uta Passow, University of California, Santa Barbara
2:30p – 2:45p	MOSSFA: Understanding Ecosystem Impacts and Predictive Modeling	Antonietta Quigg, Texas A&M University at Galveston
2:45p – 3:00p	Fragmentation of Marine Oil Snow Due to Small-Scale Turbulence	Kai Ziervogel, University of New Hampshire
3:00p – 3:15p	Microscopic Evolution of Biofilm Formation in Dispersed Oil Droplet-Bacteria Agglomerates	Geoffrey Bothun, University of Rhode Island
3:15p – 3:30p	Modification and Characteristics of Two Particles for Oil-Particle Aggregates Formation	Wen Ji, New Jersey Institute of Technology
3:30p – 4:00p	Coffee Break	
4:00p – 4:15p	Investigating the Role of Photoheterotrophic Bacteria in Oil Degradation in Northern Gulf of Mexico Waters	Kaijun Lu, University of Texas at Austin
4:15p – 4:30p	Deep Sea in a Can: Influencing Factors of Crude Oil and Methane Biodegradation in the Sediment	Andreas Liese, Hamburg University of Technology
4:30p – 4:45p	Geochemical Analysis During Coupled Chemical Oxidation and Aerobic Biodegradation of Buried MC252 Oil across a Headlands Beach Profile	Vijaikrishnuh Elango, Louisiana State University
4:45p – 5:00p	Differences in the Compositional and Transcriptional Responses of Surface Water Marine Microbial Communities to Oil and Chemically Dispersed Oil	Shawn Doyle, Texas A&M University
5:00p – 5:15p	Formation of Oil Droplets from Underwater Blowouts: Role of Gas to Oil Ratio	Lin Zhao, New Jersey Institute of Technology
5:15p – 5:30p	Comprehensive Analytical Approaches to Spill Characterization: Case Studies and Examples	Jagoš Radović, University of Calgary

Connecting the Relevant Scientific Research and Findings to Actionable Response Decision Making

Wednesday, February 6, 2:00p – 5:30p, Celestin A

Steven Buschang, Texas General Land Office

Over the past eight years since the Macondo well blowout, much discussion has taken place on how to integrate academic scientific research into oil spill response. However, in practice, very few of the copious amount of studies have made their way into the decision-making process. Previous sessions have focused on the availability of scientific research and how to facilitate bringing the science to the decision makers. However, often overlooked is the paramount question of relevancy of the research to the response. Research that holds potential for use during a spill response must have a direct and tangible link for incorporation into operational decision making.

Time	Title	Presenter
2:00p – 2:15p	Leveraging Science and Academic Engagement during Oil Spills	Nancy Kinner, Coastal Response Research Center
2:15p – 2:30p	Understanding the Toxicity and Hazard of Dispersants to Aquatic Organisms within the Context of Operational Field Exposures	Adriana Bejarano, Research Planning, Inc.
2:30p – 2:45p	Evaluation of Potential Impacts of Dispersed and Undispersed Oil Spills on Fish Stocks	Victoria Broje, Shell
2:45p – 3:00p	Spreading and Sheening of Crude Oil in the Open Sea Results in Greater Dispersion than Occurs in Closed-System Dispersant Tests	Tim Nedwed, ExxonMobil Upstream Research
3:00p – 3:15p	Driving Science Forward to Support Decision Making in Oil Spill Response: The Multi-Partner Research Initiative	Kenneth Lee, Fisheries and Oceans Canada
3:15p – 3:30p	A Science-Based Approach to Developing a Sub-Regional Oil Spill Response Cooperation Arrangement for the Guyanas	Paul Schuler, Oil Spill Response Ltd.
3:30p – 4:00p	Coffee Break	
4:00p – 4:15p	Environmental Baseline Survey Data in Perdido and Bay of Campeche (Southern Gulf of Mexico)	Ana Marroquim, Inspire Environmental
4:15p – 4:30p	Assessing Extinction Risk of Gulf of Mexico Deep-Sea Fishes	Christi Linardich, Old Dominion University
4:30p – 4:45p	Physical and Biochemical Response to a Cold Front Using Floats	Lynn Shay, University of Miami
4:45p – 5:00p	Advancements in Satellite Detection of Marine Oil by Using Available Ground Validation	Ellen Ramirez, NOAA
5:00p – 5:15p	Multi-Dimensional Oil and Gas Leak Risk Mitigation and Community Resilience	YeongAe Heo, Case Western Reserve University
5:15p – 5:30p	Advanced Oil Spill Transport across the Bay/Coastal Boundary	Alexander Freddo, Texas A&M University
5:30p – 5:35p	Closing Remarks	COMDT Dana Tulis, U.S. Coast Guard

Identifying Gaps at the Intersection of Spiritual Displacement, Environmental Justice, and Community Power

Wednesday, February 6, 2:00p – 5:30p, Celestin H

Denise Lewis, University of Georgia
Desiree Seponski, University of Georgia
Sarah DeYoung, University of Georgia

This symposium examines environmental and social justice with an emphasis on the concept of spiritual displacement. In this session, we define spiritual displacement broadly to include fleeing from a homeland or remaining on the homeland but without sustainable resources for economic survival. Preliminary findings of a large-scale case study project by the session chairs serves as a starting point for the session content. A greater understanding of spiritual displacement will inform future interventions and encourage inclusion of psychosocial factors related to root causes and effects of vulnerability related to spiritual displacement. In particular, inclusion of spiritual displacement will highlight the link between mental health and environmental issues.

Time	Title	Presenter
2:00p – 2:15p	Time after Time: Multiple Traumas and the Path to Community Power	Roma Hanks, University of South Alabama*
2:15p – 2:30p	Who is a Community? Questioning Community Framing in the Gulf Coast	Andres Melendez Salgado, Tulane University
2:30p – 2:45p	Child, Family and Community Resilience Seven Years after the Deepwater Horizon Oil Spill: Qualitative Insights from Louisiana Parents	Ifeyinwa Davis, Louisiana State University
2:45p – 3:00p	Religious Context, Social Embeddedness, and Alcohol Misuse in the U.S. Gulf Coast Region	Vanessa Parks, Louisiana State University
3:00p – 3:15p	Perceptions of Sea-Level Rise, Well-Being, and Community in Cambodian and Laotian Americans Living in the Gulf Coast Region of the United States	Sarah DeYoung, University of Georgia*
3:15p – 3:30p	Building Bridges to Better Understand Fishing Communities	Thao Vu, Mississippi Coalition for Vietnamese-American Fisher Folks & Families
3:30p – 4:00p	Coffee Break	
4:00p – 4:15p	Resilience in Louisiana: A Longitudinal Study of Recovery from the Deepwater Horizon Spill	Jeremy Brooks, National Center for Disaster Preparedness at Columbia University
4:15p – 4:30p	Complex Coordination of Disaster Management: Potential Uses of GIS Analysis of EMS and Community Centers in Bayou La Batre, AL	Sarah Wraight, University of South Alabama
4:30p – 4:45p	Getting to the Table: Preliminary Results of Individual Interviews with EMS Managers in Bayou La Batre, AL	Brandon Moss, University of South Alabama
4:45p – 5:00p	Creating and Curating Effective Social Media Content to Build Community Resilience during Each Phase of the Disaster Cycle	Timothy Craft, Louisiana State University Health Sciences Center
5:00p – 5:15p	Measuring Disaster Preparedness at Different Social and Spatial Scales on the Mississippi Gulf Coast	David Cochran, University of Southern Mississippi
5:15p – 5:30p	Engaging Communities through Regional Surge Consortiums to Reduce Risk and Enhance Resiliency	Michael Hopkins, Lake Pontchartrain Basin Foundation

invited speaker

Modeling for Synthesis – Progress in Linking the Natural Sciences and Connecting to Politics, Economics, Health, Psychology, and Further

Wednesday, February 6, 2:00p – 5:30p, Celestin C

Helena Solo-Gabriele, University of Miami
Cecilie Mauritzen, Norwegian Meteorological Institute
Eric Chassignet, Florida State University
Elizabeth Fetherston-Resch, Florida Institute of Oceanography
Katya Wowk, Harte Research Institute

In order to answer questions like "How serious was the spill?", "What is the overall societal impact of an oil spill?", or "How can we be better prepared?" in quantitative terms and be able to express how certain we are about the answers we give, some sort of quantitative modelling is ultimately required at the full system level. This session highlights integrated modeling of natural and anthropogenic systems from various disciplines and scales. The session will also include discussions of how model-sharing platforms such as the Gulf of Mexico Community of Practice (ModCOP) can best support science for decision making and impact science to application for Gulf restoration and management.

Time	Title	Presenter
2:00p – 2:15p	Introductory Remarks	Cecilie Mauritzen, Norwegian Meteorological Institute Katya Wowk, Harte Research Institute
2:15p – 2:45p	Earth System Prediction: A Regional Example for the Gulf of Mexico	Antonio Busalacchi, University Corporation for Atmospheric Research*
2:45p – 3:00p	Development of Earth System Model Components to Quantify the Connectivity of Remote Ecosystems in the Gulf of Mexico	Villy Kourafalou, University of Miami
3:00p – 3:15p	Predicting the Impacts of Oil Spill-Related Fishery Closures on Fishery Revenues - A Spatially Explicit Approach	Igal Berenshtein, University of Miami
3:15p – 3:30p	Development of a Coupled Modeling System for Simulating Oil-Microbial-Sediment Interactions in the Ocean	Steven Morey, Florida A&M University
3:30p – 4:00p	Coffee Break	
4:00p – 4:15p	Gulf of Mexico Modeling Community of Practice: Connecting Modeling Capacities to Restoration and Management Needs	Gregory Steyer, U.S. Geological Survey
4:15p – 4:30p	Progress towards an Agent-Based Model that Explores the Effects of the Deepwater Horizon Oil Spill on Fish and Fishers in the Gulf of Mexico	Steven Saul, Arizona State University
4:30p – 4:45p	Integrating Oil Spill Trajectory Simulations to Guide Estimates of Human Exposure	Helena Solo-Gabriele, University of Miami
4:45p – 5:00p	The Holistic Individual Preparedness Model (HIPM): Accounting for Social, Health, and Technological Capacities across Disaster Response and Recovery	Ashley Ross, Texas A&M University at Galveston
5:00p – 5:30p	Panel Discussion: Modeling for Synthesis - What We Have Learned So Far Modeling for Synthesis - Where to Go from Here	Eric Chassignet, Florida State University Elizabeth Fetherston-Resch, Florida Institute of Oceanography

*invited speaker

Bridging Recent Advances in Marsh Ecology with the Future of Gulf of Mexico Ecosystems

Wednesday, February 6, 2:00p – 5:30p, Celestin F

Paola Lopez-Duarte, University of North Carolina at Charlotte
Charles Martin, University of Florida
Jill Olin, Michigan Technological University

This session focuses on long-term marsh studies, especially ones with insights into time scales over which the impact of several stressors persists. Over the course of these assessments, we have captured ecosystem-level responses to other stressors, including how these disturbances influence organisms and their habitats at many levels. Concomitant with these assessments is the generation of large spatial and temporal datasets documenting abiotic conditions such as temperature, salinity, dissolved oxygen, and nutrient fluxes. The overarching goal of this session is to link long-term, comprehensive assessments of Gulf of Mexico marsh ecology with impending and predicted environmental challenges, thereby providing scientists and management practitioners with a roadmap for future directives and studies that will contribute to the conservation of these coastal ecosystems for decades to come.

Time	Title	Presenter
2:00p – 2:15p	Testing the Effectiveness of Large-Scale Living Shoreline Projects at Restoring Fringing Marshes	Eric Sparks, Mississippi-Alabama Sea Grant Consortium*
2:15p – 2:30p	Spatial Patterns of Long-Term Marsh Edge Loss in Barataria Bay	Kendall Valentine, Louisiana State University
2:30p – 2:45p	Distribution and Recovery Trajectory of Macondo (Mississippi Canyon 252) Oil in Louisiana Coastal Wetlands	R. Eugene Turner, Louisiana State University
2:45p – 3:00p	Seasonal and Annual Variation in Allometry and Primary Production in *Spartina alterniflora*	Ryann Rossi, Louisiana Universities Marine Consortium
3:00p – 3:15p	Does Stranded Oil Slow the Recovery of Saltmarsh Macroinfauna?	John Fleeger, Louisiana State University
3:15p – 3:30p	Soil Microbial Community in Barataria Bay Salt Marshes, Louisiana, Eight Years after the Deepwater Horizon Oil Spill	Grace Cagle, Louisiana State University
3:30p – 4:00p	Coffee Break	
4:00p – 4:15p	Teasing Apart the Influences of Plant Type, Soil Properties, Inundation History, and Weathered Oil on Marsh Microbial Communities through Time	Annette Engel, University of Tennessee-Knoxville
4:15p – 4:30p	Meta-Analysis of Salt Marsh Vegetation Impacts and Recovery: Synthesis Following the Deepwater Horizon Oil Spill	Scott Zengel, RPI
4:30p – 4:45p	Predicting Disturbance-Driven Impact on Ecosystem Services in Coastal Wetlands in the Northern Gulf of Mexico	Nikaela Flournoy, University of Alabama
4:45p – 5:00p	Metabarcoding of Seaside Sparrow (*Ammospiza maritima*) Diet: Deepwater Horizon Oil Spill and Hurricane Isaac Altered Food Webs and Bird Resource Use	Allison Snider, Louisiana State University
5:00p – 5:15p	Why Were Saltmarsh Fish and Invertebrates So Resilient to the Deepwater Horizon Oil Spill?	Olaf Jensen, Rutgers University
5:15p – 5:30p	Effects of Oil on Marsh Ecosystems: An Evaluation of Approaches and Future Recommendations	Craig Osenberg, University of Georgia

*invited speaker

Out of the Blue: What Have We Learned about the Pelagic Gulf of Mexico, What Remains Unknown, and How Can We Use the Information?

Wednesday, February 6, 2:00p – 5:30p, Celestin E

Rosanna Milligan, Nova Southeastern University
Estrella Malca, University of Miami
Tracey Sutton, Nova Southeastern University

The pelagic GoM ecosystem is as complex as it is large. Once considered a discretely layered system, research in the pelagic GoM since the DWH oil spill has depicted a highly integrated system. Surface faunae dive to great depths to feed and deep-pelagic assemblages vertically migrate to near the surface each night. Dynamic physical oceanography interacts with vertical and lateral faunal movements to influence the retention and dispersal of assemblages in ways that are just beginning to be understood. The multidisciplinary research conducted in the pelagic GoM over the past nine years provides an unprecedented opportunity to examine the ecosystem holistically, allowing us to assess the impacts and recovery of this pelagic system.

Time	Title	Presenter
2:00p – 2:15p	Faunal Composition and Spatiotemporal Dynamics of Tuna (Family: Scombridae; Tribe: Thunnini) Early Life Stages in the Oceanic Gulf of Mexico	Nina Pruzinsky, Nova Southeastern University*
2:15p – 2:30p	Spatial Variability in Larval Growth between Two Spawning Grounds: Calibration and Analysis	Estrella Malca, University of Miami
2:30p – 2:45p	Why Tag a Captive Fish? Evaluating Spawning Behavior of Mahi-Mahi Using Pop-Up Satellite Archival Tags	Lela Schlenker, University of Miami
2:45p – 3:00p	An Innate UV-Protection System in Mahi-Mahi Embryos, Part 1: Laboratory Measurements of Embryonic Specific Gravity and Buoyancy	Christina Pasparakis, University of Miami
3:00p – 3:15p	An Innate UV-Protection System in Mahi-Mahi Embryos, Part 2: Modeling the Embryos' Vertical Distribution in the Gulf of Mexico	Robin Faillettaz, University of Miami
3:15p – 3:30p	Food Web Dynamics and Trophic Interactions Associated with Pelagic *Sargassum* Features in the Gulf of Mexico	Kevin Dillon, University of Southern Mississippi
3:30p – 4:00p	Coffee Break	
4:00p – 4:15p	Oceanic Fishes of the Gulf of Mexico: The DEEPEND Synthesis	Tracey Sutton, Nova Southeastern University
4:15p – 4:30p	Diel Vertical Migration Facilitates Connectivity between Mesopelagic Prey and Epipelagic Predatory Fishes	Steven Murawski, University of South Florida
4:30p – 4:45p	DEEPEND: Illuminating the Deep, Dark Sea: Generation and Assessment of a DNA Barcode Library for the Deep-Pelagic Fishes of the Northern Gulf of Mexico	Ron Eytan, Texas A&M University at Galveston
4:45p – 5:00p	Atlantic Bluefin Tuna (*Thunnus thynnus*) Maternal Isotopic Niche Estimated from Preflexion Larval Isotopic Signatures in the Gulf of Mexico	Raul Laiz-Carrion, Spanish Institute of Oceanography
5:00p – 5:15p	Constraining the Sources of Nitrogen Fueling Phytoplankton and Food Webs in the Gulf of Mexico Using Nitrogen Isotope Budgets	Angela Knapp, Florida State University
5:15p – 5:30p	Impacts of Match-Mismatch between Local and Remote Forcings on the Occurrence of Florida Red Tide	Yun Li, University of South Florida

Wednesday, February 6, 5:30p – 7:30p
Storyville Hall

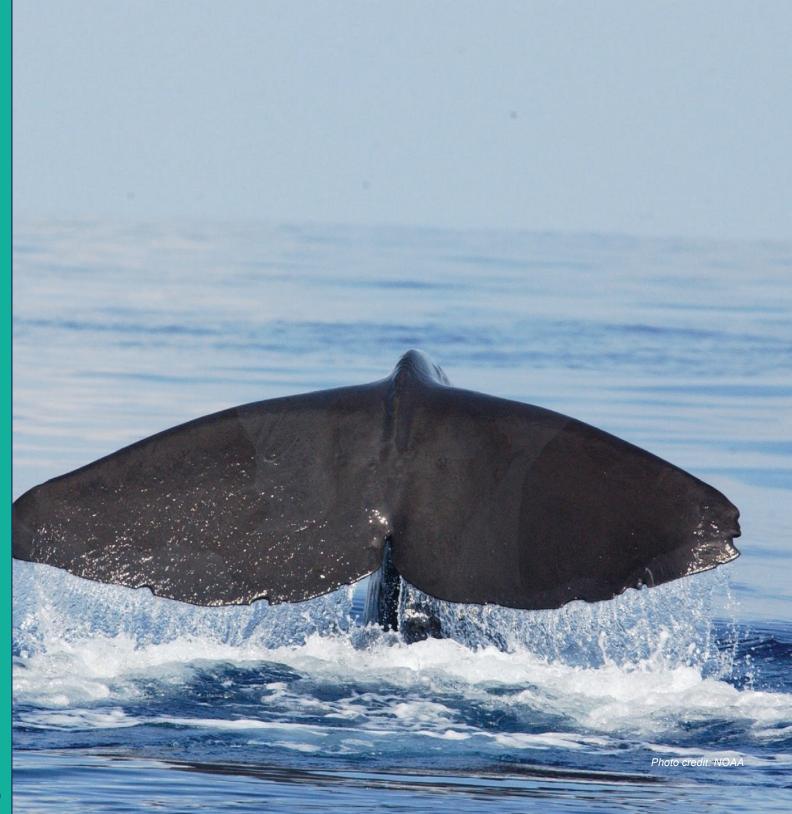| #	Title	Presenter
P-013		
73	A Review of Potential *In-Situ* Decanting Methods for Oil Spill Response	Bing Chen, Memorial University
74	Gran Tarajal Oil Spill Accident	Jesús Cisneros Aguirre, Universidad de Las Palmas de Gran Canaria
75	Quantitative Analysis of Tidal Eddies Affecting Transport of Spilled Oil at a Bay Entrance	Dongyu Feng, University of Texas at Austin
76	Response Driven Fundamental Science Questions: Coast Langmuir Circulations, Deep Transport Pathways and a Coral Mortality Event	Joseph Kuehl, University of Delaware
77	Oil Spill Risk Assessment and Vulnerability Analysis of Shoreline and Offshore Habitats of the Gulf of Mexico and the Caribbean Sea	Luz Saldana-Ruiz, Centro de Investigacion Cientifica y de Educacion Superior de Enseanda, Baja California (CICESE)
78	Oil Absorbent Boom	Christopher Smith, American Green Cross
79	Airborne and Satellite Remote Sensing Approaches and Platforms: Bridge the Gap between Available Technologies and Practices to Improve Community and Ecosystem Resilience	Alessandro Vagata, Fototerra Aerial Survey LLC
80	Cause Factor Analysis for Occurrence of Offshore Oil Spill Accidents	Xudong Ye, Memorial University of Newfoundland
P-014		
81	Racial and Economic Segregation, Disaster Exposure, and Self-Rated Health in the U.S. Gulf Coast	Margaret Weden, RAND Gulf States Policy Institute
P-016		
82	Fungal Pathogen Presence and Diversity of Four Salt Marsh Plants in Louisiana	Karolyn Agosto Shaw, Universidad Metropolitana
83	Establishing Inventories of Invertebrates in Areas with Different Salinity Levels in Tidal Marshes of Coastal Louisiana Using Different Trapping Methods	Benjamin Aker, Louisiana State University
84	Mercury Levels in Louisiana Marsh Birds and Small Mammals after the Deepwater Horizon Oil Spill, on the Two Sides of the Mississippi River	Andrea Bonisoli-Alquati, California State Polytechnic University, Pomona
85	Using Functional Marker Genes to Characterize Denitrifying Microbial Populations in Oil-Impacted Barrier Islands	Patrice Crawford, University of Alabama
86	What Causes Marsh Loss and Erosion within Northern Barataria Bay Louisiana: A Comparison of Measured and Modeled Erosion	Donald Deis, Atkins
87	Impacts of Deepwater Horizon Oil Spill Exposure on Soil Carbon in Louisiana Salt Marshes	Sean Graham, Nicholls State University
88	Mercury Biomagnification in Coastal Louisiana Food Webs Immediately Following the 2010 Deepwater Horizon Oil Spill	Katelyn Lamb, Louisiana State University
89	Diel Variation in Carbon Fluxes and Photosynthetic Efficiency in Salt Marsh Ecosystems	Herbert Leavitt, Eckerd College
90	Long-Term Response and Recovery of Coastal Salt Marshes Following the Deepwater Horizon Oil Spill	Qianxin Lin, Louisiana State University

#	Title	Presenter
91	Investigating the Influence of Gulf Ribbed Mussel Density on *Spartina alterniflora* Primary Production and Soil Nitrogen Cycling	Jordan Logarbo, Louisiana Universities Marine Consortium
92	Evaluating Fish Abundance and Composition in Restored vs. Natural Salt Marshes	Paola Lopez-Duarte, University of North Carolina at Charlotte
93	Effects of River Diversions, Restoration, and Salinity on Nekton Community Structure in Southeast Louisiana Marshes	Charles Martin, University of Florida
94	Compositional Changes of the Deepwater Horizon Oil Residues in Coastal Louisiana Marshes from 2010 to 2017	Buffy Meyer, Louisiana State University
95	Characterizing Energy Sources to the Saltmarsh Food Web along the Salinity Gradient	Jill Olin, Michigan Technological University
96	Trophic Niche of Seaside Sparrows (*Ammodramus maritimus*) and Marsh Rice Rat (*Oryzomys palustris*) in Louisiana Saltmarshes Affected by the 2010 Deepwater Horizon Oil Spill	Michael Polito, Louisiana State University
97	Microphytobenthos as Indicators of Oiling and Food Web Dynamics	Andrea Price, Louisiana State University
98	Investigation of Intertidal Eukaryote Biodiversity within Previously Oiled Sheared and Unsheared Coastal Island Margins in Barataria Bay	Patrick Rayle, Louisiana State University
99	A Large-Scale Salt Marsh Mesocosm Facility to Test the Effects of Disturbances on Wetland Ecosystem Processes	Brian Roberts, Louisiana Universities Marine Consortium
100	Spatial Patterns in Soil Biogeochemical Process Rates along a Wetland Salinity Gradient	Charles Schutte, Louisiana Universities Marine Consortium
101	The Effect of *Avicennia germinans* Expansion on Salt Marsh Nitrogen Cycling	Corianne Tatariw, University of Alabama
102	Microbial Community Structure and Diversity of *Avicennia germinans* and *Spartina alterniflora* Associated Sediments in Northern Gulf of Mexico Salt Marsh Habitats	Peter Whitehurst, University of Alabama
103	Invertebrate Community Composition and Organic Matter Decomposition in Created and Natural Brackish Marshes in Coastal Louisiana	Joseph Winston, Louisiana State University
P-017		
104	Genetic Discovery of a New Species of the Anglerfish Genus Ceratias (Lophiiformes: Ceratiidae) from the Gulf of Mexico	Andrea Bernard, Nova Southeastern University
105	The Population Genetic Dynamics of Three Deep-Sea Lanternfish Species (Family: Myctophidae) following the Deepwater Horizon Oil Spill	Andrea Bernard, Nova Southeastern University
106	Barreleyes and Spookfishes (Teleostei: Opisthoproctidae) in the Deep Pelagic Waters of the Northern Gulf of Mexico	Austin Boutilier, Florida Atlantic University
107	Roll Call: Community Composition of Zooplankton in the Gulf of Mexico	Stacy Calhoun, University of Louisiana at Lafayette
108	DEEPEND: Molecular Evidence for Environmental Change in the Deep-Pelagic of the Gulf of Mexico	Ron Eytan, Texas A&M University at Galveston
109	Diet Composition and Feeding Success of Atlantic Bluefin Tuna (*Thunnus thynnus*) Larvae of Varying Early Life History Stages in the Gulf of Mexico	Trika Gerard, NOAA Fisheries
110	Diet Composition of Atlantic Bumper Relative to Dissolved Oxygen Concentration and Fish Size	Cassandra Glaspie, Louisiana State University
111	Can Evolution in the Prey to Develop Toxicant Resistance Help Save Its Predator?	Istiaq Hossain, University of Louisiana at Lafayette
112	Pelagic Connectivity: The Flux and Composition of Sinking Material in the Oligotrophic GoM	Thomas Kelly, Florida State University
115	Looking into Atlantic Bluefin Tuna Connectivity in the Gulf of Mexico through Genetic Characterization of Early Life Stages	Raul Laiz-Carrion, Spanish Institute of Oceanography

#	Title	Presenter
116	Analysis of Microbial Communities Reflects Diel Vertical Migration in the Gulf of Mexico	Jose Lopez, Nova Southeastern University
117	A Synthesis of Lanternfish Ecology in the Gulf of Mexico	Rosanna Milligan, Nova Southeastern University
118	Atlantic Bluefin Tuna Larvae (*Thunnus thynnus*) Trophic Pathways Interannual Variability Based on Isotopic Signature Analyses in the Gulf of Mexico	Jose-Maria Quintanilla, Spanish Institute of Oceanography
119	Food Web Structure of Deep-Pelagic Micronekton Assemblages in the Gulf of Mexico	Travis Richards, Texas A&M University at Galveston
120	A Vertically-Resolved End-to-End Ecosystem Model to Study the Role of Vertical Exchange Processes within the Oceanic Gulf of Mexico Food Web: GoMex-ECOTRAN	Kelly Robinson, University of Louisiana
121	Biliary Polycyclic Aromatic Hydrocarbons (PAHs) in Pelagic Species in the Gulf of Mexico	Madison Schwaab, University of South Florida College
122	Estimates of Food Limitation Experienced by Coastal-Pelagic Fish Larvae in the Gulf of Mexico	Taylor Shropshire, Florida State University
123	On the Age and Growth of Deep-Pelagic Fishes of the Gulf of Mexico	Natalie Slayden, Nova Southeastern University
124	Spatial and Temporal Variability in *Sargassum*-Associated Juvenile Fish Assemblages in the Northern Gulf of Mexico	Courtney Stachowiak, University of Southern Mississippi
125	Comparison and Potential of Gap-Filling Algorithms for Satellite Data in the Gulf of Mexico	Andy Stock, Columbia University
126	Deep-Pelagic Ichthyoplankton in the Northern Gulf of Mexico: Vertical Distribution Patterns of Dominant Mesopelagic Families	Verena Wang, University of Southern Mississippi
127	Deep-Pelagic Ichthyoplankton in the Northern Gulf of Mexico: Analysis of Community Assemblage Structure	Verena Wang, University of Southern Mississippi
128	Phytoplankton Nutrient Uptake and Growth Dynamics in the Spawning Region of Atlantic Bluefin Tuna in the Oligotrophic Gulf of Mexico	Natalie Yingling, Florida State University
P-020		
129	System Architecture of an Oyster's Gape Measurement Apparatus	Kamal Ali, Jackson State University
130	Wind and Tide Effects on the Choctawhatchee Bay Plume at Destin Inlet, Florida	Cheryl Blain, U.S. Naval Research Laboratory
131	Microplankton Trophic Dynamics in the Northern Gulf of Mexico	Adam Boyette, University of Southern Mississippi
132	Impact of Wave Forcing on Sediment Resuspension and Transport in the Mississippi Sound and Bight	Mustafa Cambazoglu, University of Southern Mississippi
133	Fine-Scale Distributional Patterns of Gelatinous Zooplankton are Driven by Seasonal Environmental Changes in the Northern Gulf of Mexico Shelf	Luciano Chiaverano, University of Southern Mississippi
134	Defining the Mississippi River Plume with Numerical Drifters	Xiliang Diao, Texas A&M University
135	The Impact of Diurnal Winds on Exchange through Barrier Island Passes into the Mississippi Sound	Michael Dinniman, Old Dominion University
136	Shelf Bottom Dissolved Oxygen Conditions and Their Impacts on Adjacent Estuarine Systems in a Region of Fresh Water Influence, Mississippi Bight	Brian Dzwonkowski, University of South Alabama
137	The Effects of Tidal and Inertial Motions on Sediment Resuspension	Jordan Earls, University of Southern Mississippi
138	Plankton Thin Layer Mechanism of Formation and Cascading Ecological Impacts in the Northern Gulf of Mexico	Adam Greer, University of Southern Mississippi

#	Title	Presenter
139	Simulating Pathway Changes under a Barrier Island Removal Simulation	Laura Hode, University of Southern Mississippi
140	Connectivity of the Gulf of Mexico to the Mississippi Sound	Stephan Howden, University of Southern Mississippi
141	Gulf of Mexico Hypoxic Zone 'Omics Data Elucidate Active, Non-Canonical Methanotrophs That Have the Potential to Impact Hydrocarbon Fate in the Coastal Zone	Katie Howe, Florida State University
142	A Modeling Study of Tidal- and Wind-Driven Estuary-Shelf Exchange through a Narrow Tidal Inlet: The Barataria Pass, Louisiana	Haosheng Huang, Louisiana State University
143	Exchange Properties of the Louisiana Bight	Helga Huntley, University of Delaware
144	Variability of Submesoscale Frontal Eddies on the Texas-Louisiana Shelf	Daijiro Kobashi, Texas A&M University
145	Influence of the Deepwater Horizon Oil Spill on Primary Productivity in the Northern Gulf of Mexico	Yao Li, Texas A&M University
146	Seasonal Three-Dimensional Connectivity Pattern of the Deep-Water Coral *Callogorgia delta* in the Northern Gulf of Mexico	Guangpeng Liu, Georgia Institute of Technology
147	Short-Term and Seasonal Forecast of Harmful Algal Blooms on the Eastern Gulf of Mexico Coast	Yonggang Liu, University of South Florida
148	Modeling Pre-Settlement Condition of Oyster Larvae Sourced from Non-Indigenous Mississippi Reefs	Scott Milroy, University of Southern Mississippi
149	Constraining the Factors that Regulate Methane Oxidation in the Northern Gulf of Mexico Hypoxic Zone	Andy Montgomery, University of Georgia
150	Drogued and Undrogued Drifter Observations Help Improve Our Understanding of Oil Slick Transport across the Shelf in the Northern Gulf of Mexico	Guillaume Novelli, University of Miami
151	Suspended Sediment Transport in Mississippi Bight During Two Cold Front Events in Spring 2016	Stephan O'Brien, University of Southern Mississippi
152	Wind-Driven Mixing of the Mobile Bay Plume in the Northern Gulf of Mexico Shelf	Sabrina Parra, U.S. Naval Research Laboratory
153	Mississippi River Influence on the Chemistry and Biology of the Northern Gulf of Mexico	Nancy Rabalais, Louisiana State University
154	Mercury Concentrations and Fluxes in Sediment Cores from the Southern Gulf of Mexico	Ana-Carolina Ruiz-Fernández, Universidad Nacional Autónoma de México
155	Temporal and Spatial Abundance and Distribution of Epibenthic Macroinvertebrates in *Spartina alterniflora* Salt Marshes	Ronald Scheuermann, Louisiana Universities Marine Consortium
156	Laboratory Facility for Oil-Particle Interaction in Deep Langmuir Retention Zones	Carlowen Smith, University of South Florida
157	Biogeography of Phytoplankton Community Structure in the Northern Gulf of Mexico	Ajit Subramaniam, Lamont Doherty Earth Observatory
P-021		
158	Adhesion of *Marinobacter hydrocarbonoclasticus* to Surfactant-Decorated Dodecane Droplets	Narendra Dewangan, University of Houston
159	Assessment of the Change of Crude Oil Microdroplets Exposed to Different Bacteria Species and Consortia under Different Flow Velocities	Maryam Jalali-Mousavi, Texas A&M University - Corpus Christi
160	Variation of Sedimentary Biogenic Silica Deposition in the Southern Gulf of Mexico before and after the IXTOC-I Oil Spill (1979-80)	Jong Jin Lee, University of South Florida
161	Comparison of Exopolymeric Substances (EPS), Transparent Exopolymeric Particles (TEP), and Microgels in Mesocosms and Batch Experiments with Macondo Oil Water Accommodated Fraction	Peng Lin, Texas A&M University at Galveston

#	Title	Presenter
162	Effect of Flocculation on Suspended Cohesive Sediment in Langmuir Turbulence	Jinliang Liu, Louisiana State University
163	Identifying MOSSFA Sensitive Areas to Guide Future Oil Spill Response Strategies	AlberTinka Murk, Wageningen University
164	A Nanoscale Understanding of MOSSFA Events at the Oil-Water Interface	Marzhana Omarova, Tulane University
165	Effect of High Hydrostatic Pressure on the Activity of Hydrocarbon-Degrading Bacteria	Tianhan Xu, Scripps Institution of Oceanography
P-022		
166	Modelling the Atmospheric Transport and Concentration of Evaporated Oil from Marine Oil Spills	Cynthia Beegle-Krause, SINTEF Ocean
167	Development of the SOSim Model for Inferential Tracking of Sunken Oil	Cynthia Beegle-Krause, SINTEF Ocean
168	Inferential Forecasting of Submerged Oil Trajectory: A Predictive Bayesian Multi-Modal Gaussian Model	Cynthia Beegle-Krause, SINTEF Ocean
169	Invisible Oil Beyond the Deepwater Horizon Satellite Footprint	Igal Berenshtein, University of Miami
170	The Development of Offshore Environmental Sensitivity Indices Relevant to Deep Water Oil Well Blowouts in the Gulf of Mexico	Emily Chancellor, University of South Florida
171	Oil Droplet Transport in Rivers: An Eulerian RANS Approach Combined with a Lagrangian Particle Dispersion Model	Fangda Cui, New Jersey Institute of Technology
172	Oil Droplet Transport under a Deep-Water Plunging Breaker	Fangda Cui, New Jersey Institute of Technology
173	Observed vs. Simulated Oil Film Thickness during Deepwater Horizon Oil Spill	Knut-Frode Dagestad, Norwegian Meteorological Institute
174	Physical Processes Influencing the Sedimentation and Lateral Transport of MOSSFA in the NE Gulf of Mexico	Kendra Daly, University of South Florida
175	Fate of Oil Spill Droplets in Texas A&M Oil Spill Calculator Exposed to Random Displacement and Turbulent Diffusion Solution for Wind	Meghan Daniels, Texas A&M University
176	Oil Spill Propagation in the Presence of Freshwater Lenses	Cayla Dean, Nova Southeastern University
177	How Critical is the Choice of Droplet Size Probability Distribution Law for Oil Spill Modeling?	Robin Faillettaz, University of Miami
178	Progress and Challenges for Process-Based Modeling of Oil Spills from Meters to Basins	Baylor Fox-Kemper, Brown University
179	Estimation of the Removal Rate of Dispersed Oil via Scavenging by Phytoplankton Aggregates: An Operational Subroutine for Use in Oil Spill Models	Simone Francis, University of California, Santa Barbara
180	Improving Oil Fate and Transport Models with GCxGC Acquired Data: Enhanced Component Property Characterization over Time	Lindsey Gilman, Exponent
181	Flume Experiments to Model Transport of Sunken Oil	Melissa Gloekler, University of New Hampshire
182	Predicting Oil Transport in Oceanic Flows: Are Artificial Neural Networks Up to the Task?	Matthew Grossi, University of Miami
183	Application and Parameterization of a Sediment Flocculation Model for OMA Formation for a Gulf of Mexico Continental Shelf Site	Courtney Harris, Virginia Institute of Marine Science
184	Lagrangian Convergence along Fronts during the LASER Experiment	Angelique Haza, University of Miami
185	Mutual Dependence and Joint Intensification between Loop Current and Loop Current Frontal Eddies	Luna Hiron, University of Miami

#	Title	Presenter
186	Wind LiDAR Measurements and Numerical Modeling to Investigate Transport of Aerosolized Oil Droplets in the Marine Atmospheric Boundary Layer	Giacomo Iungo, University of Texas at Dallas
187	Mixing Characteristics in Four Aspirator Bottles with and without Vortex	Wen Ji, New Jersey Institute of Technology
188	The Vertical Distribution and Horizontal Dispersion of Buoyant Materials in the Ocean Surface Boundary Layer	JunHong Liang, Louisiana State University
189	Analysis of the Macondo Blowout Using BP Gulf Science Data	Claire Paris, University of Miami
190	Reynolds-Averaged Simulation of Langmuir Supercells in the Coastal Ocean	Anthony Perez, University of South Florida
191	Where the Oil Goes and How Much: Converting Lagrangian Trajectory Modeling Output to Eulerian Grid Products	Natalie Perlin, University of Miami
192	Seasonal Effects on Changes in the Physical Properties of Bitumen Blends and Conventional Crude Naturally Weathered on Water	Brian Robinson, Bedford Institute of Oceanography
193	Mixing of Sediment Particles and Oil Droplets by Langmuir Supercells	Andres Tejada-Martinez, University of South Florida
194	Settling Dynamics of Oil-Mineral-Microbial Interaction: Calibrating a 0D Floc Model Using Jar Experiments	Leiping Ye, University of Delaware
195	Modeling of Surface Oil Transport in the Modified COAWST	Yangxing Zheng, Florida State University
196	Coupling of Surface and Deep-Ocean Currents in the Gulf of Mexico	Yingli Zhu, University of South Florida
P-023		
197	Physics of Bubble Plumes from Natural Seeps	Soobum Bae, Texas A&M University
198	Mapping Spatial and Temporal Variation of Seafloor Organic Matter d14C and d13C in the Northern Gulf of Mexico following the Deepwater Horizon Event	Samantha Bosman, Florida State University
199	Molecular Characterization of Differentially Weathered Surface Oil from Taylor Energy Oil Spill	Huan Chen, National High Magnetic Field Laboratory
200	Regulation of Methanotrophy in Ocean Environments	Hannah Choi, University of Georgia
201	Characterization and Source Identification of Gas Seepage Observed at Mississippi Canyon Block 20 in the Gulf of Mexico	Michael Gaskins, TDI-Brooks International/B&B Labs
202	Modeling Gas Seep Bubbles Through the Continental Slope within Hydrate Stability Zone	In Ok Jun, Texas A&M University
203	Transport Pathways and Fate of Surface Oil Slicks around the MC20 Site	Matthieu Le Henaff, University of Miami
204	Probing the Genetic Capacity for Hydrocarbon Biodegradation in the GoM and Global Oceans	Sara Lincoln, Pennsylvania State University
205	Visual Quantification of Oil and Gas Bubbles from MC20	Carrie O'Reilly, Florida State University
206	Forensic Analytical Investigation of the Persistent Sheen Surfacing in Block MC20 GoM during 2017	Edward Overton, Louisiana State University
207	DNA Analysis of Surfactant Associated Bacteria in the Sea Surface Microlayer Collected in Oil Seeps and on a Coral Reef During SAR Satellite Overpasses	Georgia Parks, Nova Southeastern University
208	Taylor Energy's Efforts to be the Most Responsible, Responsible Party at MC20	William Pecue, Taylor Energy Company, LLC
209	Elevated Atmospheric Methane Concentrations at MC20	Mauricio Silva, Florida State University
210	A Multi-Sensor Remote Sensing Approach to Assess Oil Spill from the MC-20 Site	Shaojie Sun, University of South Florida

Photo credit: NOAA

Thursday, February 7

Time	Event	Location
7:30a – 12:00p	Registration and check-in open	Celestin Foyer
7:30a – 10:30a	Presentation upload open	Celestin Foyer
7:30a – 12:00p	Poster hall and exhibits open	Storyville Hall

Scientific Program Schedule

Starting at 7:30a	BREAKFAST	Storyville Hall
8:30a – 10:00a	Session 018	Celestin H
	Session 019	Celestin F
	Session 020	Celestin E
	Session 021	Celestin A
	Session 022	Celestin C
	Session 023	Celestin D
10:00a – 10:30a	BREAK	Storyville Hall
10:30a – 12:00p	Session 018	Celestin H
	Session 019	Celestin F
	Session 020	Celestin E
	Session 021	Celestin A
	Session 022	Celestin C
	Session 023	Celestin D
12:00p - 2:00p	LUNCH BREAK	

Closing Plenary Program Schedule

2:00p – 3:30p	James D. Watkins Awards Gulf of Mexico University Research Collaborative (GOMURC) Presentation of the Wes Tunnell Lifetime Recognition for Gulf Science and Conservation Conference Wrap Up	Celestin D/E

Workshops and Associated Meetings

10:00a – 10:30a	Submitting a Dataset to GRIIDC	Imperial 9
1:00p – 5:00p	Marsh Food Web Working Group (Closed)	Imperial 5 A/B

Cross-Disaster Lessons in Community Resilience: Deepwater Horizon and Other Disaster Events along the Gulf of Mexico

Thursday, February 7, 8:30a – 12:00p, Celestin H

Andrew Parker, RAND Gulf States Policy Institute
Melissa Finucane, RAND Corporation
Rajeev Ramchand, RAND Corporation

Communities along the Gulf of Mexico experience repeated exposure to technological-environmental disasters, with residents often learning from and adapting to multiple stressors over time. The research into human impacts of the Deepwater Horizon oil spill provides an opportunity to examine how community resilience to the economic, health, and social effects of the spill relate to ecosystem resilience, place characteristics, and histories of stressors over time. This session will explore how community resilience to Deepwater Horizon relates to subsequent catastrophic events, such as the devastating effects of Hurricane Harvey. Important to such inquiry will be contrasts between different types of disasters, such as those perceived to derive from natural or man-made causes. Presentations will seek to extract lessons learned with an eye towards how they can be applied to improving Gulf community resilience.

Time	Title	Presenter
8:30a – 8:45a	Cumulative Disaster Exposure, Gender and the PADM	Jessica Liddell, Tulane University
8:45a – 9:00a	What's Demographics Got to Do with It? Race, Sex, and Resilience in the Gulf Coast	Andres Melendez Salgado, Tulane University
9:00a – 9:15a	Disaster Exposure, Disaster Preparedness, and Individual Resilience in Three Gulf Coast Communities	Amy Lesen, Tulane University
9:15a – 9:30a	Work-Related Health and Safety Concerns and Oil-Spill Exposures among Florida and Mississippi Fisherman	Alberto Caban-Martinez, University of Miami
9:30a – 9:45a	Illness Anxiety and the Deepwater Horizon Oil Spill – Relationship to Actual and Perceived Risk from Exposure, and Health Service Utilization Post Disaster	Margaret Chamberlin, RAND Corporation
9:45a – 10:00a	Enhancing Disaster Resilience by Focusing on Stress-Associated Health Impacts in Preparation, Response, and Recovery Plans	Paul Sandifer, College of Charleston
10:00a – 10:30a	Coffee Break	
10:30a – 10:45a	Child Mental Health Outcomes following the Deepwater Horizon Oil Spill: A Multilevel Longitudinal Analysis of Spill Exposure and Health Care Context	Kathryn Keating, Louisiana State University
10:45a – 11:00a	Disastrous Consequences: Comparing Communities after a Human-Caused and a Natural Disaster	Jeremy Brooks, Columbia University
11:00a – 11:15a	Factors Influencing Relocation Consideration by Gulf Coast Residents for Hazard Risk Reduction	Abbey Hotard, Texas A&M University
11:15a – 11:30a	Evacuating for Disasters: Insights from a Longitudinal Survey	Rajeev Ramchand, RAND Corporation
11:30a – 11:45a	Third Time's A Charm: A Case Study in Longitudinal, Face-to-Face Disaster Survey Research Protocol in South Louisiana	Kathryn Keating, Louisiana State University
11:45a – 12:00p	How Risk-Related Worry Changes over Time: A Longitudinal Survey Across Multiple Disaster Events	Andrew Parker, RAND Gulf States Policy Institute

Clogged Pipelines: Examining Gaps in the Use of New Science for Fisheries Management and Restoration in the Gulf of Mexico

Thursday, February 7, 8:30a – 12:00p, Celestin F

Chris Robbins, Ocean Conservancy
Elizabeth Fetherston-Resch, Florida Institute of Oceanography

This targeted session looks at the integration of fisheries science into management and restoration processes in the Gulf of Mexico. Millions of dollars are spent on innovative fisheries-related research in the Gulf every year, yet only a small fraction of that work informs management of these important species. This is especially true for episodic and chronic impacts associated with oil spills, hypoxia, red tide events, and a changing environment. Speakers will consider barriers to incorporating a diverse array of research into fisheries science, management, and restoration efforts. The session will conclude with a discussion of what science we need for managing and restoring reef fish populations and a dialogue with the audience about filling key gaps in understanding how to turn this information into action.

Time	Title	Presenter
8:30a – 8:45a	Direct and Indirect Deepwater Horizon Oil Spill Impacts on Northern Gulf of Mexico Reef Fishes	William Patterson, University of Florida
8:45a – 9:00a	Fishery Management in the USA: An Overview of the Process and a Summary of Challenges and Opportunities	John Froeschke, Gulf of Mexico Fishery Management Council
9:00a – 9:15a	The Relationship of Fishermen to Science Used in Restoration and Fisheries Management: The Perspective of One For-Hire Captain from Texas	Capt. Shane Cantrell, Galveston Professional Boatmen's Association
9:15a – 9:30a	Relationships between Spawning Behaviour and Life History Traits in Gulf of Mexico Fishes: Implications for Vulnerability Assessments	Brad Erisman, University of Texas at Austin
9:30a – 9:45a	The Fisheries Science-for-Management Pipeline: Key Directions	Joseph Powers, Louisiana State University (Retired)
9:45a – 10:00a	Current Tools for Understanding and Supporting Fishing Community Resilience in the Gulf of Mexico	Marcus Drymon, Mississippi-Alabama Sea Grant Consortium
10:00a – 10:30a	Coffee Break	
10:30a – 10:45a	Depleted, Dubious, or Just Different? Using Data and Models to Better Understand How Ecosystem Change Will Impact Gulf of Mexico Fisheries	Michael Drexler, Ocean Conservancy
10:45a – 11:00a	Commercial Fishermen - Partners, Problem Solvers, and Pioneers	Eric Brazer, Gulf of Mexico Reef Fish Shareholders' Alliance
11:00a – 11:15a	The Gulf of Mexico Headboat Collaborative – A Fishermens' Solution to Improving Science and Management	Capt. Steve Tomeny, Steve Tomeny Charters
11:15a – 11:30a	Identifying Information Gaps for Key Marine Fish Species in the Gulf – Frameworks and Processes to Create a "Menu" of Science Needs for Funders	Libby Fetherston-Resch, Florida RESTORE Act Centers of Excellence Program
11:30a – 12:00p	Discussion	

Understanding the Shelf Ecosystem – A Critical Intermediary between Open Water and the Coast – By Combining In-Situ Measurements, Modeling, and Remote Sensing

Thursday, February 7, 8:30a – 12:00p, Celestin E

Mustafa Kemal Cambazoglu, University of Southern Mississippi
Adam Greer, University of Southern Mississippi
Virginie Sanial, University of Southern Mississippi

The continental shelf waters are productive and economically essential but physically and bio-geochemically complex. The northern Gulf of Mexico (nGOM) shelf, from Texas to Florida, is characterized by sharp spatio-temporal gradients in river inputs, benthic properties, and oceanographic conditions. The drivers and impacts of these gradients must be described and modeled to predict how the ecosystem may respond to an oil spill. Research on spatio-temporal variability of biogeochemical and physical processes involved in the dispersion of oil and dispersants on the nGOM continental shelf is necessary to improve response to future oil spills or releases of other pollutants. Therefore, it is critical to synthesize the collective research of oceanographic measurements, remote sensing, and ecosystem modeling.

Time	Title	Presenter
8:30a – 8:45a	Satellite Data Reveals Estuarine-Shelf and Shelf-Slope Exchange Processes and Biogeochemical Impacts Involving the Mississippi River Outflow	Nan Walker, Louisiana State University*
8:45a – 9:00a	Characterization of Offshore Pathways of Mississippi Waters under Eddy Influence: Observations and Modeling	Yannis Androulidakis, University of Miami
9:00a – 9:15a	Shelf Convergence and Transport near an Ebb Tidal Delta in the Mississippi Bight, Northern Gulf of Mexico	Steven Dykstra, Dauphin Island Sea Lab
9:15a – 9:30a	A Case Study of Inertial Oscillations and Diurnal Dynamics Offshore of Mobile Bay	Jeffrey Book, U.S. Naval Research Laboratory
9:30a – 9:45a	Vertical Structure of Ocean Surface Currents under High Winds from Massive Arrays of Drifters	John Lodise, University of Miami
9:45a – 10:00a	Satellite Remote Sensing of Phytoplankton Diagnostic Pigments in the Northern Gulf of Mexico	Andy Stock, Columbia University
10:00a – 10:30a	Coffee Break	
10:30a – 10:45a	Approaches and Challenges to Modeling Transport and Exchanges in the Northern Gulf of Mexico	Eileen Hofmann, Old Dominion University*
10:45a – 11:00a	Could Oil-Degrading Bacteria Have Assisted in the Formation of a Harmful Dinoflagellate Bloom after the Texas City "Y" Oil Spill in 2014?	Bum Soo Park, University of Texas Marine Science Institute
11:00a – 11:15a	Novel Observations of Positively Correlated Dissolved Organic Nitrogen and Dissolved Iron Concentrations in Gulf of Mexico Surface Waters	Angela Knapp, Florida State University*
11:15a – 11:30a	Hypoxia in the Mississippi Bight: Understanding Interactions of Circulation and Biogeochemistry in a Complex River-Dominated Coastal Ecosystem	Virginie Sanial, University of Southern Mississippi
11:30a – 11:45a	Using a Budget Analysis to Understand Variability in Modeled Bottom Hypoxia of the Texas Louisiana Shelf	Veronica Ruiz Xomchuk, Texas A&M University
11:45a – 12:00p	Modeling the Effects of Mississippi River Diversions on Hydrodynamics, Nutrient Transport Pathways and Hypoxia in the Northern Gulf of Mexico	Dubravko Justic, Louisiana State University

invited speaker

MOSSFA Events: Microbial Responses, Ecosystem Impacts, Predictions and High-Pressure in Navigating Future Deep Oil Spills in the Gulf of Mexico

Thursday, February 7, 8:30a – 12:00p, Celestin A

David Hollander, University of South Florida
Adrian Burd, University of Georgia
Antonietta Quigg, Texas A&M University
Peter Santschi, Texas A&M University at Galveston
Roseanne Ford, University of Virginia

Numerical modeling of marine oil snow sinking and transport, coupled to degradation rates and residence times of crude oil and oil derivatives, can be used to predict the occurrence and geographic distribution of MOSSFA events and the impacts to, and recovery rates of, benthic biological communities. The ability of experts to predict occurrences of MOSSFA events provides first responders with tools to inform decision makers on the application of specific surface oil remediation techniques. Although there may be trade-offs regarding consequences to vulnerable ecosystems, the prediction of MOSSFA events and the ecosystem impacts need consideration. This session aims to bridge the gap between the academic community and first responders considering the application of specific remediation techniques.

Time	Title	Presenter
8:30a – 8:45a	Sunlight-Induced Aggregation of Dissolved Organic Matter in Seawater: Role of Proteins in Biologically Mediated Processes	Luni Sun, Texas A&M University at Galveston
8:45a – 9:00a	Intracellular Mechanisms Contributing to Oil Resistance by the Green Alga, *Dunaliella tertiolecta*	Manoj Kamalanathan, Texas A&M University at Galveston
9:00a – 9:15a	Impacts of Crude Oil and Corexit on Extracellular Polymeric Substances: Their Production and Chemical Composition	Wei-Chun Chin, University of California, Merced
9:15a – 9:30a	How Oil is Transported via Exopolymeric Substances Mediated Marine Snow Formation	Chen Xu, Texas A&M University at Galveston
9:30a – 9:45a	Using Radiolabels as an Indicator to Understand the Interplay of Phytoplankton and Their Associated Bacteria in the Presence and Absence of Oil	Kathy Schwehr, Texas A&M University at Galveston
9:45a – 10:00a	Drastic Differences in Aggregation on a Rising Oil Droplet Caused by Different EPS	Andrew White, Texas A&M University - Corpus Christi
10:00a – 10:30a	Coffee Break	
10:30a – 10:45a	Comparison of Marine Snow Formations of Stationary and Exponentially Growing *Thalassiosira pseudonana* in Current and Future Ocean Conditions	Jennifer Genzer, Texas A&M University at Galveston
10:45a – 11:00a	Response of Natural Phytoplankton Communities Exposed to Crude Oil and Chemical Dispersants during a Mesocosm Experiment	Laura Bretherton, Mount Allison University
11:00a – 11:15a	Chemotactic Response of Marine Bacteria to Hydrocarbons: Experimental and Theoretical Analysis	Xueying Zhao, University of Virginia
11:15a – 11:30a	Modeling the Conditions Required for a MOSSFA Event	Tinna Jokulsdottir, University of Georgia
11:30a – 11:45a	Insights into the Adaptation of Hydrocarbon-Degrading Microbes to Life at High Pressure: The Role of Motility and Chemotaxis	Kelli Mullane, Scripps Institution of Oceanography
11:45a – 12:00p	Influence of Hydrodynamic Interactions and Chemotaxis on Accumulation of Bacteria Near Oil Drops	Nikhil Desai, Purdue University

Where the Oil Goes: Applications of Modeling for Oil Fate, Transport, Biological Effects, and Safety

Thursday, February 7, 8:30a – 12:00p, Celestin C

CJ Beegle-Krause, SINTEF Ocean
Christopher Barker, NOAA

This session will focus on recent developments in processes that can enhance prediction, as well as use cases for improved safety, decision support and/or assessment systems. Since the DWH oil spill, this conversation has widened to include large-scale modeling of oil mineral aggregates and oil marine snow. This session will focus on the variety of methodologies used, the application of new understandings to modeling systems, and algorithm development that could be applied to such systems. It is one thing to understand a given process and another to be able to restructure that understanding enough to provide guidance or assessment during a spill. Can new understanding lead us to better targeting of key data for prediction?

Time	Title	Presenter
8:30a – 8:45a	A Framework for Modeling Near-Surface Processes for Oil Spills	Christopher Barker, NOAA
8:45a – 9:00a	Constrained Scales in Forecasting the Gulf of Mexico Currents	Gregg Jacobs, U.S. Naval Research Laboratory
9:00a – 9:15a	Biased Wind Measurements in Estuarine Waters	Giulio Mariotti, Louisiana State University
9:15a – 9:30a	Wind LiDAR Measurements of Wind Turbulence and Aerosol Distribution in the Marine Atmospheric Boundary Layer	Yajat Pandya, University of Texas at Dallas
9:30a – 9:45a	Simulation of Surface Conditions and Plume Extent from Shallow Oil and Gas Spills	Anusha Dissanayake, RPS Ocean Science
9:45a – 10:00a	Revisiting the Deepwater Horizon Spill: Effects of Oil Droplet Size Distribution and River Fronts	Lars Robert Hole, Norwegian Meteorological Institute
10:00a – 10:30a	Coffee Break	
10:30a – 10:45a	From Droplet Generation in a Turbulent Release to Final Loss through Biodegradation - SINTEF Contributions to the DROPPS I, II, and III Programs	CJ Beegle-Krause, SINTEF Ocean
10:45a – 11:00a	Oil Spill Modeling in the U.S. Arctic for Potential Lease Sales and Oil Spill Response Plans	Zhen Li, BOEM
11:00a – 11:15a	High Resolution Simulations of Oil and Gas Blowouts	Nico Wienders, Florida State University
11:15a – 11:30a	Effect of Hypoxia on the Bacterial Degradation of Oil Microdroplets Traveling through a Seawater Column	George Kapellos, Massachusetts Institute of Technology
11:30a – 11:45a	Vertical Distribution and Shear Dispersion of Oil in a Wind and Wave-Driven Upper Ocean: Integrating Nonlocal Fluxes into a Langmuir Turbulence Model	Ramsey Harcourt, University of Washington
11:45a – 12:00p	Large-Eddy Simulations of Transport of Aerosolized Oil Droplets in Marine Atmospheric Boundary Layer	Ze Zhao, University of Houston

Understanding Processes Associated with Chronic Hydrocarbon Releases from Natural and Accidental Sources

Thursday, February 7, 8:30a – 12:00p, Celestin D

Binbin Wang, Texas A&M University
Ian MacDonald, Florida State University
Anusha Dissanayake, RPS, ASA
Daniela Di Iorio, University of Georgia
Lisa DiPinto, NOAA

Chronic releases of hydrocarbon oil and gas are important sources of oceanic petroleum fluids. Releases can occur at natural seeps, which are common in the GoM, or as accidental discharge from production or transport facilities. Understanding the behavior of oil and gas from natural seeps provides useful insights for predicting physical and biogeochemical processes in the interaction between petroleum fluids and ambient water during a subsea oil well blowout event. An important question is how different scales between natural seeps and subsea blowouts affect the fundamental parameters in these processes. The overall goal of this session is to address the research gaps and priorities on chronic hydrocarbon releases from both natural and accidental sources.

Time	Title	Presenter
8:30a – 8:45a	The Relative Importance of Submarine Seepage to Carbon Pools of the Gulf of Mexico	Jeff Chanton, Florida State University
8:45a – 9:00a	Deep-Sea *Callogorgia delta* Octocorals Closely Associated with Active Seepage Are in Significantly Better Condition than Colonies Found Far from Active Seepage	Rafaelina Cruz Reyes, Pennsylvania State University
9:00a – 9:15a	Temporal Variability of Vertical Upwelling of a Natural Hydrocarbon Seep and Its Connection to the Ocean Surface	Mahdi Razaz, University of Georgia
9:15a – 9:30a	Comparison between NETL High Pressure Water Tunnel Experiment and Numerical Modeling for Analysis of Natural Gas Bubble Behavior in the Ocean	Byungjin Kim, Texas A&M University
9:30a – 9:45a	Application of Physical, Chemical, Biological and Geological Constraints on Petroleum Seepage at MC20	David Valentine, University of California, Santa Barbara
9:45a – 10:00a	A Chemical Contaminants Assessment of the Sediments, Water, Oil, and Gas from the Mississippi Block 20 Site, Gulf of Mexico	Andrew Mason, NOAA
10:00a – 10:30a	Coffee Break	
10:30a – 10:45a	Insights from the Long-Term Taylor Energy Response at the Mississippi Canyon Block 20: A Review of Several Decades of Chemical Data	Christopher Reddy, Makepeace Environmental Solutions
10:45a – 11:00a	Calculation of Oil Spill Volumes Using Oil Thickness Classifications from Industry Standards: A Comparison of Bonn Agreement, NOAA, and ASTM-F2534	Oscar Garcia-Pineda, Water Mapping, LLC
11:00a – 11:15a	Two Decades of *In-Situ* Observation Guiding MC20 Response Operations: What We Have Learned and Why It Matters	Richard Camilli, Navistry Corp.
11:15a – 11:30a	Surface and ROV-Based Acoustic Mapping of the MC20 Oil and Gas Leak in the Northern Gulf of Mexico	Chris Taylor, NOAA
11:30a – 11:45a	Character and Dynamics of Surface Sheens at MC20	Wade Bryant, CK Associates
11:45a – 12:00p	Quantitative Imaging of Oil and Gas Bubbles Discharged at MC20	Ian MacDonald, Florida State University

Thursday, February 7, 2:00p – 3:30p, Celestin D/E

James D. Watkins Student Awards for Excellence in Research

Presented by Kristen Yarincik, Vice President and Director, Research and Education, Consortium for Ocean Leadership

Gulf of Mexico University Research Collaborative (GOMURC) Presentation of the Wes Tunnell Lifetime Recognition for Gulf Science and Conservation

The Gulf of Mexico University Research Collaborative (GOMURC) has recognized marine science and education leaders in the Gulf for many years. In 2017, the GOMURC Board decided to establish a regular recognition, honoring lifetime dedication and achievement in support of a healthy and sustainable Gulf of Mexico environment and economy. The Board further agreed to name this recognition to honor Dr. Wes Tunnell, who passed away in 2018.

Join us as Dr. Tunnell's friends and colleagues commemorate his contributions in advancing Gulf science and recognize the first recipient of the Wes Tunnell Lifetime Recognition for Gulf Science and Conservation, Dr. Christopher D'Elia, dean of the College of the Coast and Environment and professor at Louisiana State University. Presenting the award is GOMURC Chair, Dr. Kelly Lucas, director of the Thad Cochran Marine Aquaculture Center.

Speakers

Kristen Yarincik
Consortium for Ocean Leadership

Paul Montagna
Texas A&M University

Larry McKinney
Harte Research Institute

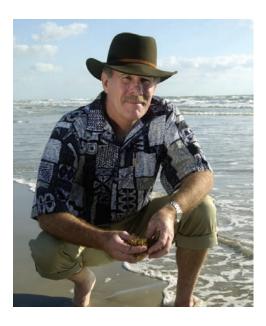**Kelly Lucas**
Thad Cochran Marine Aquaculture Center

Steven Murawski
University of South Florida

Christopher D'Elia
Louisiana State University
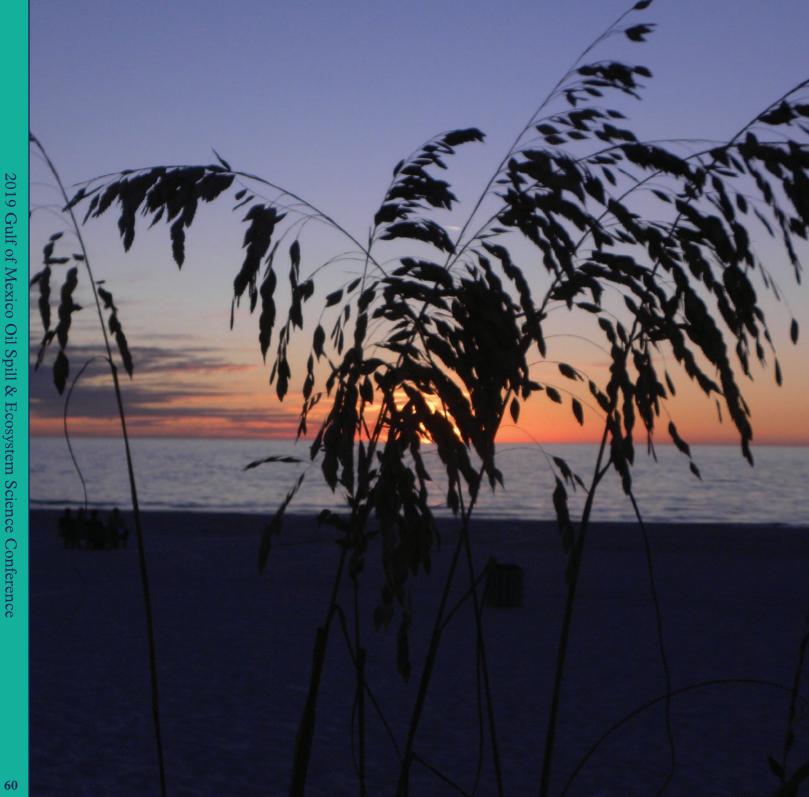
Dr. John Wesley "Wes" Tunnell, Jr.

Dr. John Wesley "Wes" Tunnell Jr. passed away on July 14, 2018, at the age of 73 after a long battle with cancer. Tunnell was a writer, editor, teacher, and prolific scientist who started and ended his four-decade career at Texas A&M University-Corpus Christi, where he was professor of biology in the life sciences department and endowed chair of biodiversity and conservation science at the Harte Research Institute for Gulf of Mexico Studies.

Tunnell was a marine ecologist and biologist focusing primarily on coastal and coral reef ecosystems. He was instrumental in the founding of the university's first research center, the Center for Coastal Studies, and he was later tapped as the first associate director of the new Harte Research Institute for Gulf of Mexico Studies.

Tunnell advised or co-advised 71 M.S. students, 7 Ph.D. students, and 4 post-doctoral research associates. For 32 years, he taught a coral reef ecology class, taking students on two-week field trips to Veracruz or the Mexican Caribbean as part of an international teaching and research program. This was one of 18 classes he taught over the course of his career.

Tunnell published 114 peer-reviewed manuscripts and 76 technical reports, 7 books, and received 154 research grants and contracts worth more than $20 million. He was also editor of two book series for Texas A&M University Press. He received numerous awards and served on many professional and community service boards and councils.

Student Presenter Support

Thank you to our sponsors for their generous support of student participation at the conference!

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The Gulf of Mexico University Research Collaborative (GOMURC) and Harte Research Institute provided **Student Presenter Awards**, which covered registration fees for students from GOMURC institutions who are making oral presentations. Congratulations to the student awardees and thank you for presenting your research at the 2019 GoMOSES Conference!

James D Watkins Student Award for Excellence in Research

The *James D. Watkins Student Awards for Excellence in Research* are given out annually to exceptional student presentations at the conference. Named after Admiral James D. Watkins, a hero in the ocean community, the Watkins Awards strive to recognize outstanding research in order to cultivate the next generation of scientists and to encourage excitement for presenting their work. Thank you to the award judges for their assistance in evaluating student presentations and to the Consortium for Ocean Leadership and the Gulf Research Program of the National Academies of Sciences, Engineering, and Medicine for sponsoring the 2019 awards.

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Thank You

We would like to thank the Executive Committee for its time and direction in planning the Conference.

Larry McKinney (Chair)
GOMURC
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RESTORE Centers of Excellence Research Grants Programs
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LaDon Swann
Sea Grant in the Gulf of Mexico
Evonne Tang
Gulf Research Program of the National Academies of Sciences, Engineering, and Medicine
Gregory Wilson
U.S. EPA
Dave Westerholm
NOAA
Denis Wiesenburg
GoMRI
Chuck Wilson
GoMRI

We also thank the staff of the Gulf of Mexico Research Initiative Management Team and our many volunteers, who have been working so diligently behind the scenes to ensure a successful conference.

Workshops & Associated Meetings

Descriptions are available on the conference website, online program planner, and mobile app.

Workshop on the Trophic Effects of Nitrogen Sources and Plankton Food-Web Dynamics for the Larvae of Atlantic Bluefin Tuna in the Gulf of Mexico (Closed)

Monday, February 4, 7:30a – 5:00p
Imperial 10

Oil Spill Preparedness and Response Workshop: Tradeoff Decisions in the Gulf of Mexico (Closed)

Monday, February 4, 7:30a – 5:30p
Celestin H

Monitoring Coordination Committee Meeting (Closed)

Monday, February 4, 9:00a – 12:00p
Celestin C

Responding to Future Deep Water Oil Spills in the Gulf of Mexico

Monday, February 4, 9:00a – 5:00p
Celestin B

BSEE/NOAA Cruise Workshop (Closed)

Monday, February 4, 9:00a – 5:00p
Celestin D

AIBS Science Policy Training (Closed)

Monday, February 4, 9:00a – 5:00p
Imperial 5 C/D

CONCORDE Synthesis Workshop (Closed)

Monday, February 4, 12:00p – 2:00p
Celestin G

Stakeholder Engagement to Identify Monitoring and Adaptive Management Data Needs for the Deepwater Horizon NRDA Open Ocean TIG's Restoration Program

Monday, February 4, 1:00p – 5:00p
Celestin A

Framing Indicators for an Ecosystem Assessment of Barataria Basin, LA

Monday, February 4, 1:00p – 5:00p
Celestin E

NOAA RESTORE Site Visit: Sargassum Project (Closed)

Monday, February 4, 2:00p – 5:00p
Celestin G

Gulf of Mexico Restoration and Science Program Coordination Forum (Closed)

Tuesday, February 5, 8:00a – 9:00a
Imperial 5 A/B

Organizing Data – Best Practices and GRIIDC Submission

Tuesday, February 5, 10:00a
Wednesday, February 6, 3:30p
Imperial 9

GRIIDC Advisory Board Meeting (Closed)

Tuesday, February 5, 12:00p – 2:00p
Celestin B

The Future of the U.S. Gulf Coast Coupled Natural-Human System: NASEM Report Overview, GRP Funding Opportunity, and Research Funders Discussion

Tuesday, February 5, 12:15p – 1:45p
Imperial 5 C/D

Submitting Cruise Data to GRIIDC

Tuesday, February 5, 3:30p
Wednesday, February 6, 10:00a
Imperial 9

What Do We Need to Know? Toward a Response Oil Assay

Tuesday, February 5, 5:30p – 6:30p
Imperial 5 C/D

Gulf of Mexico Data Tools Café

Tuesday, February 5, 5:30p – 7:30p
Storyville Hall

Submitting a Dataset to GRIIDC

Wednesday, February 6, 8:00a
Thursday, February 7, 10:00a
Imperial 9

GoMRI Scholars Lunch (Closed)

Wednesday, February 6, 12:00p – 2:00p
Celestin B

Evaluation of the Use of Chemical Dispersants in Oil Spill Response – A Report from the National Academies of Sciences, Engineering, and Medicine

Wednesday, February 6, 12:15p – 1:15p
Imperial 5 A/B

How to Use Social Media to Meet Your Goals

Wednesday, February 6, 12:15p – 1:15p
Celestin G

Update on the DWH Long-Term Data Management and Coordination

Wednesday, February 6, 12:30p – 1:30p
Imperial 5 C/D

Exploratory Meeting on Comparing Advances in Oil Slick Thickness

Wednesday, February 6, 4:00p – 5:00p
Imperial 5 C/D

Marsh Food Web Working Group (Closed)

Thursday, February 7, 1:00p – 5:00p
Imperial 5 A/B

Conference Exhibitors

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