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Distribution and concentrations of petroleum hydrocarbons associated with the BP/Deepwater Horizon Oil Spill, Gulf of Mexico ☆

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CO-AUTHOR BIO SUMMARIES

Paul W. Sammarco, PhD:

Dr. Sammarco is a Professor at the Louisiana Universities Marine Consortium (LUMCON), Chauvin, Louisiana, USA who has been conducting research on coral reef ecology for over 40 years, in the western Atlantic (Caribbean, Florida Keys, Gulf of Mexico, and the Bahamas) and on the Great Barrier Reef, Australia. He has over 235 publications and has served as an Assistant Professor at Clarkson University (NY), a senior research scientist at the Australian Institute of Marine Science, and Executive Director and a Research Professor at LUMCON. He also served as the Director of Environmental Research for the Resource Assessment Commission, Dept. of the Prime Minister and Cabinet, Australia for several years (PM's personal commission on key natural resource and environmental issues), providing Dr. Sammarco with intensive training and experience in government policy and decision making . He is currently Executive Director of the Association of Marine Laboratories of the Caribbean (AMLC), Chairman of the State Commission for the South Louisiana Wetlands Discovery Center (SLWDC), Associate Editor of *Aquatic Biology*. He was also an editor for *Marine Ecology Progress Series* and *Marine Biology* (Berlin) for 6 yrs each, consecutively. His Ph.D. is in ecology and evolution, but has conducted interdisciplinary work with numerous collaborators in biophysics; natural products chemistry and chemical ecology; geology – stable isotope geochemistry, bio-erosion, and reef growth processes; meteorology – climate change, sea surface temperatures, and prediction of coral bleaching; mathematics – analytical modeling; and oil spill remediation techniques.

With respect to projects, current and in the recent past, he has been conducting interdisciplinary studies examining coral communities associated with oil/gas platforms in the northern Gulf of Mexico in association with the U.S. Dept. of Interior Minerals Management Service/Bureau of Ocean Energy Management, Regulation, and Enforcement for over 10 yrs. He has determined sources and sinks of coral larvae and documented and quantified the expansion of coral populations throughout the northern Gulf via these platforms. He has also conducted deep-water reconnaissance on these

platforms and toppled structures used as artificial reefs ("Rigs-to-Reefs" program), and has determined the degree of genetic connectivity between populations of major coral species in this region. He has also developed statistical techniques by which to predict coral bleaching at intermediate SSTs, based on temperature trend data as well as techniques by which to hind-cast periods of seawater cooling through the microstructure of coral skeletons. His present studies include the effects of climate change and global warming on coral reefs at the cellular level within the coral hosts and their symbionts. These effects include changes in global climatic regions and predicted regions of coral extinction. Another current project is coral species that have invaded the Atlantic Ocean from the Pacific, as part of continuing studies on coral dispersal, recruitment processes, and reef-regeneration processes. He has also become heavily involved with environmental issues resulting from the BP/Deep Horizon oil spill in the Gulf of Mexico.

Wilma A. Subra

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Wilma Subra is president of Subra Company, providing technical assistance to Louisiana Environmental Action Network (LEAN) and citizens across the United States, as well as foreign countries, concerning environmental and human health impacts of toxins. She has a BS and MS in Microbiology and Chemistry from the University of Southwestern Louisiana (University of Louisiana at Lafayette). She has over 45 years of experience in sampling and chemical and microbiologic analysis of ground water and surface water resources, soil and sediments, air, flora and fauna and bio-monitoring. She has monitored the environmental and human health impacts of oil and gas drilling and production activities, waste treatment and disposal practices, chemical components of drilling fluids, pit construction and resulting contamination from pit operations, and environmental and human health impacts of shale development.

She has completed a seven-year term as Vice-Chair of the Environmental Protection Agency National Advisory Council for Environmental Policy and Technology (NACEPT), a five year term on the National Advisory Committee of the U. S. Representative to the Commission for Environmental Cooperation, a six year term on the EPA National Environmental Justice Advisory Council (NEJAC) where she served as a member of the Cumulative Risk and Impacts Working Group of the NEJAC Council, and chaired the NEJAC Gulf Coast Hurricanes Work Group. In 2011, she chaired the Environmental Protection Agency Technical Workshop for the Hydraulic Fracturing Study on Chemical and Analytical Methods. She participated in the EPA Shale Development Technical Roundtables on Water Acquisition, Chemical Mixing, and Well Injection in November 2012. In February 2013, she co-chaired the EPA Analytical Chemical Methods Workshop in February 2013.

Steve R. Kolian

Steve Kolian is the founder of EcoRigs, a non-profit organization. Mr. Kolian received his graduate degree from Tulane University in Environmental Science and is presently a senior scientist specializing in modeling industrial and natural resource systems. He grew up commercial fishing in the Gulf of Mexico and participated in a progressive sustainable fisheries project as a research scientist at Louisiana Marine Consortium (LUMCON) and has consulted for the offshore oil and gas industry. Mr. Kolian is a scientific diver, collecting water, sediment, and biota samples during the BP oil spill. He is interested in redeployment of retired oil and gas platforms for use in sustainable fisheries and renewable ocean energy applications.

Richard A.F. Warby, Ph.D.

Dr. Warby graduated from Natal University in South Africa with a B.Sc. degree in Chemistry and Biochemistry and a U.S. coursework Masters equivalent in Pure Chemistry. Dr. Warby got his M.Sc. degree in Soil Science from the University of Kwa-Zulu Natal in South Africa and his Ph.D. in Civil Engineering from Syracuse University in upstate New York. He also was a postdoctoral fellow at the University of Kwa-Zulu Natal looking at the remediation of rehabilitated mine soils. Dr. Warby's research focuses on the development of analytical techniques for environmental samples with complex matrices, and the development/application of QAQC procedures in environmental chemistry. Specifically, he is interested in how northeast forest soils and surface waters respond to changes in atmospheric deposition and climate. He is also developing various analytical methods including: a non-lethal method to sample and analyze avian adipose tissue for Persistent Organic Pollutants; detect, identify, and quantify TCE and its metabolites in genetically modified plants used in phytoremediation; and qualitatively identify VOCs emitted from plants.

Dr. Warby has 17 years of experience working in an analytical or synthetic chemistry laboratory and he worked as an environmental engineer specializing in sample collection and data analysis before returning to academia. Dr. Warby also owns an environmental consulting and education company, The Warby Group LLC, specializing in QAQC, data validation, and general environmental education for universities and private industry.

Jennifer L. Bouldin Ph.D.

Jennifer L. Bouldin, PhD is the Director of the Ecotoxicology Research Facility and Associate Professor of Environmental Biology at Arkansas State University. Her specialty is aquatic ecotoxicology and Quality Control/Quality Assurance. She received her PhD from Arkansas State University in 2004 and has directed the Ecotoxicology Research Facility since 2006. The ERF is a multiuse facility and her collaborations are interdisciplinary both within and outside of the University. She mentors numerous undergraduate and graduate researchers and her research includes watershed assessments, wetland biomonitoring, pesticide interactions and toxicology of nanoparticles. She currently serves on the editorial board of the Bulletin of Environmental Contamination and is active in STEM education outreach.

Scott Porter

Scott Porter is an invasive coral biologist at the Louisiana Universities Marine Consortium (LUMCON), Chauvin, Louisiana, USA. He has been conducting research on reef ecology for over 20 years in the northern Gulf of Mexico and received a B. S. in marine biology from Nicholls State in 1997. He is, also, the CEO of EcoLogic Environmental, 1992 through Present, and an independent environmental consultant and marine ecologist that specializes in shellfish and reef surveys on oyster grounds to determine oyster population dynamics. He is a certified oyster biologist for the Louisiana Department of Natural Resources (Oyster Lease Damage Review Board). He has completed Dept. of Health & Hospitals certification courses on Safe Shellfish Handling, Processing and Packaging Procedures (2004).

Mr. Porter performed independent research into oyster depuration and purging systems, which resulted in a patent for an oyster cleaning and flavor enhancement process that can result in a live oyster: U. S. Patent # 5,544,571. He also performs SCUBA dives on offshore oil and gas facilities to explore the underwater structures and retrieve reef samples from underwater jackets in order to determine the type of reefs colonizing specific zones. He has collected commercially viable Gorgonian and Scleractinian types of coral on offshore structures.

In 1987 he was a LUNCOM intern specializing in estuary ecology and studied marine vertebrate zoology. Shortly after the intern courses, he worked for two environmental laboratories in Louisiana and California specializing in the biological assessment of fresh water contaminants from industrial and municipal sources and all of the wet chemistry involved in these assessments. Later, he performed special training at Harbor Branch Oceanographic Institute and attended the first Aquaculture Business Planning and Management training course. He attended an advanced aquaculture filtration and tank design training course. In 2006, he discovered a new invasive coral species for the Atlantic basin - *Tubastraea micranthus* - and is currently concentrating on several other unique reef organisms that may be new to the Gulf of Mexico.

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