



# EXPEDITION TO GUAYMAS BASIN

SCIENCE SYMPOSIUM | 16 September 2019

Robert Paine Scripps Forum for Science, Society, and the Environment at Scripps Institution of Oceanography, UC San Diego

1:30–1:40pm **Welcome and Introduction: Putting the JR and IODP into context**  
*Holly Given, Executive Director of the IODP Science Support Office at Scripps*

1:40–2:05pm **Highlights of the key findings on Deep Sea Drilling Project (DSDP)  
Leg 64 in the Guaymas Basin**  
*Miriam Kastner, Leg 64 scientist, Scripps Institution of Oceanography*

2:05–2:50pm **Guaymas Basin: a key link in Southern California and  
Gulf of California tectonics**  
*Daniel Lizarralde, Exp. 385 co-chief scientist, WHOI; Joann Stock,  
Exp. 385 scientist, Caltech*

2:50–3:20pm **Coffee Break**

3:20–4:00pm **Who has switched on the oven? Guaymas Basin off-axis  
magmatism and its role as heat engine**  
*Christophe Galerne, Exp. 385 scientist, GEOMAR; Tobias W. Höfig,  
Exp. 385 project manager, TAMU*

4:00–4:45pm **Deep biosphere in Guaymas Basin and beyond: an introduction  
to International Ocean Discovery Program (IODP) Expedition 385**  
*Verena Heuer, Exp. 385 scientist, MARUM; Andreas Teske,  
Exp. 385 co-chief scientist, UNC*

4:45–5:00pm **Closing Remarks**

5:00–7:00pm **Reception**



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# SPEAKERS



**MIRIAM KASTNER** is a Distinguished Professor at Scripps Institution of Oceanography, UC San Diego. She received her PhD from Harvard University in 1970, and was a Post-Doctoral Fellow at The University of Chicago. Her research interests include the role and fluxes of fluids and solutes at plate boundaries focusing on subduction zones; chemical paleoceanography—developing, testing, and utilizing new paleoceanographic proxies; marine gas hydrates and implications for the C cycle; the geochemistry and diagenesis of marine sediments and authigenic minerals, e.g., barite, with implications for paleoceanography. She sailed on 13 scientific ocean drilling expeditions and numerous submersible diving cruises.

**DANIEL LIZARRALDE** is an Associate Scientist in Geology and Geophysics at Woods Hole Oceanographic Institution. He received his PhD from the MIT/WHOI Joint Program in 1997. Dan is a seismologist with research interests including lithospheric formation and evolution, processes at continental margins, terrestrial to marine fluxes, and gas hydrates. He has participated in 22 marine and onshore geophysical experiments, serving as Chief or Co-chief on 16 of those, including sailing as Chief Scientist on the 2002 Gulf of California experiment that provided the initial motivation for IODP Expedition 385.



**JOANN M. STOCK** is Professor of Geology and Geophysics at the California Institute of Technology. She received her PhD from the Massachusetts Institute of Technology in 1988. She worked at the USGS and at Harvard University before arriving at Caltech in 1992. Her research interests include tectonics, seismology, and physical volcanology, focusing on the geology of rifted plate margins including the Gulf of California. She sailed on 14 previous marine geophysical cruises. She has done extensive geological and geophysical studies of the northern Gulf region in collaboration with Mexican researchers.



**CHRISTOPHE Y. GALERNE** is a researcher at the Federal Institute for Geosciences and Natural Resources, Hanover, Germany. He received his PhD from the University of Oslo in 2009. He has held positions at the University of Bonn and in the Marine Geodynamics Department at GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany. He also worked as a consultant for a petroleum systems analysis company based in Switzerland. His main research focuses on volcanism in sedimentary basins, venting processes, and LIP volcanism. Christophe is currently working to reconstruct the thermal history of the Guaymas Basin and quantifying processes associated with off-axis magmatism.



**TOBIAS W. HÖFIG** is an Assistant Research Scientist at the IODP at Texas A&M, working as Staff Scientist at the JOIDES Resolution Science Operator. He received his PhD from Kiel University and GEOMAR Helmholtz Centre for Ocean Research Kiel in 2014. His previous work addressed mineral deposits at TU Bergakademie Freiberg. He is a petrologist, focusing on igneous and magmatic-hydrothermal processes to decipher the evolution of oceanic plate margins. Höfig served as the project manager of IODP Expedition 385, being his fourth seagoing scientific endeavor.



**VERENA HEUER** is Research Scientist at MARUM, Center for Marine Environmental Sciences, University of Bremen, Germany. She studied Geocology and Chemistry at the University of Bayreuth (DE), University of Canterbury (NZ) and EAWAG/ETH Zurich (CH), and received her PhD from the University of Bremen in 2003. The deep biosphere, and the interaction of geological, physical, chemical, and biological processes in the ocean floor are her central research interests. Her work builds on stable isotope geochemistry and on pristine samples from deep ocean-floor ecosystems. Verena has sailed on five IODP expeditions to date.



**ANDREAS P. TESKE** is a Professor of Marine Sciences at UNC Chapel Hill. He received his PhD from the University of Bremen and Max Planck Institute for Marine Microbiology in 1995, and worked at WHOI before arriving at UNC in 2002. His research interests include microbiology of marine sediments, hydrothermal vents, and hydrocarbon seeps, focusing on the Gulf of Mexico and on Guaymas Basin in the Gulf of California. Teske has sailed on the first dedicated ODP microbiology expedition, ODP Leg 201, and he has led or joined six research cruises in Guaymas Basin, with multiple Alvin dives to explore its hydrothermal seafloor landscapes.



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