Astrochemistry: Discoveries to Inform the Chemical Sciences and Engineering Communities -- A Workshop

Committee

Michael J. Fuller

Member

Michael J. Fuller is a Completions Fluids and Stimulation Advisor at Chevron. His current role in Chevron's Energy Technology Company includes applications, development, and troubleshooting of fluids and materials for productivity enhancement, acid stimulation, hydraulic fracturing, and drilling and completions, including sand control. His contributions span deepwater projects, unconventionals (including shale and tight-rock), and other challenging reservoir conditions. In his former roles at Schlumberger, his accomplishments comprised development, engineering, and troubleshooting of chemical products, fluids, and materials in upstream oil and gas disciplines. Dr. Fuller has multiple publications and patents in the areas of hydraulic fracturing of shale and conventional reservoirs; sand control applications and fluids; formation damage and response to upstream fluids; productivity enhancement; and general drilling and completions applications and fluids. Dr. Fuller received his PhD in chemistry from Northwestern University.

Franz M. Geiger

Member

Franz M. Geiger is a professor of chemistry at Northwestern University where he leads major collaborative research projects that involve experimental and computational methods to study the special role that surfaces and interfaces play in the world. He is a Fellow of the Alfred P. Sloan Foundation, the American Association for the Advancement of Science, and the Royal Society of Chemistry. Most recently, he is the recipient of the 2017 Friedrich Wilhelm Bessel Prize of the Alexander von Humboldt Foundation and the 2016 Faculty Diversity Award from Northwestern University's Graduate School. He serves as senior editor of the Journal of Physical Chemistry, as Chair-Elect of the newly established Experimental Physical Chemistry subdivision of the American Chemical Society Physical Chemistry Division, as a member of the Science Board of the Telluride Science Research Center, and as a member of the International Advisory Board of the Pacific Conference on Spectroscopy and Dynamics. Dr. Geiger received his PhD in chemistry from Georgetown University.

Eric Herbst

Member

Eric Herbst is a Commonwealth Professor of Chemistry at the University of Virginia, with courtesy appointments in astronomy and physics. He has held faculty positions at The College of William and Mary in chemistry, at Duke University in physics, and at The Ohio State University in physics and astronomy. His current major interest is in the chemistry that occurs as stars and planets form. Dr. Herbst is a Fellow of the American Physical Society and the Royal Society of Chemistry (RSC) and received the Centenary Prize in 2004 from the RSC. He has also received the Max Planck Research Prize and prizes from the French, Norwegian, and Czech physical chemical societies. He served as a scientific editor of The Astrophysical Journal from 1998-2007 and has recently become an associate editor of the new American Chemical Society journal Earth and Space Chemistry. Dr. Herbst received his PhD in physical chemistry from Harvard University.

Stefanie Milam

Member

Stefanie Milam works in the Astrochemistry Laboratory at the NASA Goddard Space Flight Center. She conducts high-resolution spectroscopic studies of evolved stars, star-forming regions, and the Galactic interstellar medium with an emphasis on isotopic fractionation and astrobiology of primitive materials. Specifically, her key research objective is to study the isotope composition of evolved stars to determine the nucleosynthetic processes that have taken place, chemical enrichments that might occur in the mass-loss process, and how the enrichment is distributed to the interstellar medium, star-forming regions, and planetary systems. She also has a laboratory dedicated to simulate interstellar/cometary/planetary ices and detect trace species by using the same techniques used for remote observations to help constrain the chemical complexity of the ices, the amount of processing that occurs, and interpret past and present data from missions that observe ice features. Dr. Milam maintains a renowned observational program with radio telescopes located around the world and with space-based observatories to observe comets. She was selected as the James Webb Space Telescope (JWST) Planetary Science Liaison and later as the Deputy Project Scientist for Planetary Science. Through those roles, she has helped to establish the next generation space telescope as a planetary science resource, engaged the community in future observations and preparations, and assisted the project to ensure the capabilities of the observatory are suitable for solar system observations. Dr. Milam received her PhD in chemistry from the University of Arizona.

Susanna Widicus Weaver

Member

Susanna Widicus Weaver is an associate professor and director of graduate studies in the chemistry department at Emory College of Arts and Sciences. Her research focuses on astrochemistry and molecular spectroscopy. She was the vice-chair of the American Chemical Society Astrochemistry subdivision in 2016 and has served on the editorial board for the Journal of Molecuar Spectroscopy. A few of her several awards include the Flygare Award in Molecular Spectroscopy, the National Science Foundation Career Award, and the Eugene M. Shoemaker Impact Cratering Award. Dr. Weaver received her PhD in chemistry from the California Institute of Technology.