

ASTROCHEMISTRY:

Discoveries to Inform the
Chemical Sciences & Engineering Communities

Organizing Committee Biographies

Donna G. Blackmond (NAE) is a professor of chemistry at the Scripps Research Institute in La Jolla, California. Previously, she served as a professor of chemical engineering at the University of Pittsburgh and as an associate director at Merck & Co., Inc., where she was responsible for establishing a new laboratory for research and development in the kinetics and catalysis of organic reactions. Dr. Blackmond also was a research group leader at the Max-Planck-Institut für Kohlenforschung in Mülheim an der Ruhr, Germany. She holds a Royal Society Wolfson Research Merit Award and received the Arthur C. Cope Scholar Award from the Organic Chemistry Division of the American Chemical Society (2005) and the Physical Organic Chemistry Award from the Royal Society of Chemistry (2009). Dr. Blackmond was elected to the National Academy of Engineering in 2013. She received her PhD in chemical engineering from Carnegie-Mellon University.

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, unconventional (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 both 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 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 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 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 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 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 Molecular 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.

Staff Biographies

Ellen Mantus is a Scholar and Director of Risk Assessment on the Board on Environmental Studies and Toxicology at the National Academies of Sciences, Engineering, and Medicine with over 20 years of experience in toxicology and risk assessment. She has served as the study director on numerous projects, including ones that have assessed the health implications of various chemical exposures, developed strategies for applying modern scientific approaches in toxicology and risk assessment, provided guidance to federal agencies on risk-based decision-making, and evaluated barriers to deployment of electric vehicles and associated charging infrastructure. Before joining the National Academies, Dr. Mantus was a project manager with ICF Consulting where she served as a primary reviewer for numerous toxicological studies and provided risk assessment and regulatory support on a wide array of projects. Dr. Mantus received a PhD in chemistry from Cornell University in Ithaca, NY.

Camly Tran joined the Board on Chemical Sciences and Technology at the National Academies of Sciences, Engineering, and Medicine in 2014 as a postdoctoral fellow after receiving her Ph.D. in chemistry from the Department of Chemistry at Brown University and is currently a Program Officer. She received various honors including the Division of Earth and Life Studies Award (2016), Elaine Chase Award for Leadership and Service (2015), American Chemical Society Global Research Exchanges Education Training Program (2014), and the Rhode Island NASA grant (2013). Dr. Tran completed the workshop summary and report of Mesoscale Chemistry (2015) and the Changing Landscape of Hydrocarbon Feedstocks for Chemical Production (2016). She has also supported the consensus studies: Spills of Diluted Bitumen from Pipelines: A Comparative Study of Environmental Fate, Effects, and Response (2016); Chemical Laboratory Safety and Security: A Guide to Developing Standard Operating Procedures (2016); Effective Chemistry Communication in Informal Environments (2016); and Communicating Chemistry: A Framework for Sharing Science: A Practical Evidence-Based Guide (2016). She is currently supporting activities on chemistries of the microbiomes, chemical weapons, and chemical precursors for improvised explosive devices.

Jarrett Nguyen is a Senior Program Assistant for the Board on Chemical Sciences and Technology. Jarrett began working for the National Academy of Sciences, Engineering, and Medicine in October of 2016. He graduated from James Madison University in May of 2015 with a Bachelor of Science degree in Geology and Environmental Science with a minor in Geographic Science.