Helium Economics Study Committee Members

Simon Bare (co-chair) is a Research Fellow at UOP LLC, a Honeywell Company. He leads UOP's characterization efforts in X-ray absorption spectroscopy, X-ray emission spectroscopy, and X-ray microtomography. Dr. Bare has over 25 years experience using synchrotron radiation-based techniques. He has collaborated with many groups worldwide and is UOP's spokesperson for the Synchrotron Catalysis Consortium at NSLS at Brookhaven National Lab and MRCAT at the Advanced Photon Source at Argonne National Lab.

Dr. Bare is an appointed member of the Basic Energy Sciences Advisory Committee, a member of the Photon Sources Directorate Scientific Advisory Committee at BNL, and a member of the SSRL Scientific Advisory Committee. He is also an elected member of the UEC at the Environmental and Molecular Sciences Laboratory at PNNL, and is a Fellow of the AAAS. Simon received his Ph.D. from the University of Liverpool in 1982. He was a postdoctoral researcher in the Laboratory of Atomic and Solid State Physics at Cornell University and then at Lawrence Berkeley National Laboratory before joining Dow Chemical Company in 1986.

Michael Lilly (co-chair) joined Sandia National Laboratories in 2000, and is currently a Distinguished Member of Technical Staff. He is a staff scientist at the DOE Center for Integrated Nanotechnologies (CINT) user facility which is jointly operated by Sandia National Labs and Los Alamos National Labs. Michael served as the CINT Thrust Leader and Partner Science Leader for the Nanoscale Electronics and Mechanics Thrust from 2006-2012. At Sandia, Dr. Lilly has studied electron transport in a variety of low dimensional electron systems. Topics have included exciton condensation in two-dimensional electron-hole bilayers, tunneling and Coulomb drag in one-dimensional double quantum wires, and semiconductor quantum computing. He received his Ph.D. at the University of Massachusetts Amherst and was a postdoc at Caltech.

Dr. Lilly has relied on helium throughout his research career. At Sandia, he operates several cryostats that require a continuous bath of liquid helium (wet systems) and others that use pulse tube coolers (dry systems). In 2012 Dr. Lilly wrote an internal report for Sandia management about the impact of short term helium shortages and longer term helium supply on Sandia research. Part of the presentation to Sandia management included a summary of the 2010 "Selling of the Nation's Helium Reserve". Dr. Lilly is a member of the Materials Research Society and the American Physical Society.

Janie Chermak is currently Professor and Chair of the Department of Economics at the University of New Mexico. Her research interests include applied microeconomics and natural resource and mineral economics with an emphasis on energy and water. Professor Chermak previously served on the National Academy of Science's National Research Council Committee on "Understanding the Impact of Selling the U.S. Helium Reserve" in 2008/09. She received her PhD in 1991 from the Colorado School of Mines.

Rod Eggert is currently a Professor in the Division of Economics and Business at the Colorado School of Mines and Deputy Director of the Critical Minerals Institute. He specializes in mineral and energy economics. Dr. Eggert received the 2010 Mineral Economics Award from the American Institute of Mining, Metallurgical, and Petroleum Engineers for contributions to resource development research and global mineral policy development. He received his PhD from Pennsylvania State University in 1983.

William Halperin is currently the John Evans Professor of Physics at Northwestern University. His research focuses on low temperature physics, mainly ^{3}He and superconductivity, NMR studies of high-temperature superconductors, and fluid transport in porous media. Professor Halperin is a Alfred B. Sloan Fellow, a Yamada Science Foundation Fellow, a Fellow of the American Physical Society and Chair-

Elect of APS's Division of Condensed Matter Physics. He received his PhD from Cornell University in 1975.

Scott Hannahs is currently the Associate Lab Director of Scientific Instrumentation and Operations at the National High Magnetic Field Laboratory in Tallahassee, Florida. His research centers on the interplay between superconductivity and magnetism, especially in the area of molecular conductors. Dr. Hannahs is a Fellow of the American Physical Society and a Distinguished University Scholar at Florida State University.

Sophia Hayes is currently an Associate Professor of Chemistry at Washington University in St. Louis. Her research interests are focused on the unique combination of optical irradiation with solid-state NMR studies. Her group aims to better understand the structure and properties of different types of inorganic systems, including semiconductors and other optically and electronically active materials. She received her PhD from UC-Santa Barbara in 1999 and completed postdoctoral fellowships at Lawrence Livermore National Laboratory and the University of Dortmund, Germany.

Michael Hendrich is currently a Professor of Chemistry at Carnegie Mellon University. His research focuses studying metalloenzymes and biomimetic complexes at the atomic level using various spectroscopic techniques. His group uses electron paramagnetic resonance spectroscopy (EPR), Mossbauer spectroscopies, and SQUID magnetization. He previously requested NSF allow him to use grant monies for a helium recycler and was denied. He found alternative funding to purchase one and is now saving a tremendous amount of money by recycling liquid helium. Michael received his PhD from University of Illinois in 1988.

Alan Hurd is currently the Executive Advisor at Los Alamos National Laboratory. He was previously a Franklin Fellow for the S&T Advisor to the Secretary of State. His research interests include using x-ray and neutron scattering to probe materials and connect structure and composition to performance. Alan is the current chair of the American Physical Society's Committee on International Scientific Affairs. He received his PhD from the University of Colorado - Boulder in 1981.

Mike Osofsky is currently a research physicist at the Naval Research Laboratory. His research focuses on the study of magnetic and electronic magneto-transport properties in a wide range of superconducting and magnetic materials. He has more than 100 publications from his work in superconductivity. Dr. Osofsky is a co-inventor on five patents for high temperature superconducting materials and devices. He received his PhD from the University of Illinois at Urbana-Champaign in 1987.

Cathy Tway is the R&D Director for the Inorganic Materials & Heterogeneous Catalysis Capability of Core Research & Development. Cathy joined Dow in 2007 as a Research Leader in the Inorganic Chemistry and Catalysis organization, where she developed and led the Core R&D efforts for catalyst discovery and also introduced several new inorganic materials research programs. Prior to joining Dow, Cathy held positions at Celanese, Solutia and AkzoNobel, holding both individual contributor and R&D leadership roles. Her industrial experience covers the entire catalyst project life cycle including front end identification and creation of new technologies, process scale-up, commercialization and plant support. Cathy earned PhD in Physical Inorganic Chemistry from the University of Nebraska.