

JoAnn Lighty
University of Utah

JoAnn S. Lighty is Professor of Chemical Engineering at the University of Utah. Currently, she is on-loan to the National Science Foundation (NSF) serving as director of the Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET) in the Directorate for Engineering. She joined the NSF in October 2013.

At the University of Utah, Lighty served in a variety of leadership capacities. She chaired the Department of Chemical Engineering from 2007 to 2013, during which time she established an Industrial Advisory Board, increased the number of undergraduate students, and completed a successful laboratory renovation campaign. As Associate Dean for Academic Affairs for the College of Engineering, a position she held from 1997 to 2004, Lighty implemented an advising program for undecided engineering majors and created a monthly team meeting for all advisors to exchange best practices; led the College through a successful ABET cycle utilizing EC 2000 for the first time; and was Chair of the New Engineering Building Committee and led the project through the Master Plan, Programming, and initial design. During the intervening years, Lighty directed the Institute for Combustion and Energy Studies (now the Institute for Clean and Secure Energy), serving as its inaugural director. From 1995 to 1997 she was Associate Dean for Outreach, establishing several outreach events, which are still in place today, and successfully leading the College in a transition from quarters to semesters.

Lighty's research has focused on the formation of fine particulate matter from combustion systems; the fate of mercury in fossil fuel combustion; carbon capture technologies; and the formation and oxidation of soot, accumulating over \$15 million of funding as PI or co-PI from NSF, DOE, and industry. Lighty has authored or co-authored more than 80 peer-reviewed publications (one with over 850 citations) and book chapters based on her research and expertise. She has over 170 conference presentations. While serving on committees for the Environmental Protection Agency and the National Research Council, she contributed to reports on important national issues including air quality, hazardous waste management, and water quality. She has served as the research advisor to 29 graduate students who have completed their degrees and currently has two PhD students.

Lighty has received numerous honors and recognitions, including educator awards from the Society of Women Engineers and the Utah Engineering Council; the University of Utah Diversity Award and Linda Amos Award for Distinguished Service; and the YWCA Outstanding Achievement Award for Science and Technology. She was elected to the grade of Fellow by the American Institute of Chemical Engineers and is an active member of AIChE, serving as a member of the Fellows Admission Committee and the Executive Board of the Programming Committee. She has also held leadership positions in the US Sections and the Western States Section of the Combustion Institute.

As division director of CBET, Lighty supports fundamental engineering research in areas such as advanced biomanufacturing, clean energy, sustainability, transport and reaction fundamentals, synthetic biology, and neuroengineering, with an annual budget of over \$180M. She has helped align CBET's participation in key priorities such as: BRAIN Initiative; Engineering Biology and Synthetic Biology; and Advanced Manufacturing, including Biomanufacturing for Cellular Therapies, Cyber Manufacturing and Process Intensification. Lighty also serves as a key architect for Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS), the NSF research and education initiative to create a FEW systems model to advance solutions that foster effective use of resources within the FEW system, and to support an integrative approach to building the future FEW workforce.

She received her Ph.D. and B.S. in chemical engineering from the University of Utah. She was appointed as an Assistant Professor of Chemical Engineering in 1988, promoted to Associate Professor in 1994, and promoted to Professor in 1999. In 2010 she spent six months at the University of Cambridge as a Bi-Fellow of Churchill College.