

# Chemical Engineering

seminar

Overview of Research Opportunities at NSF and in the Chemical,  
Bioengineering, Environmental and Transportation Systems Division

April 18th, 2016 at 10:30am in BDBB 105

## abstract

The National Science Foundation supports fundamental research and education in all the non-medical fields of science and engineering. In Fiscal Year 2014, it applied a budget of approximately \$7.3 billion to fund 10,800 awards after merit review of 49,000 proposals. CBET, with a budget of approximately \$178 million, funds proposals for a diverse range of engineering science including reactions, transport phenomena, process design and control, biotechnology, biomedical engineering, nanotechnology, and environmental sustainability. 75% of the CBET funding goes to Chemical Engineers, Mechanical Engineers, Bioengineers, and Civil/Environmental Engineers. In addition, it participates in many initiatives that cut across the Engineering Directorate and the other NSF directorates. This presentation will survey some of these opportunities as well as summarize present research trends within the division

## biosketch

JoAnn S. Lighty, director of the Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET) in the Directorate for Engineering (ENG), is also professor and former chair of the department of chemical engineering at the University of Utah. She joined the National Science Foundation (NSF) in October 2013. The division supports fundamental engineering research, in areas such as advanced biomanufacturing, clean energy, sustainability, transport and reaction fundamentals, synthetic biology, and neuroengineering,

## Dr. JoAnne Lighty

CBET Division Director  
National Science Foundation

*biosketch cont'd* with an annual budget of approximately \$178M. JoAnn 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.

At the University of Utah, Lighty served in a variety of leadership capacities. She led the department of chemical engineering from 2007 to 2013 and served as associate dean for academic affairs for the College of Engineering from 1997 to 2004. During the intervening years, Lighty directed the Institute for Combustion and Energy Studies (now the Institute for Clean and Secure Energy).

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 on the formation and oxidation of soot. She received her Ph.D. and B.S. in chemical engineering from the University of Utah. Lighty has authored or co-authored more than 70 publications and 6 book chapters based on her research and expertise. 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. Lighty has received numerous honors and recognitions, including educator awards from the Society of Women Engineers and the Utah Engineering Council, and election to Fellow by the American Institute of Chemical Engineers.

School for Engineering of Matter, Transport & Energy