

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Chemical Engineering in the 21st Century: Challenges and Opportunities

Health and Medicine Team Meeting

February 1, 2021

11:00 am – 1:00 pm ET

Join Link:

<https://nasem.zoom.us/j/93657530610?pwd=WS9sUGZ6cnpXRmRtRURwcXBFZCt5Zz09>

Open Session Agenda

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| 11:00 AM | Frugal Science for Global Health
<i>Dr. Saad Bhamla</i>
Georgia Institute of Technology |
| 11:30 AM | Imaging for Human Disease and Other Biomedical Applications
<i>Dr. Joe Zasadzinski</i>
University of Minnesota |
| 12:00 PM | Opportunities for Chemical Engineers to Contribute to Pharmaceutical Design and Manufacturing
<i>Dr. Donna Blackmond</i>
Scripps Research |
| 12:30 PM | Discussion |
| 1:00 PM | Adjourn Open Session |

Speaker Biographies

Donna G Blackmond is Professor of Chemistry and Department Chair at Scripps Research in La Jolla, California. She has held professorships in chemistry and in chemical engineering in the U.S., Germany, and the U.K.. She has worked in the pharmaceutical industry Merck & Co., Inc., where she pioneered a group involved in reaction engineering and process understanding. She holds joint US/UK citizenship. Dr. Blackmond has been recognized internationally for her research including awards from the British Royal Society, the German Max-Planck-Gesellschaft and the American Chemical Society. She is an elected member of the National Academy of Engineering, the American Academy of Arts and Sciences, and the German Academy of Sciences Leopoldina. She has been a Woodward Visiting Scholar at Harvard, a Miller Institute Research Fellow at Berkeley, an NSF Visiting Professor at Princeton, the Givaudan-Karrer Lecturer at University of Zürich, and the Gordon Lecturer at the University of Toronto. Dr. Blackmond's research focuses on mechanistic studies of organic reactions, including asymmetric catalysis. She pioneered the methodology of "Reaction Progress Kinetic Analysis (RPKA)" for fundamental mechanistic studies of complex organic reactions as well as for streamlining pharmaceutical process research. Dr. Blackmond is a Simons Investigator in the Simons Foundation Collaboration on the Origins of Life where she studies prebiotic chemistry and the origin of biological homochirality. She has been invited by the Swedish Academy of Sciences to speak at two Nobel Workshops, "On the Origin of Life" (2006) and "Chiral Matter" (2021). She received a PhD in Chemical Engineering from Carnegie-Mellon University.