

Keynote and Plenary Speakers

Tuesday, March 13, 2018

Jim Rekoske, Chief Technology Officer, UOP/Honeywell

8:15-9:30am – *Sponsored by:* **Refining & Petrochemical Processing**

Russell A. Ogle, Principal Engineer, Exponent

12:45-1:45pm – *Sponsored by:* **Process Safety and Occupational Health**

Christopher W. Jones, Professor and Associate Vice President for Research, Georgia Tech

12:45-1:45pm – *Sponsored by:* **Catalysis & Reaction Engineering**

Wednesday, March 14, 2018

John A. Rodgers, Professor, Northwestern University

8:15-9:30am – *Sponsored by:* **Biomedical, Pharmaceutical & Nano-Engineering**

Thomas Foust, Director, National Bioenergy Center, NREL

8:15-9:30am – *Sponsored by:* **Energy and Sustainability**

Kimberly Grey, Professor and Chair, Civil and Environmental Engineering, Northwestern University

12:45-1:45pm – *Sponsored by:* **Environmental Compliance & Remediation**

Doraiswami Ramkrishna, Distinguished Professor, Purdue University

6:30-7:30pm – *Sponsored by:* **Process Engineering, Modeling, Optimization & Control and Fluid Properties, Fluid Dynamics & Transport Phenomena and Process Engineering, Modeling, Optimization & Control**

Speaker Biographies

Tuesday Morning Keynote: 8:15 AM March 13, 2018



Jim Rekoske, Chief Technology Officer, UOP/Honeywell

Presentation Title (tentative): **Light Hydrocarbon Conversion Chemistry Challenges in an Era of Abundant Supply of Raw Material**

Biographical Sketch: Jim Rekoske is Vice President and Chief Technology Officer at UOP Honeywell. In this role, he is responsible for the entire technology organization, ranging from basic and applied research on new materials, catalysts, membranes and adsorbents through to process development, scale-up and commercialization. Previously, Jim served as Technical Director for Petrochemical Catalysts, Director of Technology for Universal Pharma Technologies and Vice President & General Manager of UOP's Renewable Energy & Chemicals business unit. Immediately prior, he was the Global Business Director for UOP's petrochemical business segment. Jim was awarded the 2010 Herman Pines Award from the Chicago Catalysis Club. He is a member of the advisory boards for the C3Bio Center of Excellence at Purdue University, the School of Chemical Engineering at Purdue University, and the College of Engineering at the University of Wisconsin-Madison. Jim earned his BS and MS degrees in chemical engineering at the University of Wisconsin and his PhD in chemical engineering from the University of Delaware. He also earned an MBA from the Booth School of Business at the University of Chicago.

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Tuesday Afternoon Plenary Session I: 12:45 PM February 28, 2017



Russell A. Ogle, Principal Engineer, Exponent

Presentation Title (tentative): **Dust Explosion Dynamics: Combustion Theory as a Bridge to Better Safety Management**

Biographical Sketch: Dr. Russell Ogle is a Principal Engineer and the Practice Director for Thermal Sciences at Exponent. He specializes in the scientific investigation and prevention of complex industrial accidents and catastrophic fires and explosions. He received his B.S in Chemical Engineering from Purdue University and a Ph.D. in Chemical Engineering from the University of Iowa. He has 30 years of industrial experience working in fire, explosion, and chemical safety. Dr. Ogle is a licensed professional engineer, a certified safety professional, and a certified fire and explosion investigator. His new book, "Dust Explosion Dynamics," is an introduction to the combustion science of dust explosions and fires

Tuesday Afternoon Plenary Session II: 12:45 PM March 13, 2018



Christopher W. Jones, Professor and Associate Vice President for Research, Georgia Tech.

Presentation Title (tentative): **Amine-Modified Silicates as CO₂ Sorbents and Catalysts**

Biographical Sketch Professor Jones is the Love Family Professor of Chemical & Biomolecular Engineering and Associate Vice President for Research. Dr. Jones leads a research group that works in the broad areas of materials, catalysis and adsorption. Since joining Georgia Tech, he has been recognized with a number of awards for his research and teaching. The American Chemical Society recognized his catalysis research with the Ipatieff Prize in 2010, followed by the North American Catalysis Society with the Paul H. Emmett Award in Fundamental Catalysis in 2013. In 2016, he was recognized by the AIChE for his work in catalysis and CO₂ capture with the Andreas Acrivos Award for Professional Progress. Dr. Jones is the founding Editor-in-Chief of the new journal, ACS Catalysis, which was recognized with the 2012 Prose Award as the Best New Journal in Science, Technology or Medicine, by the

American Association of Publishers. As Associate Vice-President for Research, Jones is responsible for leading and managing interdisciplinary research activities across six colleges, the Georgia Tech Research Institute, and the Enterprise Innovation Institute.

Wednesday Morning Keynote: 8:15 AM March 1, 2017



John A. Rodgers, Professor, Northwestern University

Presentation Title (tentative): **Microfluidic Systems for the Skin**

Biographical Sketch: Professor John A. Rogers obtained BA and BS degrees in chemistry and in physics from the University of Texas, Austin, in 1989. From MIT, he received SM degrees in physics and in chemistry in 1992 and the PhD degree in physical chemistry in 1995. From 1995 to 1997, Rogers was a Junior Fellow in the Harvard University Society of Fellows. He joined Bell Laboratories as a Member of Technical Staff in the Condensed Matter Physics Research Department in 1997, and served as Director of this department from the end of 2000 to 2002. He then spent thirteen years on the faculty at University of Illinois, most recently as the Swanlund Chair Professor and Director of the Seitz Materials Research Laboratory. In 2016, he joined Northwestern University as the Louis Simpson and Kimberly Querrey Professor of Materials Science and Engineering, Biomedical Engineering and Medicine, with

affiliate appointments in Mechanical Engineering, Electrical and Computer Engineering and Chemistry. He serves as director of the newly endowed Center on Bio-Integrated Electronics.

His research has been recognized by many awards including a MacArthur Fellowship (2009), the Lemelson-MIT Prize (2011) and the Smithsonian Award for American Ingenuity in the Physical Sciences (2013). He is a member of the National Academy of Engineering, the National Academy of Sciences, the National Academy of Inventors and the American Academy of Arts and Sciences.

Wednesday Afternoon Plenary Session I: 12:45 PM March 14, 2018



Thomas Foust, Director, National Bioenergy Center, NREL

Presentation Title (tentative): **Future Scenarios for Renewable Transportation Fuels in a Rapidly Changing Transportation Industry**

Biographical Sketch: Dr. Thomas Foust is the Director of the National Renewable Energy Laboratory's National Bioenergy Center (NBC), a world leading organization of approximately 200 engineering and scientific staff performing cutting edge work to develop cost effective, environmentally sustainable technology for producing transportation fuels and products from biomass by delivering innovative, cost-effective biofuels and bio-products solutions. Dr. Foust is a comprehensive expert in the clean energy area with a specialty in bioenergy with over 25 years of R&D and R&D management experience. His areas of expertise in bioenergy include feedstock production, biomass conversion technologies to fuels and products and advantaged uses of biofuels and bio-products.

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Additionally, he has worked extensively in environmental and societal sustainability issues associated with clean energy. He has over 100 publications in the clean energy field covering numerous aspects of R&D, techno-economic analysis and environmental sustainability. Dr. Foust has a Ph.D. in Mechanical Engineering from the University of Idaho, a M.S. in Mechanical Engineering from the Johns Hopkins University, and a B.S. in Mechanical Engineering from the Pennsylvania State University. He is a licensed Professional Engineer..

Wednesday Afternoon Plenary Session II: 12:45 PM March 14, 2018



Kimberly Grey, Professor and Chair, Civil and Environmental Engineering, Northwestern University

Presentation Title (tentative): Photo-catalysis and Environmental Applications

Biographical Sketch: Gray's areas of expertise are environmental catalysis and physicochemical processes in natural and engineered environmental systems with particular focus on energy and urban sustainability applications. She studies the synthesis, characterization and performance of photo-active materials, principally TiO₂-based nanocomposites for solar fuel production and water/air treatment. Work in her group also involves the investigation of chemical fate in natural systems. She probes the role of periphyton (algal biofilms) in contaminant accumulation in stream sediments and in denitrification in wetlands. She studies the ways in which detailed understanding of ecological relationships (periphyton structure, dynamic food web descriptions) improves our ability to predict chemical transfer (bioaccumulation) in aquatic systems and ultimately human health risks. Application of this research is important in efforts to restore critical ecosystems (Great Lakes), to make ecological

forecasts in the face of climate change and to employ ecosystem function for environmental protection (treatment wetlands). She is also studying the unintended ecotoxicological impacts of nanomaterials in aquatic systems. Recent work entails the adaptive design of urban systems to incorporate coupled ecological processes in response to climate change and demographic shifts. She works closely with the Chicago Legal Clinic to provide technical expertise to solve environmental problems for low-income urban communities and with other NGO in the Chicago region to develop creative solutions for resource recovery and economic recovery. She was a Senior Science Fellow at the Environmental Law and Policy Center. She is the author of over 100 scientific papers and lectures widely on energy, climate and environmental issues.

Wednesday Dinner Keynote: 6:30 PM March 14, 2018



Doraiswami Ramkrishna, Distinguished Professor, Purdue University

Presentation Title (tentative): Metabolic Complexity. Is there Music Behind it?

Biographical Sketch: Doraiswami Ramkrishna, popularly known as Ramki, obtained his Bachelor's degree in Chemical Engineering in 1960 from the Bombay University Department of Chemical Technology, now known as ICT. He received his PhD in 1965 from the University of Minnesota, and after serving for two years on the faculty at Minnesota, returned to India to join the IIT Kanpur as an Assistant Professor. In 1974, he went back to the United States as a Visiting Associate Professor at the University of Wisconsin and as a Visiting Professor the following year at the University of Minnesota before joining the Purdue University faculty in 1976 as a full Professor. In 1994, he was appointed H.C. Peffer Distinguished Professor. Professor Ramkrishna is noted for his research on the application of mathematics to chemical and biochemical reaction engineering, biotechnology, particulate systems, and more recently personalized medicine. He is well known for the book *Linear Operator Methods in Chemical Engineering* (Prentice-Hall, 1985) coauthored with Neal Amundson, and his book *Population Balances. Theory and Application to Particulate Systems in Engineering* (Academic Press, 2000).

He is a recipient of several AIChE Awards, the Alpha Chi Sigma (1987), the Richard Wilhelm Award (1998), the Thomas Baron Award (2004). He is a Fellow of professional societies, American Institute of Medical and Biological Engineering (1996), and of the American Institute of Chemical Engineers (2008). From Germany, he won the Senior Humboldt Award (2001) to visit the Max Planck Institute in Magdeburg. Bombay University honored him with the UDCT Diamond Award (1994), the Platinum Award (2009) and Ruia College with the Jewel of Ruia Award. Professor Ramkrishna has held several Distinguished Professorships and delivered numerous Distinguished Lectures. In (2009) he was elected to the US National Academy of Engineering, and as a foreign member to the Indian National Academy of Engineering in 2011.