List of Speakers: Workshop on Future Combustion Research..

Derek Dunn-Rankin is Professor in the Department of Mechanical and Aerospace Engineering at the University of California, Irvine (UCI). He is co-Director for CAMP, the California Louis Stokes Alliance for Minority Participation, a program designed to increase minority representation in science and technology. Dr. Dunn-Rankin's researches novel concepts in combustion and energy, droplet and sprays, and applications of laser diagnostic techniques to practical engineering systems. He has been faculty advisor for 27 Ph.D. and 63 M.S. graduates at UCI. He received a Japan Society for the Promotion of Science Fellowship in 2008 and the Oppenheim Prize of the Institute for the Dynamics of Explosions and Reactive Systems in 2013.

Arnaud Trouvé is Professor in the Department of Fire Protection Engineering at the University of Maryland, College Park since 2001. Professor Trouvé has been a Post-Doctoral Researcher at the Center for Turbulence Research at Stanford University, a Senior Research Engineer at the French Petroleum Institute (IFPEN), and a Guest Researcher at the National Institute of Standards and Technology (NIST). He is currently on the editorial boards for *Combustion Theory and Modelling, Proceedings of the International Symposium on Combustion* and *Fire Safety Journal*. He is also a member of the Executive Committee and Vice-Chairman of the *International Association for Fire Safety Science* (IAFSS) and a member of the Executive Committee and Chair of the US Eastern States Section of the *Combustion Institute* (ESSCI). Professor Trouvé's research interests include fire modeling and Computational Fluid Dynamics; High-Performance (Parallel) Scientific Computing; cyber-infrastructure; physical modeling of combustion- and fire-related phenomena, including compartment fires, wildfires and explosions.

Ajay K. Agrawal is Robert F. Barfield Endowed Chair Professor at The University of Alabama (UA). After receiving PhD from University of Miami in 1988, Prof. Agrawal worked at Michigan Tech University, Clemson University, and University of Oklahoma before joining UA in 2005. His research focuses on low-emission combustion systems for power generation, propulsion, and industry, biofuels and alternative fuels, pressure gain combustion, and thermoacoustic instability, and quantitative Rainbow Schlieren Deflectometry, an optical diagnostics technique pioneered by him. He holds 2 patents and has authored over 250 referred and conference publications. Professor Agrawal is current Chair of US Sections of the Combustion Institute, and Chair of ASME Turbo Expo Coal, Biomass, and Alternative Fuels Committee. He is associate Editor of ASME Journal of Gas Turbines for Engineering and Power & Fellow of ASME.

JoAnn S. Lighty, director of the Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET) in the Directorate for Engineering, is also professor 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, with an annual budget of approximately $180M. JoAnn also serves as a key architect for Innovations at the Nexus of Food, Energy, and Water Systems. Lighty has received numerous honors and recognitions, including educator awards from the Society of Women Engineers and the Utah Engineering Council, university service awards for her work in broadening participation, and election to Fellow by the American Institute of Chemical Engineers. Lighty's research has focused on the formation of fine particulate matter; the fate of mercury in combustion; carbon capture technologies; and on the formation and oxidation of soot.

Geo Richards has led research groups investigating stationary turbines, gasification, carbon dioxide capture, combustion, heat transfer, plasmas, fuel cells, fuel processing, sensors and controls, and geothermal energy. Dr. Richards' responsibilities include developing and executing cooperative research agreements with private industry and academia, and evaluating proposed concepts related to energy conversion. He serves as a research advisor for graduate and post-graduate investigators visiting from academic institutions, and has been adjunct faculty member at West Virginia University and the University of Pittsburgh. Dr. Richards was awarded the ASME Percy Nichols Award for Notable Achievements in the Field of Solid Fuels (2008), was recognized by the NASA/DOD/DOE Propulsion and Power System Alliance with the Chairman's award (2006), and was named Purdue University Outstanding Mechanical Engineer (2010). He serves as an associate editor for AIAA Journal of Propulsion and Power.

Jeffrey M. Bergthorson is the Panda Faculty Scholar in Sustainable Engineering & Design and is an Associate Professor in the Department of Mechanical Engineering at McGill University (Montreal, Canada), where he leads the Alternative Fuels Laboratory. Professor Bergthorson received his B.Sc. in Mechanical Engineering from the University of Manitoba, and M.Sc. and Ph.D. in Aeronautics at the California Institute of Technology in the Graduate Aeronautical Laboratories. His research focuses on the development and experimental validation of models for the combustion properties of alternative and sustainable fuels, plasma-assisted combustion, and the use of recyclable metal fuels as zero-emission clean energy carriers.

Robert Dibble is professor of Mechanical Engineering at the King Abdullah University of Science and Technology (KAUST). His research interests focus on combustion, and he has investigated a wide range of combustion-related topics over the years, including turbulent flows, gas turbines, micro turbines, spark ignited engines, and Diesel engines. More recently, he has investigated the applications of diode lasers to combustion systems; the removal of nitric oxide (NOx) from combustion systems; and Homogenous Charge Compression Ignited (HCCI) Engines. His earlier research into oxygenated fuel has contributed to the generation and application of biofuels, which are greenhouse gas neutral.

Richard Axelbaum is Jens Professor of Environmental Engineering Science in Department of Energy, Environmental and Chemical Engineering at Washington University in St. Louis. Since 2009, he has been the Director of the Consortium for Clean Coal Utilization at WashU. He also leads the Advanced Power Generation theme of the U.S./China Clean Energy Research Center: Advanced Coal Technology Collaboration (CERC-ACTC). Dr. Axelbaum oversees a major DOE-funded effort in the area of pressurized Oxycombustion, and is the lead inventor of the Staged, Pressurized Oxycombustion Process. He has over 90 peer-reviewed publications and holds 4 patents.

Phil Westmoreland is professor in the Department of Chemical and Biomolecular Engineering at North Carolina State University, Raleigh NC, conducting research in chemical kinetics and reaction engineering. He is Director of the Southeast Regional Manufacturing Center for CESMII, the DOE-sponsored Clean Energy Smart Manufacturing Innovation Institute. His degrees are in chemical engineering from N.C. State (BS ’73), LSU (MS ’74), and MIT (PhD ’86). He was 2013 President of AIChE and board member of the Combustion Institute (2002-2014), CAChE (1999-present), the Council for Chemical Research (2005-07), and AIChE (2009-11).

Marc Day is a staff scientist in The Center for Computational Sciences and Engineering (CCSE). Marc's primary focus is the development of algorithms for large-scale scientific computing for complex fluid flow problems. Marc has contributed to projects associated with compressible and low Mach number astrophysics, compressible and low Mach number terrestrial combustion, and reacting multiphase flows in subsurface porous media. The common theme is the development of highly efficient algorithms that exploit known separations in scale (spatial and/or temporal). Most recently, his work is focused on low Mach number modeling of flame interactions with electric fields, industrial combustion applications to reduce greenhouse emissions, and multi-physics software development for compressible and low Mach number adaptive mesh methods for advanced architecture exascale computing systems.

Brandi Schottel received her Ph.D. in Chemistry in May 2007, she started her first postdoctoral appointment with Professor Kenneth Raymond at UC Berkeley to examine the solution thermodynamic stabilities of gadolinium hydroxypyridonate complexes suitable for use as future MRI contrast agents. Her second postdoctoral appointment with Professor A. Dean Sherry at the University of Texas at Dallas focused on similar compounds for use as potential CEST (chemical exchange saturation transfer) agents for MRI contrast. Following this appointment, she joined the teaching faculty at Ursuline Academy of Dallas, a private high school for advanced girls, in August of 2010. She taught introductory chemistry and a college level course for three years before becoming an AAAS Science and Technology Policy Fellow at the National Science Foundation in the Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET). This transitioned into a federal position in CBET where she is considered and expert on sustainability science that involves the integration of multiple systems. Her interests include STEM education, nanotechnology, science policy, and communications associated with interdisciplinary science and engineering solutions for sustainability.

Kyle Niemeyer is an Assistant Professor in the School of Mechanical, Industrial, and Manufacturing Engineering at Oregon State University. He received his PhD in Mechanical Engineering from Case Western Reserve University in 2013. Kyle's group studies chemically reacting flows using computational simulations, with a focus on incorporating realistic chemistry and fluid transport.

Nicole Labbe is currently an Assistant Professor of Mechanical Engineering at University of Colorado, Boulder. Since the start of her Ph.D. in 2006, Dr. Labbe has leveraged her expertise in electronic structure theory, reaction theory, and combustion chemistry to develop detailed chemical mechanism development for oxygen- and nitrogen-containing fuels. She has worked in diverse areas in combustion, including hypergolic propellant ignition, biofuel oxidation in low pressure environments, and most recently, developing a method for determining the rate of prompt dissociation of weakly-bound radicals and implementing that phenomenon into existing reaction mechanisms. She received her Ph.D. in Chemical Engineering from UMass Amherst under the direction of Phillip R. Westmoreland, where she received the National Defense Science and Engineering Graduate Fellowship (NDSEG) and was a postdoctoral associate at Argonne National Laboratories under Raghu Sivaramakrishnan for 3.5 years in the Chemical Sciences and Engineering Division.

Dr. Chris Shaddix completed his PhD in Mechanical and Aerospace Engineering from Princeton University in 1993. After serving as a National Research Council postdoctoral fellow at the National Institute of Standards and Technology (NIST), Maryland, from 1993-1995, he has been employed as a research scientist at Sandia National Labs' Combustion Research Facility in Livermore, California. Dr. Shaddix has expertise in combustion and gasification of coal and biomass, the formation and oxidation of PAH and soot, oxyfuel combustion, and the application of laser and optical diagnostics. He has collaborated extensively with university, industrial, and government research partners around the world. Dr. Shaddix was promoted to the rank of Distinguished Technical Staff before transitioning to manager of the Reacting Flow Research department at Sandia. He is an associate editor of *Combustion Science and Technology* and is on the editorial board of *Combustion Theory and Modeling*. He serves on the Executive Committee of the US Section of the Combustion Institute and is on the Board of Directors of the Combustion Institute. He has authored or co-authored over 60 publications in major, peer-reviewed scientific journals. He carries an H-index of 33 and his publications currently have approx. 4000 literature citations.

Dr. Song-Charng Kong is currently a Program Director at NSF. He manages the Combustion and Fire Systems Program and Major Research Instrumentation Program at CBET Division. His home institution is Iowa State University, where he is a professor at Mechanical Engineering Department. His research includes two main areas: internal combustion engine and biomass thermochemical conversion. Each research area includes both experimental diagnostics and numerical modeling.