



About the Speakers and Panelists.....

Jonathan Male, Director, Bioenergy Technologies Office, DOE

Dr. Jonathan Male is the Director for the Bioenergy Technologies Office (BETO) in the Office of Energy Efficiency and Renewable Energy (EERE). In this role, he leads the Office's work to lower costs, reduce technical risk, and accelerate deployment of bioenergy and renewable chemicals technologies. He oversees research and development across the entire supply chain—from sustainable biomass growth and collection to biomass conversion technologies that include biochemical, catalytic, and thermochemical pathways to produce economically viable biofuels and bioproducts. The office's portfolio of demonstration activities involving public-private partnerships helps BETO staff to evaluate risks and enable industrial entities to move technologies to commercial scale in the emerging bioenergy industry.

Before joining the U.S. Department of Energy, he was the laboratory relationship manager for biomass at Pacific Northwest National Laboratory. There he was responsible for business development and enabling high-quality and timely projects aligned to BETO's needs. Previously, he worked at the GE Global Research Center in Niskayuna, New York, and developed programs in heterogeneous and homogeneous catalysts. In total, he has more than 17 years of research experience in catalysts, inorganic materials, high throughput experimentation, greenhouse gas emissions reduction technologies, production of chemicals, and biofuels.

He received a Bachelor of Science degree in Applied Chemistry from the University of Greenwich, England, and his Ph.D. in Organometallic Chemistry at Simon Fraser University in Canada.

Daren Daugaard, Director of Research and Development, Cool Planet Energy Systems

Dr. Daren Daugaard is the Director of Research and Development at Cool Planet Energy Systems (CPES) located in Camarillo, California. Dr. Daugaard has been involved in renewable energy for 15 years in academics and in industry. He obtained his doctorate at Iowa State University focusing on the pyrolytic conversion of biomass to liquids. He accepted a faculty position at the University of Texas at San Antonio where he continued his pyrolysis work utilizing local feedstock. He later joined ConocoPhillips Company to initiate a biomass pyrolysis program focused on producing renewable fuels that continues at Phillips 66 Company. More recently, he has joined CPES to develop and build commercial plants capable of producing renewable transportation fuels and biochar.

John Holladay, Energy and Environment Directorate, Pacific Northwest National Lab

Dr. Holladay is responsible for PNNL's \$15 million per year research portfolio on biofuels, products and energy. This portfolio includes the sustainable utilization of terrestrial biomass and marine systems (micro and macro algae) to fuels and chemicals via chemical and biological catalysis. Holladay is experienced in organizing consortia of national laboratories, industry and academia, including the National Advanced Biofuels Consortium (Chief Technology Officer) and the National Alliance for Advanced Biofuels and Bioproducts (Chief Operations Officer). Holladay has overseen a significant growth in the research volume at PNNL, particularly in catalyst capabilities in the Bioproducts Sciences and Engineering Laboratory and sustainability analysis as we seek to improve the science base for conversion of biomass with respect to understanding water and land use impacts. Prior to his current assignment Holladay's research focus was in developing new catalysts and processes for conversion of a variety of biomass feedstocks to chemicals using to solve problems in the area of condensed phase heterogeneous catalysis. He also played key roles in multiple assessment activities examining top potential uses for sugars, lignin and lipids.



Anthony Bridgwater, Director of European Bioenergy Research Institute, Aston University, UK

Dr. Bridgwater is a Professor of Chemical Engineering at Aston University in Birmingham, specializing in thermal conversion of biomass for production of fuels and chemicals. He obtained his first degree in Chemical Engineering from UMIST followed by several years working for BP in Sunbury. After returning to Aston, he earned his PhD and DSc. Current interests are focused on the development of fast pyrolysis of biomass and the fuel and chemical products that can be derived from the liquids. Dr. Bridgwater's been actively involved in bioenergy for over 25 years and has published extensively.

Dr. Bridgwater was Technical Director of the UK Flagship [SUPERGEN Bioenergy](#) programs for over eight years and has been involved in winning over £25 million in research grants, which established the foundation for the [European Bioenergy Research Institute](#) (EBRI) at Aston University.

Kevin Kenney, Energy Systems & Technologies Directorate, Idaho National Lab

Kevin Kenney is the Director of the Biomass Feedstock National User Facility at the Idaho National Laboratory (INL). In this role, he is focused on establishing lab/industry partnerships through deployment of INL capabilities in biomass characterization, logistics, and preprocessing to address technology and risk barriers of bioenergy industry partners. Kevin's applied engineering research experience includes high-speed imaging, sensing, and autonomous control in various industrial applications ranging from automotive manufacturing to agricultural machinery operations. Over the last 10 years he has applied this expertise to R&D of biomass feedstock supply and logistics systems—particularly in biomass harvest, collection, and storage—that address feedstock cost, quality, and quantity challenges for bioenergy production.

Dane Boysen, Gas Technology Institute (GTI)

Dr. Dane Boysen recently joined the Gas Technology Institute (GTI) as the Executive Director of Research Operations. Prior to joining GTI, he served as a Program Director at the Advanced Research Projects Agency-Energy (ARPA-E), where he managed over \$100 million spread over 30 of the nation's most cutting-edge energy technology research and development projects. In 2012, he launched the MOVE program with the aim of reducing the cost of natural gas light duty vehicles and enabling low-cost home refueling—promoted by President Obama, it is the only one of its kind in the U.S. government. In addition, he manages the batteries for electric vehicles portfolio (BEEST), as well as projects to develop technologies for natural gas to liquids conversion, high efficiency air conditioning, and carbon capture from coal-fired power plants. In 2012, Boysen founded the National Facility for Adsorbent Characterization and Testing (FACT) at the National Institute of Standards and Technology (NIST) to support and advance the development of the sorbent materials.

Prior to joining ARPA-E, Boysen led an \$11 million project to develop liquid metal batteries for grid-scale energy storage at the Massachusetts Institute of Technology (MIT) under Professor Don Sadoway. This work led to the founding of the venture-backed start-up company *Ambri*. In 2004, Boysen co-founded *Superprotonic Inc.*, a venture capital-backed start-up company dedicated to the commercialization of solid acid electrolyte-based fuel cells. Successfully raising \$20 million in venture capital, Boysen pioneered the use of solid acid electrolytes in fuel cells, resulting in the first new class of fuel cell electrolytes in nearly half a century. This work has led to numerous patents and publications in eminent periodicals, such as *Science* (January 2004) and *Nature* (April 2001).

Boysen received his MS (2001) and PhD (2004) in Materials Science at the California Institute of Technology—where he investigated the transport properties, phase transitions, and atomic structure of solid acid proton conductors under Professor Sossina Haile.



Rudi Roeslein, Roeslein

I am an Electrical Engineering Graduate from the 1971 class @ St. Louis University. I am the founder and the CEO of Roeslein and Associates, the leading EPC firm for the Beverage Can Manufacturing Industry where we have built over 200 beverage can plants in over 40 countries in the last 25 years. While many in industry and political leaders wrote off the US manufacturing industry 20 years ago, we have used our concepts of Prefabrication, Modularization, Unitizing, and preassembly to ship our modular systems fabricated, constructed and installed by American workers, throughout six continents. With these modular systems and American labor and supply chain infrastructure we have been able to export over a billion US\$ of American machinery, equipment and Modular and Unitized systems. We have become the preeminent supplier of Modular designs and construction not only in the beverage can manufacturing industry, but for the last 5 years have made significant inroads into the Alternative Energy, Oil and Gas, and Chemical Industries.

As President of Roeslein Alternative Energy, I am deploying modular and preassembled systems concepts into a nascent industry that needs these same Modular concepts to improve speed to market, budget and cost controls, higher quality, safety and guaranteed results. We are currently working on a one hundred million \$ project with Murphy Brown of Northern Mo. to convert the manure from 2 million hogs to over 15 million Diesel Gallon Equivalents (DGE) of Compressed Natural Gas, (CNG). In addition we are working on deploying modular technology that will utilize native grasses and cover crops combined with waste products such as the manure from hogs, cattle, and food waste to produce an additional 45 million DGE of CNG. This unique and innovative model will use the ecological benefits and services that our native prairie can provide while also serving as a bio mass. Our aim is to restore 30 million acres of highly erodible land that is considered marginal, but could provide countless benefits to man, nature and wildlife if restored to native grasslands.

I have served on the Board of Directors for the Missouri Prairie Foundation, and am a contributing member of the Nature Conservancy. I have life time memberships in the Rocky Mountain Elk Foundation, Quail Forever, Quality Deer Management Association and the Conservation Federation of Missouri. In addition I own 2500 acres of land in Missouri where my son and his team manage grassland restoration projects and Savannah Restoration Projects in cooperation with Missouri Department of Conservation, US Fish and Wildlife, and the Wild Turkey Federation. We are also currently working with Iowa State University, the University of Minnesota, and the University of Missouri to establish a scientific research team to work on developing data for the measurement and verification of ecological services.

I believe that modular construction systems are becoming the mainstream preferred construction methods in many industries and is not the wave of the future but is the future.

Philip Keith, President and CEO of Aspen Automation, a very successful engineering firm that specializes in process design, machine design and industrial automation

Mr. Keith has more than 16 years' experience in advanced industrial manufacturing. He attended the University of Iowa where he graduated with a BS in Chemical Engineering and began his professional career with CGRER (Center for Global and Regional Environmental Research). There, he worked with developing atmospheric modeling and simulation for research being completed in Asia for the World Bank and NASA. He stepped into the advanced industrial automation industry when he was hired by Ashland Chemical where he was a Process/Project Engineer. Here, he worked to transition major industrial contracts over to new process systems which he had to design, implement and start up. One of his key projects involved Bridgestone/Firestone. After the completion of this project Bridgestone



extended an offer for employment as an Engineer at the Des Moines, Iowa facility where he continued to lead the development and innovation of new technologies within their process. After ten years with Bridgestone he left to form his own engineering firm to continue his expertise in industrial automation. Aspen Automation has become one of the largest and most successful engineering firms of their type in the Midwest.

Kelli Malloy, Plant Automation Specialist, Applied Controls

Applied Control is the local business partner in the Rocky Mountain Region for Emerson Process Management. Emerson Process Management specializes in plant automation including instrumentation and control system design and manufacturing. Kelli is a specialist in plant automation with a focus in control system implementation, safety, wireless technologies, machine health. She has over twenty years of experience as an engineer in industrial and process automation. She has a Chemical Engineering degree from Virginia Tech and has worked as a process engineer in specialty chemical, petrochemical, refining, water treatment and biopharma industries. Kelli has worked in plant automation and process automation with specialization in instrumentation, infrastructure media, interfaces, and system architecture.

Ted Amundsen, Mainstream Engineering

Mr. Amundsen received his bachelor's degree in Chemical Engineering from Michigan State University and his master's degree in Chemical Engineering from the University of California at Berkeley. His graduate research resulted in the publication of a review of biomimetic catalysis as it pertains to biofuels in a recently published book entitled "Chemical and Biochemical Catalysis for Next Generation Biofuels". Mr. Amundsen's research interests include wastewater treatment as well as the conversion of biomass into value-added products, including fuels. At Mainstream, he is currently serving as the PI on a project to develop a dishwashing water recycling system for the Army while also contributing to Mainstream's development of a transportable pyrolysis system to process distributed agricultural waste material. He is a member of AIChE and serves on the Advisory Board for the Department of Chemical Engineering at the Florida Institute of Technology.

Mark Wright, Assistant Professor of Mechanical Engineering, Iowa State University

Dr. Wright is an assistant professor in the Department of Mechanical Engineering at Iowa State University. He received his graduate degrees from ISU where he earned the George Washington Carver award for his research contributions to the bioeconomy. His post-doctoral work took place in the Chemical Engineering Department at the Massachusetts Institute of Technology where he worked with catalysis experts to develop bio-oil upgrading technologies. Dr. Wright is an affiliate of the Bioeconomy Institute and his current research focuses on techno-economic and life cycle analysis of biofuel pathways. In particular, he is interested in small-scale, thermochemical platforms for producing fuels and chemicals from distributed biorenewable resources. His recent work explored the optimal scale of biorefineries and the role of learning curves in reducing the cost of biofuel production.