

Research Plans and Accomplishments Towards the Clean Energy Economy and Path Forward

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Seminar host: Ted Heindel

Abstract

In this seminar I will cover my research portfolio towards developing and deploying the clean energy economy while highlighting significant accomplishments towards this objective. For many reasons the development of the clean energy economy is in bit of a cross roads since the historical policy drivers for the development of the clean energy economy have been the desire for energy security and low carbon fuels, chemicals and electricity. Both of these drivers have been tempered somewhat by a number of factors such as increased domestic oil and natural gas production and uncertainty about continued support for low carbon fuels and power. Given this change in policy drivers, the clean energy economy will need to transition from a market situation predominately driven by volume and power generation mandates to a market pull situation where clean energy is advantaged in the marketplace. This is an area that I have been focusing on and I will address my vision for sustaining and growing the research at Iowa State in this context. Additionally, I will address my vision for contributing to the educational mission and diversity of the Mechanical Engineering department at Iowa State.

Bio

Dr. **Thomas Foust** is the Director of the National Renewable Energy Laboratory's National Bioenergy Center (NBC), a world leading organization of approximately 185 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 bioproducts 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 bioproducts. Additionally, he has worked extensively in environmental and societal sustainability issues associated with clean energy. He has over 75 publications in the clean energy field covering numerous aspects of R&D, technoeconomic 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.

This seminar counts towards the ME 600 seminar requirement for Mechanical Engineering graduate students.