



**SEMINARS IN  
CHEMICAL AND BIOMOLECULAR ENGINEERING**  
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**UCLA Hydrogen Engineering Research Consortium  
(UCLA-HERC)**

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5249 Boelter Hall



Presented by  
**DR. JEFF SIROLA**

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Sustainable Energy Systems  
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**“The Rollercoaster Ride of Natural Gas as a Chemical Industry Fuel  
and Feedstock”**

Natural gas (methane) is both the principle fuel which powers the chemical industry and an important feedstock. However, in the United States its availability and price has been strongly impacted since 1950 by a series of regulations designed variously to protect residential consumers, increase supply, discourage industrial consumption, achieve environmental compliance, increase power production, and facilitate greater incorporation of variable renewable energy sources.

These policies and other impacts of global economic growth, speculation, and near constant supply have resulted in major perturbations and dislocations within the chemical industry. This talk summarizes those challenges, some of the responses that were developed to those challenges, the surprising rise of shale gas development, and a somewhat different likely future compared to what was predicted just a few years ago.

*Jeff Sirola* retired in 2011 as a Technology Fellow at Eastman Chemical Company in Kingsport Tennessee where he had been for more than 39 years. He now holds half time positions as Professor of Engineering Practice at Purdue University and Distinguished Service Professor of Sustainable Energy Systems at Carnegie Mellon University. Sirola received a BS in chemical engineering from the University of Utah in 1967 and a PhD in chemical engineering from the University of Wisconsin-Madison in 1970. His areas of interest include chemical process synthesis, computer-aided conceptual process engineering, design theory and methodology, chemical process development and technology assessment, resource conservation and recovery, sustainable development and growth, carbon management, and chemical engineering education.

Sirola just completed two terms as Secretary of ABET. He is also a trustee and past president of CACHE (Computer Aids for Chemical Engineering Education), and a member of the American Chemical Society, the Association for the Advancement of Artificial Intelligence, and the American Society for Engineering Education. He has served on numerous National Research Council, National Science Foundation, and Department of Energy panels, and on the advisory boards of several journals and chemical engineering departments. Sirola is a member of the National Academy of Engineering and was the 2005 President of the American Institute of Chemical Engineers.