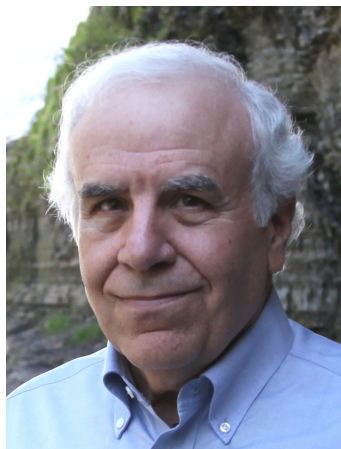


Purdue University  
Earth, Atmospheric, and Planetary Sciences  
Energy Colloquia



**Anthony R. Ingraffea**  
Prof. of Engineering  
Cornell University

## The Science of Shale Gas/Oil: The Latest Evidence on Leaky Wells, Methane Emissions, and Implications for Energy Policy

Tuesday, October 27

7:00 – 8:00 PM

PHYS Rm 112

Refreshments at 6:30 also in PHYS Rm 112

Open to the Public

**Abstract:** We will explore some myths and realities concerning large-scale development of the unconventional natural gas/oil resource in shale deposits. On a local scale, these concern geological aspects of the plays, and the resulting development and use of directional drilling, high-volume, slickwater, hydraulic fracturing, multi-well clustered pad arrangements, and the impacts of these technologies on waste production and disposal, and possible contamination of water supplies. On a global scale, we will also examine the cumulative impact of unconventional gas development on greenhouse gas loading of the atmosphere. This loading involves technical, scientific, and policy questions that will be identified and partially answered.

Dr. Ingraffea is the Dwight C. Baum Professor of Engineering Emeritus and a Weiss Presidential Teaching Fellow at Cornell University where he has been since 1977. He has authored with his students and research associates over 250 papers, and is Past-Director of the Cornell Fracture Group. For his research achievements in hydraulic fracturing he has won the International Association for Computer Methods and Advances in Geomechanics "1994 Significant Paper Award", and he has twice won the National Research Council/U.S. National Committee for Rock Mechanics Award for Research in Rock Mechanics. He became a Fellow of the American Society of Civil Engineers in 1991, and named the Dwight C. Baum Professor of Engineering at Cornell in 1992. His group won a NASA Group Achievement Award in 1996, and a NASA Aviation Safety /Turning Goals into Reality Award in 1999 for its work on the aging aircraft problem. He became Co-Editor-in-Chief of *Engineering Fracture Mechanics* in 2005. In 2006, he won ASTM's George Irwin Medal for outstanding research in fracture mechanics, and in 2009 was named a Fellow of the International Congress on Fracture. TIME Magazine named him one of its "People Who Mattered" in 2011, and he became the first president of Physicians, Scientists, and Engineers for Healthy Energy, Inc. ([www.psehealthyenergy.org](http://www.psehealthyenergy.org)) in that same year. He is a co-author of recent papers on methane emissions (2011, 2012), wellbore integrity in Pennsylvania (2014), and on conversion of New York (2012) and California (2014) to wind/sun/water power for all energy uses in the next few decades.