

**Stanford** | NATURAL GAS INITIATIVE  
School of Earth, Energy & Environmental Sciences  
and Precourt Institute for Energy

**Natural Gas Initiative Affiliate Meeting**  
**Tresidder Memorial Union, Oak Room West, Stanford, CA 94305**

**DAY 1 -- Tuesday, March 1<sup>st</sup>, 2016**

- 8:30 Continental Breakfast
- 9:00 Introductions, Welcome, and Current Status of NGI – *Mark Zoback*
- 9:30 Keynote Speaker: Kamel Ben Naceur (Director, Sustainability, Technology, and Outlooks, International Energy Agency) -- **IEA's Energy Perspectives in the Context of the COP-21 Agreement**
- 10:30 Break
- 10:45-12:30 Methane Leakage
- 10:45 Methane leak detection and repair across the natural gas value chain – *Rob Jackson*
  - 11:05 Quantitative tools to predict the performance of improved leak detection technologies and policies – *Adam Brandt*
  - 11:25 Semiconductor lasers for methane leak detection and monitoring – *Leo Hollberg*
  - 11:45 Simultaneous atmospheric C1 – C3 detection with a compact midinfrared laser sensor – *Ron Hanson and Rob Jackson*
  - 12:05 Panel discussion and questions – *Mark Zoback* panel moderator
- 12:30 Lunch
- 1:30-3:00 Natural Gas Conversion to Liquid Fuels and Chemicals
- 1:30 Converting methane to methanol using nature-inspired, self-assembled materials – *Matteo Cargnello*  
Rational design of catalysts for the direct conversion of natural gas to methanol – *Xiaolin Zheng, Jens Norskov, and Frank Abild-Pedersen*  
Understanding electron-driven processes for methane activation in gas to liquid conversion – *Tom Jaramillo*
  - 2:10 Panel discussion and questions

- 3:00 Break
- 3:15-4:45 Economics and Policy
- 3:15 Perspectives on model-comparison studies – *John Weyant*
- 3:30 A policy framework for evaluating North American natural gas exports – *Michael Wara and Hill Huntington*
- 3:45 Natural gas supply and the economy-wide impacts of US climate change policies – *Larry Goulder*
- 4:00 Panel discussion and questions – *Brad Ritts* panel moderator
- 5:00 Reception

## **DAY 2 -- Wednesday, March 2<sup>nd</sup>, 2016**

- 8:30 Continental Breakfast
- 9:00-10:00 Hydraulic Fracturing
- 9:00 Introduction – *Mark Zoback*
- 9:15 Imaging hydraulic fractures for optimal production of natural gas resources – *Eric Dunham*
- 9:40 Engineering the viscoelastic flow of frac'ing fluids via computer simulation – *Eric Shaqfeh*
- 10:05 Planned NGI workshops and symposia 2016-2017 – *Brad Ritts*
- Gas conversion to liquid fuels and chemicals -- *Matteo Cargnello*
  - Methane leakage workshop -- *Adam Brandt*
  - Natural gas and alleviating energy poverty -- *Mark Zoback*
- 10:30 Break
- 10:45 Update on injection induced seismicity – *Mark Zoback*
- 11:30 Planned NGI Education and Outreach – *Tisha Schuller*
- 12:00 Engaging with NGI and Conclusion – *Brad Ritts*
- 12:15 End of Meeting & Light Lunch

*Afternoon is available to schedule 1-on-1 or small group meetings, lab tours, or other activities with NGI researchers*