



MICKEY LELAND ENERGY FELLOWSHIP INTERNSHIP PROGRAM

Sponsored by the U.S. Department of Energy Office of Fossil Energy



2014 TECHNICAL FORUM



AGENDA



U.S. DEPARTMENT OF
ENERGY

<http://energy.gov/fe/mickey-leland-energy-fellowship>



Providing opportunities for students who are pursuing degrees in science, technology, engineering, or mathematics.



MICKEY LELAND ENERGY FELLOWSHIP TECHNICAL FORUM AGENDA

SUNDAY, AUGUST 3, 2014

4:00 – 6:00 pm	Student Registration	Three Rivers Room
7:00 – 9:00 pm	Presentation Practice	Three Rivers Room

MONDAY, AUGUST 4, 2014

8:00 – 9:00 am	Student Registration	Three Rivers Room ORISE, DOE
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9:00 – 9:30 am	Opening Remarks	Alan Perry Office of Fossil Energy (FE)
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	Welcome Remarks	Serena A. McIlwain COO for Business Operations
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9:30 – 10:30 am	Keynote Welcome Remarks	
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Captain (Ret) Ernest R. Hunter Sr.
Co-Founder, MLEF
Former Deputy Assistant Secretary
Office of Fossil Energy

10:30 – 10:45 am	Break	
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(Students with morning session presentations load slides onto computer)

10:45 – 11:00 am	Ice-Breaker	
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MICKEY LELAND ENERGY FELLOWSHIP TECHNICAL FORUM AGENDA

11:00 – 12:15 pm Student Presentations

- **Nelson Olofindayo**
Volumetric Effects in Coal Sorption Capacity Measurements
- **Virginia Jimenez**
Automation of High Temperature and Pressure System
- **Mackenzie Harrmann**
Fracture Isolation and Fluid Transport Simulations in X-ray Computed Tomography Data of a Fractured Cement Core
- **Leticia Rojas**
Oil and Gas Development in South Africa
- **Melissa Emerson**
Carbon Capture Simulation Initiative

12:15 – 1:15 pm Lunch

(Students with afternoon session presentations load slides onto computer)

1:15 – 2:30 pm Student Presentations

- **Camilla Schramek**
Creation of Communications Dashboard for the Office of Research and Development
- **Annie Sheppard**
Methane Emissions from Midstream Natural Gas Infrastructure
- **Colton King**
L-Valve Velocity Imaging
- **Ariana Clements**
Flow of Particles in the Chemical Looping Process
- **Anastasia Fries**
The Hydrologic Impacts of Shale Gas Drill Pads on Small Watersheds



MICKEY LELAND ENERGY FELLOWSHIP TECHNICAL FORUM AGENDA

2:30 – 3:00 pm

Keynote Remarks

Christopher A. Smith
Principal Deputy Assistant Secretary
Office of Fossil Energy

Dr. Michael Knotek
Deputy Under Secretary for Science and Energy
U.S. Department of Energy

3:00 – 3:10 pm

Q & A Session with the Guest Speakers

3:10 – 3:15 pm

Group Photo

3:15 - 3:30 pm

Break

3:30 - 4:00 pm

Special Guest Remarks

Dr. Cindy Powell
Director, Office of Research & Development
National Energy Technology Laboratory

4:00 pm

Adjourn

4:00 – 5:00 pm

Presentation Practice

Three Rivers Room



MICKEY LELAND ENERGY FELLOWSHIP TECHNICAL FORUM AGENDA

TUESDAY, AUGUST 5, 2014

8:30 – 9:00 am **Student Registration** Three Rivers Room

(Students with morning session presentations load slides onto computer)

9:00 am **Opening Remarks** Alan Perry

9:00 – 10:30 am **Student Presentations**

- **Carolyn Brown**
An Integrated look into Unconventional Oil and Natural Gas Impacts on Water Quality and Availability for Remediation and Mitigation Research and Technology
- **Jaffer Deane**
Unconventional Resources Research and Development Portfolio Analysis- Characterization and Management
- **Ashley LeDonne**
Investigating Perovskite Materials for Oxygen Storage
- **Siobhan Tarver**
Improving Vehicle Fleet Efficiency
- **Victor Huayamave**
An Analysis of the Technical and Economic Performance Factors of Advanced High Tungsten Alloys Being Developed for Advanced Ultra Supercritical Coal Fired Power Plant Technology
- **Regina Woloshun**
Determining the Relationship between Torque and Viscosity in a RC1 Scale-up Reactor, and the Potential Applications in Synthesis, Engineering, and Carbon Dioxide Capture Materials

10:30 – 11:00 am **Break**

(Students with second morning session presentations load slides onto computer)



MICKEY LELAND ENERGY FELLOWSHIP TECHNICAL FORUM AGENDA

11:00 am – 12:15 pm Student Presentations

- **Abhilash Nair**
Time Saving Tracking System
- **Dominique Williams**
Synthesis of Solid State Lithium Electrolyte
- **Jared Carpenter**
Analysis of the Oxidation Reactions of Chemical Looping
- **George Chacko**
Economic Analysis of Rare Earth Ores
- **Ella Baar**
Water Usage in Power Generation

12:15 – 1:15 pm Lunch

(Students with first afternoon session presentations load slides onto computer)

1:30 – 2:30 pm

Keynote Remarks: City of Pittsburgh Sustainability

Grant Ervin
Sustainability Manager
City of Pittsburgh

2:30 – 2:45 pm Break

(Students with first afternoon session presentations load slides onto computer)

2:45 – 4:00 pm Student Presentations

- **Charlotte Metzger**
Industrial Hygiene and Ergonomics
- **Emma Johnson**
Testing of the Raman Gas Analyzer for Natural Gas and Syngas Applications



MICKEY LELAND ENERGY FELLOWSHIP TECHNICAL FORUM AGENDA

WEDNESDAY, AUGUST 6, 2014

7:45 am – 4:00 pm **Facility Tour** Conemaugh Generating Station

5:00 – 6:00 pm **Presentation Practice**

THURSDAY, AUGUST 7, 2014

8:30 – 9:00 am **Registration** Three Rivers Room

(Students with morning session presentations load slides onto computer)

9:00 am **Opening Remarks** Alan Perry

9:00 – 10:15 am **Student Presentations**

- **Kyle Buchheit**
Development and Application of Advanced Computer Learning Techniques to Improve Chemical Reaction Modeling within Multi-Phase CFD
- **Louis Gutierrez**
Hyper Facility
- **Allante Harrison**
Project Finance Models
- **George Adesanya**
NEMS Oil and Gas Forecasting
- **Zachary Cesaro**
Synthesis and Analysis of Nickel Nanoparticle Catalysts Used for Natural Gas Transformations

10:15 – 10:45 am **Break**

(Students with second morning session presentations load slides onto computer)



MICKEY LELAND ENERGY FELLOWSHIP TECHNICAL FORUM AGENDA

10:45 – 11:45 am Student Presentations

- **Thalia Aoki**
Graphical Determination of Porosity, Saturation, and Relative Permeability from Displacement Experiments
- **Leah Haling**
Chemical Looping Circulation Rate Optimization and Dynamic Response Study
- **Mathew Stadelman**
Modeling Naturally Fractured Gas Reservoirs
- **Benjamin Heinle**
Characterization of Fracture Surfaces

11:45 – 1:15 pm Lunch

(Students with afternoon session presentations load slides onto computer)

1:15 – 2:15 pm Student Presentations

- **Conrad Cole**
Hybrid Performance Project (HYPER)
- **LaDena Bolton**
Fabrication of Subwavelength Window Coating Applications
- **Soheil Razmyar**
Silicon Carbide Based Alloys
- **Lydia George**
Synthesis and Characterization of Pyrochlore Catalysts

2:15 – 2:30 pm Break



MICKEY LELAND ENERGY FELLOWSHIP TECHNICAL FORUM AGENDA

2:30 – 3:30 pm

Forum Closing Keynote Remarks

Scott Klara
Acting Director
National Energy Technology Laboratory

Graduation

Alan Perry

3:30 pm

Group Photo

3:30 pm

Adjourn

Thank you for attending the
19th annual Mickey Leland Fellowship
2014 Technical Forum



Mickey Leland Energy Fellowship Internship Program

For more information please contact:

Alan Perry

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U.S. Department of Energy

Office of Fossil Energy

National Energy Technology Laboratory

Pacific Northwest National Laboratory

Strategic Petroleum Reserve

Oak Ridge Associated Universities

