



MICKEY LELAND ENERGY FELLOWSHIP PROGRAM

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



2016 TECHNICAL FORUM



AGENDA

August 7-12, 2016

Three Rivers Room

Omni William Penn Hotel - Downtown Pittsburgh



U.S. DEPARTMENT OF
ENERGY

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



**MICKEY LELAND ENERGY FELLOWSHIP
TECHNICAL FORUM AGENDA**



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

SUNDAY, AUGUST 7, 2016

3:00 – 6:00 pm

Student Registration

3:00 – 6:00 pm

Presentation Practice/Load Presentations

MONDAY, AUGUST 8, 2016

8:00 – 8:30 am

Student Registration/Load presentations

8:30 – 9:15 am

Opening Remarks

Mr. Alan Perry
Supervisor, Management and Field Operations
Office of Fossil Energy

Mr. Alaric Soto
Director, Management and Field Operations
Office of Fossil Energy

Welcome Remarks

Dr. Sean Plasynski
Acting Deputy Director, Laboratory Operations and
Chief Operating Officer
National Energy Technology Laboratory

9:15 – 10:00 am

Keynote Remarks

Mr. Reginal "Reg" Spiller
Co-Founder, MLEF
Former Deputy Assistant Secretary
Office of Fossil Energy

Captain (Ret) Ernest R. Hunter, Sr.
Co-Founder, MLEF
Former Deputy Assistant Secretary
Office of Fossil Energy



MICKEY LELAND ENERGY FELLOWSHIP TECHNICAL FORUM AGENDA

10:00 – 10:15 am Break

(Students with morning session presentations load slides onto computer)

10:15 – 11:15 am Student Presentations

- **JoRee LaFrance, HQ DC**
Tribal Engagement on Carbon Capture Technologies
- **Carl Otto, HQ DC**
Carbon Dioxide Removal Strategies for Major Cities Nationally and Internationally
- **Maziar Zarea, HQ DC**
Natural Gas Pipeline Infrastructure in Canada and Mexico
- **Huda Ashfaq, NETL MGN**
Nanocatalysts for the Direct Conversion of Natural Gas

11:15 – 11:45 am Speaker

Ms. Cruz Gabriela (Gabby) Intihar
MLEF alumna
Sr. Program Manager
Office of Fossil Energy

11:45 – 1:00 pm Lunch

(Students with afternoon session presentations load slides onto computer)

1:00 – 2:00 pm Student Presentations

- **Austin Bushree, LANL**
Modeling Transport of Hydrocarbons from Unconventional Resources
- **Brendan Hoover, LANL**
Investigating the Efficacy of CO₂ Capture and Storage Using Industrial CO₂ Sources
- **Kelsey Hunter, LANL**
Offsetting Water Requirements and Stress with Enhanced Water Recovery from CO₂ Storage



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- **Bryan Moore, LANL**
A Neural Networks Approach to Subsurface Flow Models

2:00 – 2:45 pm Speaker
Ms. Cheryl Begandy
Pittsburgh Supercomputing Center

2:45 – 3:00 pm Skit Information
Ms. Lilas Soukup
National Energy Technology Laboratory

3:00 – 3:15 pm Group Picture/Break

3:15 – 4:30 pm Student Presentations

- **Chelsea Bourgeois, SPR**
Comparison between Blanket Heat Stress Mitigation Program and Point-Specific Heat Stress Mitigation Program
- **Helena Ochoa, SPR**
Industrial Hygiene on the Strategic Petroleum Reserve
- **Maryssa Offlee, SPR**
Analysis of the Pig Waste Management Plan
- **Zaid Joya, NETL MGN**
Carbon Storage Focused on Pressure Management

4:30 – 6:00 pm Student Presentation Practice



**MICKEY LELAND ENERGY FELLOWSHIP
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TUESDAY, AUGUST 9TH, 2016

9:00 – 10:15 am Student Presentations

- **Jordon Bordonaro, NETL PIT**
The Surface Area Optimization and Scale-up of BILP-101
- **Jenna Sartucci, NETL PIT**
Metal Organic Frameworks for Carbon Capture
- **Chietha Moore, NETL PIT**
Synthesis and Characterization of Ionic Liquids for Ion Gel Membranes for Carbon Capture Applications
- **Rebecca Hirsch, NETL PIT**
Polymer Ionic Liquid Membranes for Carbon Capture
- **Jerome Raque III, NETL MGN**
Finding the Volume Fraction of Solids Throughout Different Locations of a Fast Fluidized Bed

10:15 – 10:30 am Break

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

10:30 – 11:45 am Student Presentations

- **Emily Ghosh, NETL PIT**
Optical and Structural Analysis of Double Perovskite Thin Films for Solid Oxide Fuel Cell Applications
- **Minh-Michael Bui, NETL ALB**
Reactive Transport Modeling in Fractured Media
- **Jared Carpenter, NETL MGN**
Head Gas Measurement Vessel Design



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- **Matt Edgin, NETL ALB**
Porosity in Unconventional Shale Reservoirs
- **Krista Bullard, NETL PIT**
CO₂ Electroreduction on Au₁₃ Cluster: A Density Functional Theory based Computational Electrochemistry Study

11:45 – 12:45 pm Lunch

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

12:45 – 1:15 pm Opening Remarks

Dr. Cynthia Powell
Executive Director, Research and Innovation Center
National Energy Technology Laboratory

1:15 – 2:30 pm Student Presentations

- **Beverly Agtuca, PNNL**
Development of Spatially Resolvable Mass Spectrometry Analysis Methods to Understand Carbon Transformation Resulting from the Symbiosis of Plants and Bacteria
- **Adrian Salguero, NETL PIT**
Foam Cement Analysis
- **Brandon Mathis, NETL PIT**
Foam Cement Bubble Characterization
- **Amelia McIlvenna, NETL MGN**
Integrating Anode Recycle in a Gas Turbine/Fuel Cell Hybrid System
- **Francesca Moloney, NETL MGN**
Numerical Application of Thermal Energy Storage to a Solid Oxide Fuel Cell Gas Turbine Hybrid System

2:30 – 2:45 pm Break



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2:45 – 3:15 pm

Alumni Network and Outreach

Ms. Lilas Soukup
National Energy Technology Laboratory

Ms. Sandra Cortez
Office of Fossil Energy

3:15 – 4:30 pm

Student Presentations

- **Andre Gilchrist, NETL PIT**
Effective Extraction of Rare Earth Minerals from Coal Ash
- **Emma Keegan, NETL PIT**
Using Portable XRF to Detect Rare Earths
- **Esin Schulz, NETL PIT**
Oxygen Sorbents for Air Separation
- **Jing Hao (Vienna) Liu, NETL PIT**
A Bayesian Approach to Fuel Cell Modeling Refinement
- **Jisoo Kim, NETL MGN**
Induced Seismicity and Experimental Shearing of Caprock Fractures:
Evaluation of Image Processing Methods and Fracture Morphology

4:30 – 6:00 pm

Presentation Practice

WEDNESDAY, AUGUST 10, 2016

9:00 am – 1:00 pm

Facility Tour

Ed Mine and Museum,
Tarentum, PA



**MICKEY LELAND ENERGY FELLOWSHIP
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THURSDAY, AUGUST 11, 2016

8:45 – 10 am Student Presentations

- **Jeremy Ikeogu, HQ GTN**
Ethanol to Butadiene Economic Model
- **Alvin Li, HQ GTN**
High Performance Materials
- **Chyanne Nader, HQ GTN**
Improving Supercritical CO₂ Power Cycle
- **Caroline Quanbeck, HQ GTN**
Identifying Clay Deposits Enriched in Rare Earth Elements near Coal Seams
- **Wei-Lee Wu, HQ GTN**
MFiX Computational Fluid Dynamics Modeling of spouted fluidized bed

10:00 – 10:15 am

Break

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

10:15 – 11:30 am

Student Presentations

- **James Russ, HQ GTN**
Gasification Coal to Fluids Systems
- **Nicola Peyko, NETL MGN**
CO₂ Induced Swelling of Black Shales
- **Evan Gragg, NETL MGN**
Uncertainties in Fluid Flow and Fracture Modeling
- **Ciara Robertson, NETL MGN**
Geothermal Modeling
- **Oscar Pineda, NETL PIT**
Modeling of Recuperators for Supercritical CO₂ Power Cycles



**MICKEY LELAND ENERGY FELLOWSHIP
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11:30 – 11:45 am

Presentation

Ms. Acqueetta Ragland-Higdon
Information Management Analyst
Fossil Energy

11:45 – 12:45 pm

Lunch

12:45 – 2:00 pm

Skits

Ms. Lilas Soukup
National Energy Technology Laboratory

Ms. Sandra Cortez
Office of Fossil Energy

2:00 – 2:15 pm

Break

2:15 – 4:00 pm

Forum Closing Remarks and Certificates

Mr. Christopher A. Smith
Assistant Secretary for Fossil Energy
U.S. Department of Energy

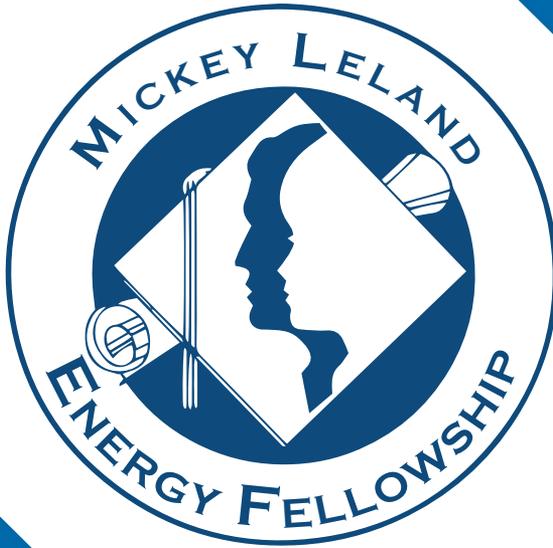


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Thank you for attending the

2016 Mickey Leland Energy Fellowship

Technical Forum
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Mickey Leland Energy Fellowship Program

For more information please contact:

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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

Los Alamos National Laboratory

