Agenda

Thursday, July 27, 2023
(All times shown are EST)

9:30 am — *On-site participant arrival and check-in*

10:00 am — **Welcome & Intro-Video** – *David Tucker, NETL*

10:10 am — **Opening Remark** – *Betsy Snell, Program Manager, MSIPP/NNSA/DOE*

10:25 am — **Opening Remark** – *Heather Quedenfeld, NETL*

10:35 am — **Opening Remark** – *Bryan Morreale, NETL*

10:45 am — Acoustic and Vibration Data Acquisition for Surge & Stall Prediction – *Ian G. Colón, NETL*

11:00 am — Flexible Polymer-based Luminescent Ink Development & Characterization for Surface Temperature Measurements – *Namir Huertas, SNL*

11:15 am — Multi-fluid, Single-phase Thermal Flow Study on Geometrically-induced Effects in a TPMS-UHTC Heat Exchanger – *Guillermo Feliciano Morales, LLNL*

11:30 am — Artificial Intelligence and Unmanned Aerial Vehicle Applications on Electrical Power Systems – *Braian Díaz Aquino, UPRM*

11:45 am — Feasibility Study for the Installation of Photovoltaic (PV) Systems on Residential Roofs in the El Torito Community in Cayey, Puerto Rico – *Armando Bozzo Vazquez, UAGM*

12:00 pm — Making Reverse Micelles to Capture CO_2 – *Ryn Samuel De Castro, UTEP*

12:15 pm — Hybrid Energy Systems for Remote Wireless Sensors – *Marielly Rodriguez, UNM*

12:30 pm — **Group Picture & Lunch Break**

1:30 pm — **HYPER Facility Tour and Start-up Demonstration** – B4-104 & 114

2:45 pm — Material Engineering and Additive Manufacturing of Advanced Materials for Nuclear Energy Needs – *Xavier Omar Nieves-Garcia, UTEP*

3:00 pm — How Electrically-Active Surfaces Affect the Structure and Performance of CO_2 Capture Solvents – *Muriel Sandoval, UTEP*

Thursday, July 27, 2023 *(continued)*
(All times shown are EST)

3:15 pm   Mineral Nucleation and Growth in Nanopores and Planar Interfaces – *Gabriela Lozada-Lopez, UTEP*

3:30 pm   Improving System Resilience Through Decentralized Decision-Making Algorithms – *Jaime Lopez-Molina, UTEP*

3:45 pm   Electrolyte Effects on the Swelling Behavior of 3-D Printed Polymer-Based Membranes – *Ana Paulina Mata, UTEP*

4:00 pm   Satisfying Slice of the Energy Demand, in Supportive the Actual Grid in Puerto Rico – *Walter González Iglesias, UAGM*

4:15 pm   Portable Power Station with Several Sources of Energy for Emergencies – *Ryan I. Rodriguez Tirado, UAGM*

4:30 pm   **Adjourn**

* Dinner to follow at Oliverios Restaurant – Morgantown, WV.
   Please sign up at the check-in desk.

Agenda

Friday, July 28, 2023
(All times shown are EST)

9:30 am — *On-site participant arrival and check-in*

10:00 am — A Novel Concept of a Thermal Integrated Nuclear Hybrid Cycle – *David Valadez, NETL*

10:15 am — Microwave-Assisted Methane Pyrolysis Using FeAlOx Catalysts Synthesized by Solution Combustion Reaction – *Zachary Chanoi, NETL*

10:30 am — Energy Storage System Priority Index for Load Prioritization – *Guillermo Lopez, UPRM*

10:45 am — Mathematical Models of Hybrid DC Microgrids – *Dilcia Danesy Santos Maldonado, UPRM*

11:00 am — Unmanned Vehicles and Pattern Recognition: Advancing Optical and Hyperspectral Sensor Applications for Fault Detection in Electrical Systems – *Brian L. Reyes Santiago, UPRM*

11:15 am — Resilient Solar Panel Mount Design: Climate Change Adaptation and Disaster Resilient in Puerto Rico – *Ian G. Padín Aponte, UPRM*

11:30 am — The Pioneer Array and Integration of a Wave Energy Converter (WEC) – *Andrea Galvan and Gabiel Fuentes, SNL*

11:45 am — Creating More Realistic Corrosion Models: Evaluating the Interaction Between Multiple Pits – *Matthew Roop, SNL*

12:00 pm — Using Autoencoders to Preserve Spectral Density Information – *Rafael Baez Ramirez and Ethan Sloan, SNL*

12:15 pm — **Lunch Break**

1:00 pm — Increasing Bandwidth of Kinetic Meso-Scale Energy Harvesters Using Parachute-Based Proof Mass: Material Testing and Evaluation – *Nico Galarza, UNM*

1:15 pm — Increasing Bandwidth of Kinetic Meso-Scale Energy Harvesters Using Parachute-Based Proof Mass: 3-D Printing Energy Applications – *Gregory Vega Carrasquillo, UNM*

Friday, July 28, 2023 *(continued)*
(All times shown are EST)

1:30 pm   Hybrid Energy Systems for Remote Wireless Sensors –
Christian Torres, UNM

1:45 pm   Portable Solar Energy Concentrator –
Michael Carl and Geralis del Valle Nieves, UNM

2:00 pm   Ion Irradiation of Bulk Metallic Glass Composites for Infrastructure
Resiliency – *Jared Alexander Justice, LLNL*

2:15 pm   Electrospun Nanofiber Manufacturing for Specific Analyte Adsorption and
Detection – *Jalyn-Rose Clark and Anastacia "Stacie" Dressel, LLNL*

2:30 pm   Automation of MTC for High Temperature Ceramic Filters –
Eduardo Ramirez, William Hochstedler and Gabriel Peters, LLNL

2:45 pm   Investigation of an Alanine Based Dosimetry System at LLNL –
Jose Antonio Rosales Mata and Paige Witter, LLNL

3:00 pm   Quantifying Cascading Failures with SOLID Software Design –
Roberto Marrero Ortiz, LLNL

3:15 pm   Methods to Analyze Power Quality in Communities Vulnerable to Hurricane
Events and Evaluate Controllers to Improve the Power Quality Using
Microgrids – *Prof. Fabio Andrade Rengifo, LLNL*

3:30 pm   **Closing Remarks** – *David Tucker, NETL*