**Logistics**

Dates: August 10 - 13, 2015 (Monday - Thursday)

Time: Monday, Tuesday, Thursday: 8:30am - 4:30pm (12-1pm lunch break)
      Wednesday: 8:30am - 6:30pm (12-1pm lunch break, dinner in PM)

Location: Wisconsin Energy Institute (WEI) Room 1115
         1552 University Ave, Madison, WI, 53726
         *Parking in Lot 17 (Ramp on Engineering Drive)

Meals: We provide lunch, morning and afternoon snacks and dinner on Wednesday evening.

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**Institute Theme:** Energy, Sustainability and Climate Change: Bridging Contemporary Science and Engineering with Classroom Learning

**Institute Learning Goals**

1. Understand and apply the NGSS crosscutting concept of “Energy and matter: Flows, cycles, and conservation.”
2. Engage with contemporary energy-related research and researchers at UW-Madison and the Wisconsin Energy Institute and learn about related key challenges in science and engineering.
3. Understand the interplay between energy systems and sustainability, especially climate change and greenhouse gas emissions.
4. Explore education materials that relate to energy and sustainability for use in your classroom and teaching.

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**Monday, August 10: Energy & Sustainability**

**AM:**

Welcome, Introductions, Expectations & Logistics
   ◊ Mary Blanchard, Associate Director of WEI

Evaluating Energy System Sustainability: Current Research and Classroom Applications
   ◊ Keith Cronin, Research Scientist, WEI

**PM:**

West Campus Co-Gen Plant Tour
   ◊ Jim Jenson Community Education Manager, MG&E

Power Generation 101
   ◊ WEI Education Staff

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**Tuesday, August 11: Solar Photovoltaics & Intro to Bioenergy**

**AM:**

Global Energy Flows and Climate Change: Presentation, Discussion & Classroom activity
   ◊ WEI Education Staff

Solar PV Presentation & Discussion: “Harvesting Energy from the Sun: Photovoltaic Solar Cells”
   ◊ Dr. Mike Arnold, Professor of Materials Science and Engineering
PM:
Solar PV Investigations for the Classroom
◊ Dr. Ken Walz, Chemistry & Engineering Instructor, MATC
Introduction to GLBRC & Sustainable Biofuels
◊ WEI Education Staff
**Be prepared for field trip to Arlington Research Station on Wednesday morning. Bring a water bottle, sunscreen, etc. and dress to be outside rain or shine.**

**Wednesday, August 12: Sustainable Bioenergy & Biofuels**

AM:
Meet at 8:30 at WEI classroom
Field Trip to Bioenergy Cropping Systems Trials at Arlington Ag. Research Station
◊ Dr. Gary Oates, Research Ecologist, WEI
◊ Adam Von Haden, Agronomy PhD Student

PM:
Team formation for group projects
Tour discussion & classroom activities for teaching sustainability concepts
◊ WEI Education Staff
Evening Discussion: Biofuels and Climate Change
◊ Dr. Chris Kucharik, Professor of Agronomy, UW-Madison

**Thursday, August 13: Microgrids & Energy Systems**

AM:
Introduction to Power Generation, Storage & Microgrids
◊ Dr. Thomas Jahns, Professor of Electrical and Computer Engineering, UW-Madison
High Bay Lab Tour & Discussion
◊ Phil Hart, Engineering PhD student
◊ Phil Kollmeyer, Engineering PhD student
Investigating Microgrids with Snap Circuits
◊ WEI Education Staff

PM:
Program evaluations
Group Project Work Time
Sharing and Discussion
Wrap-up and Raffle

Thank you to the following contributors and sponsors: