

Energy Research Workshop

May 7, 2013

Gross Hall, Duke Energy Hub

Time	Item
8:00 – 8:50	Breakfast (pastries, fruit, juice, coffee) Registration
8:50 – 9:00	Welcome – Richard Newell, Director, Duke University Energy Initiative; Gendell Professor of Energy & Environmental Economics
Session 1: Energy Modeling, Computation and Analytics	
9:00 – 9:15	Paper: “Modeling Flow Dynamics in Geologic Reservoirs,” Guglielmo Scovazzi, Associate Professor of Civil & Environmental Engineering
9:15 – 9:30	Sketch Set on Energy Analytics <ul style="list-style-type: none"> • “Industrial Energy Efficiency,” Gale Boyd, Director, Triangle Census Research Data Center • “Duke as an Energy Laboratory: Disaggregating Energy Data,” Kyle Bradbury, Postdoctoral Energy Fellow, Duke University Energy Initiative • “Green Clouds: Energy Efficiency and Computing,” Jeff Chase, Professor of Computer Science
9:30 – 10:00	Discussion
10:00 – 10:30	Coffee break
Session 2: Energy Technology Sketches	
10:30 – 11:00	<ul style="list-style-type: none"> • “Biogas and Energy from Wastes and Sanitation; Energy Efficient Bioprocesses,” Marc Deshusses, Professor of Civil & Environmental Engineering • “Integrated Assessment of Wood Bioenergy in the Southeast,” Chris Galik, Senior Policy Associate, Nicholas Institute of Environmental Policy Solutions (NIEPS) • “Thermodynamics and Sustainable Energy Lab,” Nico Hotz, Assistant Professor of Mechanical Engineering & Materials Science • “Solar Thermal Energy Capture and Use,” Joe Knight, Associate Professor of Mechanical Engineering & Materials Science • “Carbon Nanostructures for Energy Storage,” Jie Liu, George Barth Geller Professor of Chemistry • “Using Spatial Economic Models to Estimate Biogas Supply Potential,” Brian Murray, Director for Economic Analysis, NIEPS; Research Professor of Environmental Science & Policy
11:00 – 11:30	Discussion
Session 3: Natural Gas, Coal, and the Energy-Water Nexus	
11:30 – 11:45	Paper: “Environmental Risks of Shale Gas Development and Hydraulic Fracturing,” Avner Vengosh, Professor of Earth & Ocean Sciences
11:45 – 12:00	Discussion

Afternoon sessions on next page

12:00 – 1:15	Lunch buffet <ul style="list-style-type: none"> Remarks by Richard Newell, Director, Duke University Energy Initiative
Session 4: Panel: Impacts and Drivers of Energy Poverty in Developing Countries	
1:15 – 1:45	<ul style="list-style-type: none"> “Environmental Exposures from Energy Poverty in India,” Subhrendu Pattanayak, Professor of Public Policy, Environment, Economics & Global Health “Preferences for Improved Cookstoves in India,” Marc Jeuland, Assistant Professor Public Policy; Faculty Affiliate, Duke Global Health Institute “Stove Health Benefits in China,” Alex Pfaff, Professor of Public Policy, Economics & Environment “Cleaner Energy Choices in Madagascar,” Charles Welch, Conservation Coordinator, Duke Lemur Center
1:45 – 2:15	Discussion
2:15 – 2:45	Coffee break
Session 5: Electric Power Modeling Sketches	
2:45 – 3:00	<ul style="list-style-type: none"> “Multi-scale Forecasting of Wind Energy Production: From Turbulence to Climate Timescales,” John Albertson, Professor and Department Chair of Civil & Environmental Engineering “Electric Power Systems Modeling,” Dalia Patino Echeverri, Gendell Assistant Professor of Energy Systems & Public Policy “Coal vs. Natural Gas Power Plants,” Lincoln Pratson, Truman & Nellie Semans/Alex Brown & Sons Professor of Earth & Ocean Sciences
3:00 – 3:30	Discussion
Session 6: Panel: Emerging Energy and Environmental Policy Issues	
3:30 - 4:00	<ul style="list-style-type: none"> Moderator: Billy Pizer, Associate Professor of Public Policy & Faculty Fellow, NIEPS “Federal Action to Address Climate Change,” Tim Profeta, Director of NIEPS, Professor of the Practice of Public Policy “State Utility Regulation and the Clean Air Act,” Jonas Monast, Director, Climate & Energy Program, NIEPS “Regulating Oil and Gas Drilling in the Evolving Arctic,” Lori Bennear, Assistant Professor of Environmental Economics & Policy
4:00 – 4:30	Discussion
Strategy Session	
4:30 – 5:00	<ul style="list-style-type: none"> Discussion of Opportunities, Gaps and Next Steps – Moderated by Richard Newell
5:00 – 7:00	<p>Energy Mix</p> <ul style="list-style-type: none"> Drinks and hors d’oeuvres reception <p>Poster Session</p> <ul style="list-style-type: none"> “Coupling Wind Power and CCS Coal Plant with Amine Storage,” Rubenka Bandyopadhyay “Natural Gas Leaks,” Adrian Down “The Potential Social Impacts of Shale Gas Development in North Carolina,” Daniel Raimi “The Effects of Wind Inputs on Wind Turbine Characteristics,” Jennifer Rinker “Stochastic Voyages: Mapping & Mining the Set of All Possible Small Molecules,” Aaron Virshup