

# Food-Energy-Water Nexus Workshop

## NSF Workshop

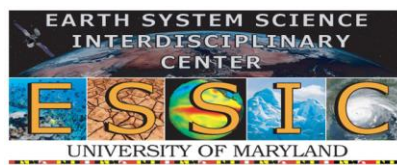
### FEW: Development and Application of Analytical Tools in Support of Food-Energy-Water Nexus Planning

## Agenda

Tuesday October 27<sup>th</sup>, 2015

	<b>Welcome</b>
7:30 a.m. – 8:00 a.m.	Coffee and Registration
8:00 a.m. – 8:30 a.m.	<b>Welcoming Remarks</b> <a href="#">Bruce Hamilton</a> , National Science Foundation <a href="#">Eric Wachsman</a> , UMERC - University of Maryland <a href="#">Antonio Busalacchi</a> , ESSIC - University of Maryland
8:30 a.m. – 9:00 a.m.	<a href="#">Fernando Miralles-Wilhelm</a> , University of Maryland <i><a href="#">Workshop Introduction and Logistics</a></i>

<b>Session 1A</b>	<b>Research Needs in Support of the FEW Nexus</b>
9:00 a.m. – 9:15 a.m.	<a href="#">Dennis McLaughlin</a> , Massachusetts Institute of Technology <i><a href="#">Food Security and Sustainable Resource Management</a></i>
9:15 a.m. – 9:30 a.m.	<a href="#">Tiffany Troxler</a> , Florida International University <i><a href="#">Connections along the FEW Nexus in the face of a changing climate: case studies from south Florida</a></i>
9:30 a.m. – 9:45 a.m.	<a href="#">Morgan Bazilian</a> , The World Bank <i><a href="#">Overview of the World Bank's Thirsty Energy Initiative</a></i>
9:45 a.m. – 10:00 a.m.	<a href="#">Carey King</a> , University of Texas <i><a href="#">Trends in Energy and Food Expenditures &amp; Net Energy to Contextualize the Future Food-Energy-Water Nexus</a></i>
10:00 a.m. – 10:30 a.m.	<b>Panel Discussion</b>
10:30 a.m. – 11:00 a.m.	Coffee Break



<b>Session 1B</b>	<b>Research Needs in Support of the FEW Nexus (cont.)</b>
11:00 a.m. – 11:15 a.m.	<a href="#">Dale Rothman</a> , University of Denver <a href="#"><i>Challenges and Opportunities for FEW Analysis in an Integrated Global Model</i></a>
11:15 a.m. – 11:30 a.m.	<a href="#">Melissa Kenney</a> , University of Maryland <a href="#"><i>Cultivating a Shared Understanding to Grow Indicators of Food-Energy-Water</i></a>
11:30 a.m. – 11:45 a.m.	<a href="#">Guillermo Podesta</a> , University of Miami <a href="#"><i>How Can We Foster Broader and More Effective Use of Climate Information to Support Decision-Making on the FEW Nexus?</i></a>
11:45 a.m. – 12:00 p.m.	<a href="#">Elisabeth Gilmore</a> , University of Maryland <a href="#"><i>Evaluating the impact of climate policies on regional food accessibility using an Integrated Assessment Model</i></a>
12:00 p.m. - 12:30 p.m.	<b>Panel Discussion</b>
12:30 p.m. – 1:30 p.m.	Working Lunch

<b>Session 2A</b>	<b>FEW Nexus Data and Modeling: Approaches and Tools</b>
1:30 p.m. – 1:45 p.m.	<a href="#">Amy McNally</a> , NASA Goddard/ESSIC <a href="#"><i>Remote sensing and hydrologic modeling for food and water security monitoring applications</i></a>
1:45 p.m. – 2:00 p.m.	<a href="#">Mohamad Hejazi</a> , Pacific Northwest National Laboratory (JGCRI) <a href="#"><i>Meeting future demands for food, energy, water (FEW) while mitigating climate change</i></a>
2:00 p.m. – 2:15 p.m.	<a href="#">Hugo Berbery</a> , Cooperative Institute for Climate and Satellites (NOAA) <a href="#"><i>Model-based climate information to support decision-making in southeastern South America</i></a>
2:15 p.m. – 2:30 p.m.	<a href="#">Pierre Guillevic</a> , University of Maryland <a href="#"><i>GEOGLAM: Enhancing the Use of Earth Observations for Agricultural Monitoring</i></a>
2:30 p.m. – 3:00 p.m.	<b>Panel Discussion</b>
3:00 p.m. – 3:30 p.m.	Coffee Break

<b>Session 2B</b>	<b>FEW Nexus Data and Modeling: Approaches and Tools (cont.)</b>
3:30 p.m. – 3:45 p.m.	<a href="#">David Yates</a> , National Center for Atmospheric Research <a href="#"><i>Linking the Water Evaluation and Planning (WEAP) and the Long-range Energy Alternatives Planning (LEAP) Decision Support Systems</i></a>
3:45 p.m. – 4:00 p.m.	<a href="#">Compton Tucker</a> , NASA Goddard <a href="#"><i>Enhancing the NASA/Goddard-Foreign Agricultural Services: Global Agricultural Monitoring System with Coincident Soil Moisture Data</i></a>
4:00 p.m. – 4:15 p.m.	<a href="#">Justin Baker</a> , RTI International <a href="#"><i>Integrating Watershed Hydrology and Economic Optimization Methods for FEW Nexus Research Application</i></a>
4:15 p.m. – 4:30 p.m.	<a href="#">Stephanie Lansing</a> , University of Maryland, <a href="#"><i>Waste to Energy Treatment as an Integral Part of the Food-Energy-Water Nexus</i></a>

4:30 p.m. – 5:00 p.m.	<b>Panel Discussion</b>
5:00 p.m.	Adjourn for the day

5:00 p.m. – 7:00 p.m.	<b>Social Activity</b> (optional; up to 40 participants)
	<b>The Nexus Game:</b> A playful exploration of resilience at the food-energy-water nexus. The nexus game is a board game, but one with emergent rules. In a mere hour, you will move from an outside observer of the stress nexus to one of its key actors. You may play a company, seeking a secure market for your production. You may play a country desperately short of water. You will face land shortages, real or imagined. Innovation, boycotts, partnerships, price fluctuations, free trade, bad harvests, turbulence: it's all in the game. <a href="#">More information about the game is here.</a>

### Wednesday October 28<sup>th</sup>, 2015

7:30 a.m. – 8:00 a.m.	Coffee and Registration
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<b>Session 3A</b>	<b>FEW Nexus Data and Modeling Applications and Experiences</b>
8:00 a.m. – 8:15 a.m.	<a href="#">Leon Clarke</a> , Pacific Northwest National Laboratory (JGCRI) <a href="#">Incorporating Water into an Integrated Assessment Framework</a>
8:15 a.m. – 8:30 a.m.	<a href="#">Pat Delaquil</a> , Decisionware Group <a href="#">Thirsty Energy: Case Studies from South Africa and China</a>
8:30 a.m. – 8:45 a.m.	<a href="#">Daniel Sheer</a> , Hydrologics Inc. <a href="#">Practical Tools and Techniques for Multipurpose Water Management and Dispute Resolution</a>
8:45 a.m. – 9:00 a.m.	<a href="#">Laixiang Sun</a> , University of Maryland <a href="#">Virtual Scarce Water in China</a>
9:00 a.m. – 9:30 a.m.	<b>Panel Discussion</b>
9:30 a.m. – 10:00 a.m.	Coffee Break

<b>Session 3B</b>	<b>FEW Nexus Data and Modeling Applications and Experiences (cont.)</b>
10:00 a.m. – 10:15 a.m.	<a href="#">Andre Lucena</a> , Universidade Federal do Rio de Janeiro <a href="#">Climate change impacts on Hydropower Generation in Brazil</a>
10:15 a.m. – 10:30 a.m.	<a href="#">Soumendra Nath Bhanja</a> , India Institute of Technology (Kharagpur) <a href="#">Groundwater Storage Changes over Indian Sub-Continent: A Quantitative Approach</a>
10:30 a.m. – 10:45 a.m.	<a href="#">Jelena Srebric</a> , University of Maryland <a href="#">Green Roofs and Their Potential to Transform Built Environments through the Food-Energy-Water Nexus</a>
10:45 a.m. – 11:00 a.m.	<a href="#">Christian von Hirschhausen</a> , Technical University of Berlin <a href="#">Linking Bottom-up and Top-down Approaches in Food-Water-Water Modeling: DIW/TU Berlin Research on Bioenergy and Food Markets (Subsaharan Africa) and the Water-Energy Nexus (in Central Asia)</a>

11:00 a.m. – 11:30 a.m.	<b>Panel Discussion</b>
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<b>Session 3C</b>	<b>FEW Nexus Data and Modeling Applications and Experiences (cont.)</b>
11:30 a.m. – 11:45 a.m.	<a href="#">Michael Gerst</a> , Tellus Institute <i>Coproducing Food and Energy: Emerging Opportunities and Challenges</i>
11:45 a.m. – 12:00 p.m.	<a href="#">Steven Gabriel</a> , University of Maryland <i>A Stochastic Two-Level Optimization Model for Compressed Natural Gas Infrastructure Investments in Wastewater Management Considering the FEW Nexus</i>
12:00 p.m. – 12:15 p.m.	<a href="#">Safa Motesharrei</a> , National Socio-Environmental Synthesis Center <i>Two-way Coupling of the Earth and Human System Models</i>
12:15 p.m. – 12:30 p.m.	<a href="#">Robert Tetrault</a> , US Dept of Agriculture <i>Monitoring Global Food Supply: Nexus of Food and Water in a National Security Context</i>
12:30 p.m. – 1:00 p.m.	<b>Panel Discussion</b>
1:00 p.m. – 2:00 p.m.	Working Lunch

<b>Session 4</b>	<b>Trends on Future Research on the FEW Nexus</b>
2:00 p.m. – 2:15 p.m.	<a href="#">Xin-Zhong Liang</a> , University of Maryland <i>Integrated Modeling Framework to Support FEW Nexus Decisions</i>
2:15 p.m. – 2:30 p.m.	<a href="#">Bruce McCarl</a> , Texas A&M University <i>Economics and the Water Energy Food Nexus</i>
2:30 p.m. – 2:45 p.m.	<a href="#">Debra Reinhart</a> , University of Central Florida <i>Implications of Managing Food Waste</i>
2:45 p.m. – 3:00 p.m.	<a href="#">Kristal Jones</a> , National Socio-Environmental Synthesis Center <i>Data to Motivate Synthesis in the Food-Energy-Water Nexus</i>
3:00 p.m. – 3:30 p.m.	<b>Panel Discussion</b>
3:30 p.m. – 4:00 p.m.	Coffee Break

<b>Session 5:</b>	<b>The Dos and Don'ts: FEW Modeling Operational Perspectives on Experiences Using Data and Modeling Tools</b>
4:00 p.m. - 5:00 p.m.	<b>Panel Discussion</b> <a href="#">Liese Dalbauman</a> , Independent Water Steward, formerly PepsiCo <a href="#">Robert Dykes</a> , RTI International <a href="#">Rita Teutonico</a> , Florida International University <a href="#">Satya Kalluri</a> , NOAA Center for Satellites Applications and Research <a href="#">Thomas Crisman</a> , University of South Florida
5:00 p.m.	Closure and Workshop Adjourned