TRANSFORMING GRID OPERATION AND PLANNING
# Future Power Grid Initiative Newsletter
August 2015

## "EVENTFUL" DESCRIBES FPGI'S FINAL TWO MONTHS AS AN INITIATIVE

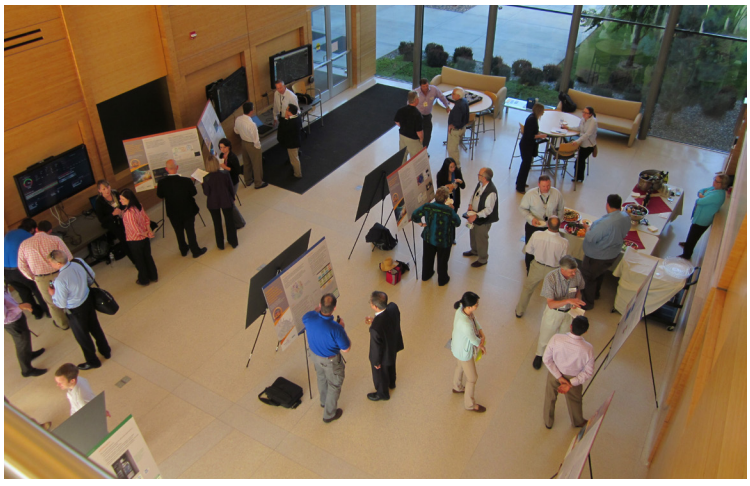
### Annual Review, Energy Day@PNNL and Annual Grid Analytics Workshop set for August 31 to September 3

Pacific Northwest National Laboratory's Future Power Grid Initiative will be hosting three events that highlight past accomplishments and help create a longer-term vision for initiative-developed technologies. The events are set for August 31-September 3 at PNNL in Richland, Wash.

FPGI ends as a PNNL internally-funded initiative in late September, concluding a five-year run that has witnessed the development of multiple tools designed to improve grid operations and planning. Although the initiative is winding down, the capabilities and technologies developed through FPGI will live on, enabling grid-related research and solutions.

#### Annual Review

FPGI's final annual review will be held on **August 31**. The initiative's external advisory committee will convene for the last time, meeting with FPGI and PNNL leadership to receive briefings on the progress of the past year. "We'll also look back over the initiative's five-year lifetime, and discuss key milestones and developments," says **Henry Huang**, who serves with **Jeff Dagle** as FPGI co-leads. Jeff adds, "We want this final annual review to be informative for the committee, but also a celebration of the initiative's progress and accomplishments."



*Poster sessions, like this FPGI event held last year, will be featured at Energy Day@PNNL and the grid analytics workshop.*

Two FPGI-sponsored events on subsequent days offer a more external focus.

#### Energy Day@PNNL

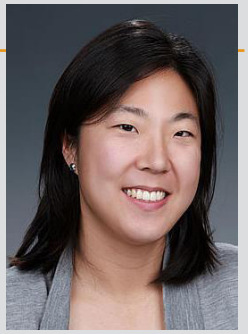
Energy Day@PNNL is set for **September 1**. This event will showcase PNNL grid- and energy-related technologies, including FPGI's core product, the GridOPTICS™ capability suite. Presentations, panel sessions, technology demonstrations and other activities are planned. "We're going to host a session on working with PNNL that will be geared toward companies and others who want to partner with us to license or commercialize PNNL technologies," says FPGI's Jennifer Hodas. Jennifer leads the effort to transition the initiative and its tools from a PNNL-funded activity to broader use and impact.

Energy Day@PNNL is open to individuals who want to make a difference in future power grid development, help move grid technologies forward or just have an interest in the event's various topics/sessions. More information about Energy Day@PNNL is available at http://gridoptics.pnnl.gov/energyday/.

#### Grid Analytics Workshop

The 4th Workshop on Next-Generation Analytics for the Future Power Grid convenes **September 2-3**. The workshop—designed to foster and establish a community of advocates to advance the grid analytics field through the deployment of new grid solutions (including GridOPTICS™)—builds on the progress of three previous workshops hosted by FPGI. As part of the community-building aspect of the meeting, organizers plan to take additional steps toward creating a consortium for addressing longer-term objectives. Research, government and grid industry representatives are among the participants expected at the meeting. More information is available at http://gridoptics.pnnl.gov/fpgws15/.

# HODAS HELPS FPGI TAKE TRANSITION STEPS



*Jennifer Hodas*

## There's Life for the GridOPTICS™ Capability Suite After Initiative Ends

It's a challenge to ensure that Pacific Northwest National Laboratory's five-year investment in future power grid technologies moves boldly into the future. However, Future Power Grid Initiative (FPGI) leaders are working to achieve that objective and, in the process, bring the initiative's innovations to the nation's electric power system.

This effort, known as the "transition," is led by **Jennifer Hodas**. "While the initiative officially concludes on September 30 and will no longer receive PNNL funding, we want its innovations to continue to be used and serve as the foundation of the next set of future grid technologies," Jennifer says. "A key aim of each of PNNL's internally-funded initiatives is that their new capabilities not languish on a shelf, but rather have impact outside of PNNL for use in research, industry and other applications."

In her transition role, Jennifer works closely with fellow FPGI leadership team members, including initiative co-leads Henry Huang and Jeff Dagle, to identify and pursue opportunities that will advance the vision for FPGI's core product, the GridOPTICS™ tool suite. The tools have been designed to take advantage of today's abundance of grid-related data to improve power system operations and planning.

"We're proud of the capabilities that have been developed by FPGI research teams, and a number of grid-related entities have been impressed with the initiative's research approaches and outcomes," Jennifer notes. "Our goal is to sustain and advance the use of the GridOPTICS™ tool suite."

As part of the transition effort, Jennifer and FPGI leadership continue to track and pursue, on a regular basis, funding calls, strategic partner engagements, collaborations and other opportunities relevant to GridOPTICS™ capabilities. At the present time, the team is monitoring more than 40 such activities, and already has experienced some proposal wins.

Upcoming transition activities include the Energy Day@PNNL event, which Jennifer is leading, and the 4th Workshop on Next-Generation Analytics for the Future Power Grid. Both events are hosted by FPGI and designed to help ensure that GridOPTICS™ tools remain visible and relevant with key audiences well into the future.

"The meetings will provide opportunities for networking and scientific cross-pollination between PNNL researchers and external organizations who perceive that GridOPTICS™ can help meet their technology needs. We look forward to these discussions to establish new relationships and strengthen existing ones toward technology deployment and commercialization," Jennifer says.

Jennifer joined PNNL in April 2014. She's a commercialization manager based in PNNL's Technology Deployment and Outreach organization and supports three other PNNL-internally funded initiatives in addition to FPGI. She also is responsible for the identification, protection, and management of the majority of PNNL's Energy and Environment Directorate portfolio. Prior to PNNL, she was the assistant director of the California Institute of Technology's Office of Technology Transfer & Corporate Partnerships. She holds a doctoral degree in Biochemistry & Molecular Biophysics from Caltech and is a registered U.S. Patent Agent.

Jennifer may be reached at jennifer.hodas@pnnl.gov.

# FPGI FORECASTING TOOL GAINS PRESTIGIOUS RECOGNITION

## Technology is an R&D 100 Finalist and the Subject of IEEE-PES Best Paper Honor

A Future Power Grid Initiative software that helps power system operators more accurately predict future electricity needs has earned plaudits from two prominent organizations.

The innovative tool, the Power Model Integrator, has been selected as a finalist by R&D Magazine for the R&D 100 Award. The magazine annually bestows the award on what it considers the 100 most innovative scientific and technological breakthroughs worldwide. Award recipients will be announced at a banquet on November 13 in Las Vegas.

"Everyone who has worked on this technology is pleased that our R&D 100 Award nomination was well-received," says Luke Gosink, who leads research and development activities for the technology. "Such external recognition helps reinforce our belief that the Power Model Integrator will significantly impact the efficient use of our nation's electricity resources," he adds.

In late July, Luke presented a paper on the scientific underpinnings of the technology at the 2015 Institute of Electrical and Electronics Engineers' Power and Energy Society (IEEE-PES) General Meeting in Denver. Prior to the meeting, IEEE-PES selected the paper, titled "Net Interchange Schedule Forecasting Using Bayesian Model Averaging," as one of 19 best conference papers in the Power System Modeling and Simulation category. In addition to Luke, the paper was authored by **Maria Vlachopoulou, Trenton Pulsipher, Ryan Hafen, Jeremiah Rounds, Ning Zhou** and **Jianzhong Tong**.

The Power Model Integrator also was recently featured in T&D World Magazine, which provided an overview of the technology.

In testing in an electric transmission environment, the Power Model Integrator has demonstrated a significant—approximately 35 to 55 percent—reduction in energy forecast errors, which could lead to substantial cost savings. The technology's sophisticated statistical analysis combines multiple energy forecast models to best predict energy needs.

## ABOUT FPGI AND GridOPTICS™

The **Future Power Grid Initiative** (FPGI) was established in 2011 by Pacific Northwest National Laboratory and is delivering next-generation concepts and tools for grid operation and planning to help ensure a more secure, efficient and reliable future grid. FPGI builds upon PNNL's pre-eminent grid expertise and resources such as the Electricity Infrastructure Operations Center (EIOC), a national electric grid research facility.

When the initiative concludes in 2015, its key product will be the **Grid Operation and Planning Technology Integrated Capabilities Suite (GridOPTICS™)**, a set of tools that will facilitate secure data collection and management in real time, use data to drive modeling and simulation, and convert large volumes of data to actionable information. The result will be the ability to show and analyze grid performance at an unprecedented speed, scale, and resolution, supporting operational and policy decision-making for the grid of the future. A primary emphasis of FPGI is on transitioning GridOPTICS™ tools to open-source status and creating a community of advocates that will promote use and further development.

## Past Newsletters

For past newsletters, please see our news page here http://gridoptics.pnnl.gov/articles/i/n/i/Initiative_News_57ae.html#newsletters.

## Contact

For more information, please visit the FPGI website gridoptics.pnnl.gov. or contact Initiative Leads

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