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EAP alum plays pivotal role in growth of UW Energy Institute

The new Wisconsin Energy Institute (WEI) building is centered strategically on the University of Wisconsin-Madison campus between the College of Engineering, the College of Agricultural and Life Sciences and the Wisconsin Institutes for Discovery – a location ideal for developing cutting-edge advances in fuels, renewable energy and energy storage systems.



Paul Meier

The dedicated laboratories, imaging and computational spaces, opening in April 2013, will bring together engineers and scientists to research and develop clean energy systems. Energy Analysis and Policy alumnus and former Energy Institute director **Paul Meier** was critical to marshaling efforts to integrate energy research, teaching and public outreach opportunities across campus. Meier received his Ph.D. in the Nelson Institute's Land Resources program (now Environment and Resources), with an EAP certificate, in 2002.

The Wisconsin Energy Institute was initiated in 2005 by former EAP faculty chair **Michael Corradini**.

University and state investments helped grow the institute through strategic faculty-hiring initiatives and construction of the new state-of-the-art facility.

In 2012, Meier and Corradini collaborated with leadership from the Great Lakes Bioenergy Research Center (GLBRC) and Wisconsin Bioenergy Initiative (WBI) to merge staff and programs into an integrated campus institute fostering multidisciplinary research. The newly reorganized Wisconsin Energy Institute is now comprised of more than two dozen staff supporting campus-wide educational programs and roughly \$30 million in clean energy research annually.

Meier's research is demonstrative of the innovation behind the institute. Using a unique approach to connect researchers with stakeholders, he is developing a national energy modeling initiative.

Meier, an associate scientist in the Department of Engineering Physics, uses computer models to simulate the U.S. energy grid, simulating long-term supply and demand for electricity generation, transportation systems and fuel production. He creates detailed representations of future energy scenarios and then measures the environmental and economic changes that occur when new technologies or

policies – for example, cellulosic ethanol systems, natural gas vehicles or renewable

energy policies – are “plugged in.”

He coordinates with a number of campus collaborators including the GLBRC, Nelson Institute Center for Sustainability and the Global Environment, Global Health Institute, Office of Sustainability and Center for Freight and Infrastructure Research and Education.

Meier credits the EAP program with providing the tools and training to understand energy's impact on both the economy and the environment, and with sparking his interest in interactive systems modeling. As an EAP student working under **Jerry Kulcinski**, a professor of engineering physics, Meier began developing educational games to challenge student and citizen groups with balancing local energy portfolios.

The latest version of his educational game, populated with the same data used by national energy modeling programs, is now being used in the UW-Madison course Introduction to Sustainability Science taught by **Tracey Holloway**, an associate professor of environmental studies. Through the multi-player simulation students examine the choices and challenges in creating a sustainable energy future.

Meier's ultimate goal is to establish a national energy modeling network to help researchers and decision makers strategize an affordable transition to clean energy.



Enrollment update

In the spring 2013 semester, the EAP program includes 28 matriculating students:

- 6 students from the Nelson Institute Environment and Resources program
- 12 students from the College of Engineering
- 7 students from the La Follette School of Public Affairs, two of whom are also in the Law School
- 2 students from the Department of Urban and Regional Planning
- 1 student from the Department of Physics

New students

A warm welcome to the students who joined EAP during the 2012-2013 academic year:

Annamarie Murray, civil and environmental engineering
Austin Nelson, electrical engineering
Pamela Ritger, Law School and public affairs
Mark Watkins, urban and regional planning
Tim Lindstrom, Environment and Resources

Recent graduates

Congratulations to the following students who have recently earned the EAP certificate:

Kolby Bray-Hoagloand , agroecology	Katherine Mitchell , public affairs
Greg Brown , agricultural and applied economics	Daniel Molzhan , electrical engineering
Shashi Dhungel , Environment and Resources	Kelly Osborne , urban and regional planning
William Glewen , mechanical engineering	Julie Reber , Environment and Resources
David Heuwetter , mechanical engineering	Lorraine Renta-Rosa , mechanical engineering
Maythiwan Kiatgrajai , public affairs	Shane Spencer , public affairs
Phillip Kollmeyer , electrical engineering	Melissa Whited , Environment and Resources
Fei Ma , geography	

Program updates

The EAP faculty executive committee is currently exploring two credentialing formats that will allow more students to benefit from the EAP experience:

1 Over the past 15 years, roughly a dozen Ph.D. students have declared a distributed minor in Energy Analysis and Policy. The student's degree granting department simply approves a set of courses that meet department requirements; there has been no formal connection with the EAP program other than the use of our name and registration in our courses.

The EAP faculty is now working to establish an EAP external minor. Under this new structure, the EAP program will officially grant this minor and establish the curricular requirements for its completion. The EAP program will benefit as the university formally recognizes this contribution to the graduate experience.

2 EAP faculty and staff are coordinating with the Nelson Institute to establish a capstone certificate through the Division of Continuing Studies. If implemented, a capstone certificate would allow students to earn the EAP credential without the requirement of concurrent registration in a graduate degree program.

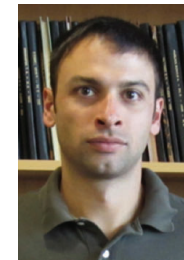
Students who already hold a graduate degree could register as a special student and take credits toward the EAP capstone, which would require the same courses as the current EAP certificate.

This new mechanism promises to expand non-traditional student access to the EAP curriculum. It may also provide a valuable mechanism for expansion of our programs, curriculum, and modes of course delivery.

2012-2013 Bunn Fellowship

Sam Shannon, a second-year student in the La Follette School of Public Affairs pursuing the EAP certificate, received the Bunn Distinguished Graduate Fellowship for the 2012-2013 academic year. The Nelson Institute for Environmental Studies chooses the recipient for this prestigious award following a competitive review of applicants entering or matriculating through the Energy Analysis and Policy program.

Cubero shifts focus from finance to energy analysis



After five years as a financial analyst, new EAP student **Ed Cubero** is turning his attention to energy policy and analysis.

Cubero graduated from New York University in 2004, worked in insurance for a year, and then joined Moody's Investors Service.

"I happened to work at Moody's during an interesting time, as I was able to see the changes in the performance of individual companies through the economic cycle,"

says Cubero, who is now a first-year student pursuing a master of public affairs and a certificate in energy analysis and policy.

As part of Moody's Corporate Finance Group, Cubero analyzed a portfolio of small, private firms across a range of industries.

"The volatile energy costs over the past few years had a significant impact on the earnings of some companies," he says.

"This led to my interest in energy policy."

Cubero also recognized the cost to companies in complying with environmental regulations, particularly in an economic downturn, which inspired his interest in public affairs.

"I always knew graduate school was on the horizon and I became particularly interested in renewable energy and the development of long-term, energy solutions," he says.

Cubero believes his experience in financial analysis can help in the energy policy field, particularly in evaluating the costs of new energy investments. Though environmental policy is important, "it must be done in a cost-effective manner so it does not hurt economic growth," he says. "The skills I am gaining here, plus my work experience, will help me contribute to solutions to future energy problems."

Students win policy challenge with ideas on solar energy incentives

Two EAP students from the La Follette School of Public Affairs won the U.S. Department of Energy portion of the Startup America Policy Challenge with their proposal for making solar energy more affordable.

Sam Harms and **Sam Shannon** traveled to Washington, D.C., in May 2012 for the White

House-sponsored initiative, presenting their idea to a panel of industry and government leaders. The challenge was held in collaboration with the U.S. Department of Health and Human Services, the Department of Energy and the Department of Education.

"Under our proposal, the U.S. Department of Energy and the Federal Energy Regulatory Commission would establish a framework to encourage electric utilities to lease solar photovoltaic modules to businesses and homeowners," explains Harms.

"Customers would pay a monthly fee to use the electricity produced, which would make renewable power more affordable."

The two students based their policy proposal on an idea of Shannon's.

"I considered starting a company that would acquire, distribute and install solar modules for residential and commercial users," says Shannon, who previ-

ously worked for the Madison-based health-care software company Epic.

The students credit **Greg Nemet**, an assistant professor of public affairs and environmental studies who they met in Nemet's Introduction to Energy Analysis course, with helping them develop their proposal.

"Professor Nemet played a big role in helping us refine and sharpen our idea," says Harms.

Solar electricity modules are prohibitively expensive for many property owners, the students note. "If America wants to transition to cleaner sources of energy for electricity, to counter local air pollution and greenhouse gases associated with fossil fuels, the federal government must promote the adoption of emerging technologies," says Shannon.

Under the students' winning proposal, Shannon explains, the soft costs of adopting small-scale solar technology, such as installation and permitting, would be reduced.



Sam Harms



Sam Shannon

Faculty news



Professor Greg Nemet's research addresses climate change

In collaboration with Professor Erin Baker (University of Massachusetts), Nemet has developed a framework for designing a portfolio of technology policies to address climate change. He models the effects of combinations of policy instruments on a portfolio of technologies, when both the outcomes of the technology policies and the effects of climate change are uncertain.

The project evaluates combinations of three policy instruments: government-funded research and development, subsidies for demand, and carbon prices. It focuses on two important technologies: solar photovoltaic and carbon capture and storage, while developing a framework amenable to the consideration of a larger set of technologies.

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Professor Tracey Holloway named deputy leader of NASA Air Quality Applied Sciences Team

This 5-year initiative serves the needs of U.S. air quality management through the use of earth science. As part of the project, Holloway and students are using satellite data and models to quantify how different energy sectors contribute to air quality and to better quantify emissions from a range of energy activities. In June 2012, UW-Madison hosted the national meeting of the Air Quality Applied Sciences Team, with a poster session highlighting student work on air quality, energy and atmospheric science.

Professor Holloway has also won a national award from the Massachusetts Institute for Technology for her efforts in education and mentorship in clean energy. The award, part of the Clean Energy Education and Empowerment Initiative (C3E), was presented at a symposium hosted by the MIT Energy Initiative and the U.S. Department of Energy in September 2012.

Holloway was also recognized as the 2012 Geosciences Undergraduate Research Mentor by the Geosciences division of the Council on Undergraduate Research. The awardee is an individual who serves as a role model for productive and transformative student-faculty mentoring relationships and for maintaining a sustained and innovative approach to the enterprise of undergraduate research.

