

EAP

energy analysis policy

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Featured Alumnus: Ron Meissen, Baxter International Inc.

RON MEISSEN ENROLLED IN THE Land Resources PhD program in 2000 and quickly began his association with the EAP program.

Ron was not a traditional student, as he maintained a full-time position on the management team of Baxter International Inc. (Baxter), and commuted from the north side of Chicago for more than six years to complete his doctorate. Ron had already earned an MBA, an MS in engineering from the University of Illinois, and had an undergraduate engineering degree from UW-Platteville.

Ron completed his PhD in 2007 and added an EAP minor to that degree. Currently, he is the senior director of sustainability within Baxter's corporate Environment, Health, Safety and Sustainability group. In this roll he is involved with a number of global corporate sustainability programs including Baxter's CEO-sponsored executive-level Sustainability Steering Committee. This senior management group was formed in 2006 to accelerate the integration of sustainability practices throughout the organization to help address global sustainability issues and enhance long-term business value. Ron is currently part of a team developing Baxter's 2020 sustainability strategy, vision and goals.

Ron supports Baxter's global regions and business functions with their specific sustainability initiatives, such as corporate communications, purchasing and supplier management, and facilities engineering services. He is a champion for increased use of renewable energy, manages company greenhouse gas emission reduction strategies and is involved in the development of

Baxter's annual Sustainability Report. He also assists many industry and stakeholder groups and universities with their sustainability programs.

Baxter develops, manufactures and markets products for people with hemophilia, immune disorders, infectious diseases, kidney disease, trauma, and other chronic and acute medical conditions. Baxter applies a combination of expertise in medical devices, pharmaceuticals and biotechnology to create products that advance patient care worldwide. Baxter's 2014 sales were \$16.7 billion.

ENERGY CONSERVATION

"We have a strong centralized energy management program (four engineers), which manages and tracks global energy

usage (\$211 million in 2013), performs energy reviews, and identifies energy conservation projects at facilities around the world. They have a Lean Energy Program comprised of four progressive levels of performance, each with 25 or so best practice criteria, Ron explains. "We have about 70 manufacturing plants and plant performance is tracked quarterly." In 2013 Baxter saved \$41 million in energy costs due to energy conservation efforts implemented from 2005 through 2013, in addition to reduce energy-related greenhouse gas (GHG) emissions.

GHG EMISSIONS

Ron manages all of Baxter's GHG emissions tracking and reduction activities. Between 2005 to 2013, Baxter's global sales increased 50 percent. For this same period, Baxter reduced its net GHG emissions from operations 10 percent on an absolute basis. Baxter is in the process of setting a new target for absolute reductions in GHG emissions from 2015 to 2020, expected to be announced in fall 2015. "For many years I have calculated and presented Baxter's estimated Scope 3 GHG emissions (such as GHG emissions related to Baxter's supply chain, employee commuting, and employee business travel). There are 15 Scope 3 categories," he says. In 2013, the UK-based Environmental Investment Organization recognized Baxter with a Scope 3 Disclosure Leader Award. Baxter was ranked second among all companies globally for reporting 12 of 15 Scope 3 GHG emission categories.



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Enrollment update

In the spring 2015 semester, the EAP program includes **26 enrolled students:**

- 13** students from the Nelson Institute
- 3** students from the College of Engineering
- 7** students from the La Follette School of Public Affairs
- 3** students from Biological Systems Engineering
- 1** student from Neuroscience

New students

A warm welcome to the students who have joined EAP since the publication of the Spring 2014 newsletter:

JIANBO XIAO Neuroscience	ELIZABETH BUSCHERT Environment and Resources and BSE
ANDY BEHM Public Affairs	ANNIE LORD Environment and Resources
MATT LANDI Environment and Resources	EMILY HOWELL Environment and Resources
ALEXANDRA KARAMBELAS Environment and Resources	CARL CHRISTIANSON Public Affairs
JOSE-IGNACIO MEDINA Environment and Resources	EDGARDO ORTIZ REYES Biological Systems Engineering
ALYSA BRADLEY Biological Systems Engineering	CALVIN CHERRY Electrical Engineering
XIAOMENG JIN Environment and Resources	

Recent graduates

Congratulations to the following students who earned the EAP certificate in 2013:

DAN DELVESCOVO Mechanical Engineering	MARTHA GOODELL Environment and Resources
JIAQI LU Public Affairs	SETH BLOCK Environment and Resources
NICHOLAS FUNK Water Resources Management	PHILLIP DURAN Environment and Resources



Dear EAP community,

It was great to see so many alums and current students at the Wisconsin Energy Institute (WEI) Summit this past October. That event brought 260 attendees to Union South to address the theme, [Meeting Needs for Future Cities and Communities](#). Plans are already underway for the next WEI summit in October. EAP's own Prof. **Tracey Holloway** is organizing this year's event under the theme of energy and air quality.

We currently have 26 students enrolled in the EAP program, including 13 who have enrolled since the last newsletter a year ago. Since taking over from **Tim Lindstrom**, our new student representatives, **Andy Lick** and **Jose Medina**, have helped organize several EAP student events. These include social events after meetings with **Susan Hedman** from the U.S. EPA and with EAP alum **Antony Scott**. We have more events planned for the spring semester, including a discussion of two energy-related documentaries. EAP now maintains a [calendar of student social events](#). Alums are more than welcome to attend any of these!

Richard Shaten has assembled a nearly comprehensive [list of alums](#), including when each graduated and a recent place of work. Thanks to Richard for this effort. The list is meant to help describe the diversity of career paths available to graduates of the EAP program in order to recruit students. It also provides a resource for current EAP students in their career planning. On careers, EAP alum **Scott Williams** (at WEI) and EAP student reps Andy and Jose helped organize a well-attended webinar on energy careers in November. Four outside panelists took questions, including recent EAP alums **Daisy Chung** and **Melissa Whited**.

We are happy to note that Prof. **Miriam Seifter**, who recently joined the UW Law School faculty, is teaching a class this spring on energy law. EAP students are enrolled in this course, which satisfies the Policy topical area for the EAP certificate. In other faculty news, Prof. **Paul Wilson** will take over as chair of EAP next academic year while I am away on sabbatical. Thanks to Richard Shaten for organizing this EAP update.

Sincerely

Greg Nemet
Chair, EAP program

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RENEWABLE ENERGY

In addition to solar projects and purchasing electricity generated from 100 percent certified renewable energy, Baxter now has boilers using biomass at four locations (two in India, one in the U.S. and one in Italy). "These have great paybacks and great reductions in GHG emissions," Ron says. Baxter also tracks and reports the type of renewable and non-renewable energy sources used to generate the electricity purchased by the company globally (in approximately 50 countries). I am not

aware of any other company presenting this type of information."

ALUMNI RELATIONSHIP WITH EAP

During the 2014 fall semester, Ron acted as one of the liaison members from Baxter assisting a group of EAP students completing their Capstone Seminar (see related story, page four). The EAP student group worked on energy efficiency and carbon reduction strategies, for the company creating a detailed report that serves as a methodological guide of energy efficiency and carbon reduction approaches for the Baxter Renal Therapy Services group. ♦

Featured EAP student: Eric O'Shaughnessy

Eric O'Shaughnessy is in his final semester as a La Follette Master of Public Affairs and EAP student. Before moving to Madison, Eric worked for three years as an environmental policy analyst in Washington, D.C. Eric advised federal agencies such as the EPA on the economic and environmental impacts of proposed rulemakings. Eric has also served as a U.S. Peace Corps volunteer in Paraguay and interned with the U.S. Department of the Interior.



As an EAP student, Eric co-authored his EAP capstone on carbon reduction approaches for a network of medical facilities in Latin

America. He presented findings from the capstone at the 2015 Culture, History, and Environment Symposium. Eric believes that the health care industry is uniquely poised to create a culture of sustainability by leveraging the inherent link between human health and climate change.

Eric works as a project assistant in a research partnership between the University of Wisconsin-Madison and Lawrence Berkeley National Laboratory. The project is focused on economic trends in residential and solar photovoltaic markets. Eric's research has revealed that a subset of cheap solar installers have maintained low prices over time. Further, the cheapest installers at any given moment tend to be relatively low-volume companies that grow more rapidly relative to the rest of the

market. Eric has also researched geospatial trends in solar markets. His research shows that solar installers tend to initially concentrate installation activity in a limited geographic area before expanding into new markets. Most recently, Eric has begun to use geocoding to research the possible peer effects that result from the geographic clustering of solar PV systems in residential areas.

With a B.S. in environmental economics, Eric is broadly interested in the use of economic and policy mechanisms to promote energy efficiency and renewable energy. He believes that responsible energy policy will be a core component of the policy solution to climate change. Eric looks forward to applying his EAP skillsets upon his graduation in May. ♦

Save the Date! 2015 Energy Summit on October 13

Building on the success of the 2014 Energy Summit - with many EAP alumni engaged - planning for the Wisconsin Energy Institute's 2015 event is already underway. Chaired by EAP and Nelson Institute professor **Tracey Holloway**, the meeting will focus on connections between energy and air quality, including the Clean Power Plan, the new ozone standard, transportation strategies, health impacts, and more. The 2015 Energy Summit will tackle the challenges that industry, regulators, and the public face in meeting goals for clean air and reliable energy. Entitled *Air and Energy: The Path Ahead for U.S. States*, the 2015 Energy Summit will include a portfolio of activities to engage participants from Wisconsin, the region, and the country to facilitate discussion on current and emerging issues.

Air pollution remains a major health risk across the nation despite major improvements in U.S. air quality since the passage of the Clean Air Act in 1970. Worldwide, air pollution is the leading environmental risk to human health, and rivals all health risk factors, including malnutrition, alcohol use, and smoking.

Technology improvements such as catalytic converters, particulate filters, and stack scrubbers have yielded vast health benefits, but challenges remain. Regulated industries face increasingly high marginal control costs, while epidemiological research suggests that tighter standards are needed to protect public health. And, for the first time, state regulators must control of carbon dioxide along with traditional pollutants. Unlike other air pollutants, carbon does not lend itself to end-of-pipe emission control options.

Instead, carbon control necessitates large-scale changes to our energy system, especially electricity production, transportation, and our built environment.

These challenges bring air quality, energy planning, and carbon management together more closely than ever before, with new challenges and new opportunities. We hope you will join us for an exciting line-up of speakers and events, held at the beautiful Union South and Wisconsin Institutes for Discovery (WID) buildings. Mark your calendars for October 13! ♦



Capstone Teams Advise Real-world Clients

The EAP Capstone Project represents the application of the program's interdisciplinary approach. Over the past 20 years, each EAP graduate has participated in a project that has provided a relevant and useful product for a real-life client. During the spring 2014 and fall 2015 semesters the following three projects were completed.

PROJECT: CARBON REDUCTION STRATEGIES FOR BAXTER INTERNATIONAL

This report serves as a methodological guide of carbon reduction approaches for the Baxter Renal Therapy Services (RTS). We develop flexible methodologies that are directly applicable to Baxter RTS in Colombia and other RTS operations around the world. We emphasize methods rather than results so that Baxter RTS can easily use the tools developed to assess carbon reduction options based on the most reliable context-specific data available.

Client: **Baxter International**

Team: **Eric O'Shaughnessy, Allie Cardiel, Najoua Jouini**

PROJECT: AN ANALYSIS OF EMERGING ENERGY TECHNOLOGIES

This project analyzes three emerging energy saving technologies for residential and commercial applications. The three technologies analyzed are ductless mini-split heat pumps (DMS), residential condensing combination boilers (CCB), and phase change insulation materials (PCM). The report gives a brief summary of each technology and projects potential energy savings and associated costs.

Client: **Energy Center of Wisconsin**

Team: **Tim Lindstrom, Nick Funk, Dan DeVescovo**

PROJECT: WISCONSIN SOLAR POLICIES AND GROWTH POTENTIAL

This report was requested by RENEW Wisconsin to examine the effect of two policies designed to stimulate the growth of solar energy in Wisconsin. We begin with a brief overview of TPO and RPS policies followed by a summary of Wisconsin's current policies and historical solar market

trends. We then summarize the policies being implemented in Colorado, Minnesota and North Carolina to set up our discussion of three policy alternatives for Wisconsin.

The three policy alternatives are:

- Raising Wisconsin's RPS and including a solar carve-out
- Allowing TPO in Wisconsin but keeping the current RPS
- Allowing TPO and implementing an RPS that includes a solar carve-out

For each policy alternative we create projections for the amount of solar capacity that could be installed if these scenarios were adopted, economic development, and job creation. We conclude with our recommendations for policymakers, regulators and other stakeholders.

Client: **RENEW Wisconsin**

Team: **Ben Kuldunski, Jaiqi Lu, Jose Medina**

Professor Paul Wilson is supervising three EAP capstone projects during the spring 2015 semester:

PROJECT: EAP students will analyze Wisconsin Public Service's (WPS) formal application for a Certificate of Public Convenience and Necessity (CPCN) to build a 400 MW natural gas combined cycle plant, titled Fox Energy Center 3. The application has been submitted for approval to the Public Service Commission of Wisconsin (PSC) pursuant to Wisconsin Statute §196.491(3) and Wisconsin Administrative Code Chapter PSC 112 in Docket No. 6690-CE-202. The project team will answer two basic questions:

1. Is the project necessary to satisfy the reasonable needs of the public for an adequate supply of electricity?

2. Is the project in the public interest considering available alternatives?

Client: **RENEW Wisconsin**

PROJECT: EAP students will provide research and recommendations regarding how the Wisconsin Public Service Commission should account for the embodied energy in water lost from water utilities in regulation of water loss. Four central questions guide the research.

1. How much energy is embodied in treated water from pumping and treatment?
2. What characteristics of a water utility significantly affect the energy embodied in treated water?
3. What is the cost of embodied energy?
4. How does embodied energy compare to the water loss standard as regulatory alternative for water savings for drinking water systems in Wisconsin?

Client: **Public Service Commission of Wisconsin**

PROJECT: EAP students will perform an update to the City of Madison's Community Greenhouse Gas Emissions Inventory with 2014 data, and address additional questions:

1. What changes have occurred in greenhouse gas emissions since the previous inventory and what has caused these changes?
2. What sectors of Dane County are still heavy with GHG emissions and what is recommended to abate these emissions?
3. Will meeting future GHG emissions targets also benefit air quality, and what impact will this have on changes in public health in Madison?

Client: **City of Madison** ♦

Send professional updates, job announcements, meetings and activities to:

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