The Institute for Energy Studies at Western Washington University exists to meet the demand for education and training related to human production and use of energy through interdisciplinary programs that combine the fields of science, technology and engineering with economics, business management, public policy, and sustainability.

We are working to develop new undergraduate degrees that combine the science, policy, and technology of energy. We are guided in our approach by energy experts, an emphasis on student research, and faculty commitment to a core curriculum.

Our first academic program was a minor in energy policy that was created in the fall of 2012 and we graduated our first cohort in the spring 2013. That program currently has over a dozen students enrolled and many more expressing interest.

Our programs integrate research and outreach with a unique interdisciplinary curriculum. The curriculum will include a BA degree, a BS degree, and the option to minor in policy and economics, or science and technology. Graduate degrees will also be offered.

Students will gain core competencies in energy related science, policy, technology, economics, and business and have opportunities to participate in energy research with nationally recognized faculty-mentors.
I was in the Siberian Arctic a year ago doing field research when I heard the news from President Bruce Sheppard that the Institute for Energy Studies was being fully supported using permanent funding from the state of Washington. Funding the Institute was a brave commitment by the University and reflects the hard work done by our Advisory Board in explaining to lawmakers why the state needs a broadly trained energy workforce and how we could work together to provide one. Despite the excitement of the work I was doing in Russia at the time, all I could think about was coming back to Bellingham and getting to work on building the best interdisciplinary energy program in the country. We have achieved so much in this past year, that I hardly know where to start. Here are a few highlights.

During the year we have successfully hired five new permanent energy faculty into. (See New to the Institute below.) These new faculty are all assistant professors appointed into wonderfully disparate departments: economics, engineering, chemistry, environmental science, and environmental studies. Hiring them is going to allow us to lock in the teaching capacity for the energy policy minor (which currently has about two dozen students), create an energy track in our electrical engineering major, create a minor in energy materials, and create a brand new Bachelor of Arts degree in Energy Studies. The amount of work we did this year to hire our new faculty was tremendous but looking forward to what we have yet to do is wonderfully exciting.

We’ve also seen tremendous support from our industry partners in donating their time to come to campus to work with our students as well as providing internship and employment opportunities. We are embarking on a major lab renovation using private money to build a new electrical engineering lab, as well as funding summer research for students to travel to conferences and competitions. The support of unrestricted private dollars is an unbelievable resource for us and allows us to be nimble and able to support the best and brightest on campus – whether they are students looking for seed money to get a research project off the ground or faculty working on designing new classes for our academic programs.

In addition to developing top-notch academic programs for Western’s students, we are beginning a partnership with Bellingham Technical College and the Pacific Northwest Center of Excellence for Clean Energy. With a newly funded grant from the National Science Foundation we are partnering to help the technical college to develop an Associate in Applied Science-Transfer Degree in Sustainable Energy which will offer both preparation for technician level employment and the option of seamless transfer to the energy programs we offer at Western.

We’ve done a lot in the past year and we have a lot to do. Our students know that energy is what makes society function and they know that they’ll need to understand the science, policy, and economics of energy to make the world a better place. Their expectations are very high and our work over this next year is to meet exceed those expectations.

Andy Bunn
Director, Institute for Energy Studies

WWU Graduate Student wins $20,000 in Business Plan Competitions

For the last several years, Chemistry Profs. David Patrick, John Gilbertson and Janelle Leger along with their collaborators in Math and Physics and a team at the University of Washington, have been developing new solar concentrators for producing solar energy. Earlier this year they filed a patent application for their invention, which Gilbertson describes as, “an exciting breakthrough in low cost, high performance solar concentrators.” The team, which called themselves Nova Solar Technologies, developed hypothetical sales marketing materials, a financial plan, and spent many long hours building a functioning prototype. Patrick concludes, “These students have done an amazing job. I can hardly wait to see what they do next.”
The most interesting and most pressing energy questions are all interdisciplinary. Western’s Institute for Energy Studies encourages reaching across disciplines to answer these interesting questions and to teach students how to ask and answer them for the future.

Sharon Shewmake

MEET OUR NEW FACULTY:

Morad Abdelaziz:

Morad Abdelaziz is an Assistant Professor of Engineering and new permanent member of the energy faculty. Morad is an electrical engineer who is coming from the Department of Electrical and Computer Engineering at the University of Waterloo in Ontario. Morad is an expert in smart grid development and renewable energy integration. He’s worked for seven years doing original research and developing innovative solutions in the areas of power systems, renewable energy and power electronics. Morad is eager to develop projects involving students and local industries.

Charlie Barnhart:

Charlie Barnhart is an Assistant Professor of Environmental Sciences and new permanent member of the energy faculty. Charlie is coming to Western from a post-doctoral fellowship at Stanford University where he worked on the Global Climate and Energy Project. Charlie trained a physicist and now spends his time thinking about integrated energy systems with a recent focus on how wind and solar resources can be paired with energy storage in economically viable ways. He’s also one of the hosts of a popular science podcast called “Science… Sort Of” (http://www.sciencesortof.com).

Sharon Shewmake:

Sharon Shewmake is an Assistant Professor of Economics and new permanent member of the energy faculty. Sharon is starting her second year at Western and taught many of our energy policy minors last year. She’s an expert in the economics of transportation in terms of both energy and environmental impacts. Sharon is already actively engaged in including undergraduates in her research program.

Tom Webler:

Tom Webler is an Assistant Professor of Environmental Studies and new permanent member of the energy faculty. Tom comes to Western with decades of experience in energy policy having worked as a senior researcher at the Social and Environmental Research Institute in Amherst, MA as well as a wealth of teaching experience at Antioch College in Keene, NH. Having trained as an electrical engineer before switching to the social side of energy use, Tom brings exactly the kind of interdisciplinary experience that we inculcate in our students.

Tim Kowalczyk:

Tim Kowalczyk is an Assistant Professor of Chemistry and new permanent mem-

ber of the energy faculty. See a profile on Tim above.
The minor gave me a strong background and appreciation for the complex interplay policy, economics and environment have on our use of energy.

NEW TO THE INSTITUTE:

Tim Kowalczyk is a new permanent member of the Institute’s faculty. Tim is a computational chemist and material scientist who works on modeling photophysics and photochemistry in solar energy materials as well as quantum chemical methods for simulating molecular self-assembly. Tim comes to Western after a two-year prestigious post-doctoral fellowship at Nagoya University in Japan. Tim had several other job opportunities but chose to come to Western because of our strengths in material sciences and to work in a dedicated interdisciplinary environment. When asked about what gets him excited about the Institute, he replied, “An informed, holistic perspective on energy will be expected in future leadership roles across industries and government. From a tailored core curriculum to research and internship opportunities, the singular feature that sets the Institute apart in my eyes is that it places students at the center of the action.” We are thrilled to have Tim working with senior energy faculty to design our new minor in energy materials.

ALUMNI SPOTLIGHT:

I attended Western for a fifth year on the hunch the new Energy Policy minor would give me a fundamental understanding of energy policy and a competitive edge when I started searching for my first job. Both bets paid off! The minor gave me a strong background and appreciation for the complex interplay policy, economics and environment have on our use of energy. It also gave me a strong foundation to be conversant in energy issues and add value in my first two jobs after college: an internship with Trane and a project assistant position with APCO Worldwide.

The minor’s emphasis on understanding the practical aspects of energy generation systems helped me comprehend and research similar systems that Trane sold to its customers. When I started working at APCO Worldwide, I was able to quickly analyze energy policies and track developments in different global energy markets.

Again, the minor provided me with the fundamentals so that I could hit the ground running. The knowledge I gained will be an instrumental part of my future endeavors.
In October, the Western Washington University Foundation will announce one of the most generous cash gifts ever received by the foundation. This gift, to support the Institute for Energy Studies program, will create a new electrical engineering lab space and establish an endowment for the energy studies program. The donors of this gift are recognized leaders in renewable energy systems are pleased to support the Institute for Energy Studies program and its goal to “educate the leaders for our clean and efficient energy future through interdisciplinary studies and research.”

Private contributions have been the backbone of support for the Institute for Energy Studies. Early investments from members of the founding advisory board totaled over $365,000 and provided the resources to build the program’s innovative, interdisciplinary curriculum. Their contributions provided the funding for faculty to develop, teach and refine new courses for the program; provided resources for new equipment and travel expenses; and to establish the first endowed scholarship for the program.

In addition to these generous financial contributions, the board also invested valuable time and expertise, providing critical input and advice to help identify key programmatic outcomes and learning objectives.

The board also advocated for public funding for the Institute for Energy Studies program, working diligently during the 2013 Washington State legislative session to help Western secure new funding. The board made a compelling case for the value of the program and its ability to help Washington State strengthen the clean tech/new energy economy. The board’s advocacy was so compelling that Western received a substantial budget increase which allowed the university to allocate nearly $1,000,000 per year to the Institute to hire the faculty needed to implement the BA in Energy Studies.

Key supporters of the program have included individual board members and the companies they represent. The establishment of the Institute for Energy Studies program would not have been possible without their support and their financial investments in the program.

Manca Valum
Director of Advancement for Strategic Initiatives | University Advancement

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$1,000,000 to $4,999,999
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William D. Ruckelshaus
Anonymous

This gift will create a new electrical engineering lab space and establish an endowment for the energy studies program.
FOR MORE INFORMATION:

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