



# The Richard G. Lugar Center for Renewable Energy



Quarterly Newsletter  
Volume 1, Issue 4

January 2012

## Up and Coming

- \* Mark your calendars for The Lugar Center Retreat on January 13th.

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## Meet Our New Director, Dr. Peter J. Schubert

On September 13, The Lugar Center officially welcomed our newest member, Dr. Peter J. Schubert as our new director.

Dr. Schubert brings over 25 years of research and industry experience from a variety of sponsors, including: the DOE, USDA, DOD, and NASA. This experience and expertise will certainly serve the Center and the University well.

Dr. Schubert does not believe in any single solution to a sustainable energy future. Instead, says "a truly sustainable portfolio of renewable energy technologies requires a wide range of integrated systems. With the resources, connections, and talent available in Indianapolis, I believe it can begin right here. And IUPUI play a big part."

Schubert received his Ph.D. in Electrical Engineering from Purdue University and spent 22 years with Delphi Corp. Before joining the Lugar Center, he served as the Senior Director of Space, Energy and Education Research for Packer Engineering.

Thirty-five patents have been granted in Schubert's name, including his most recent and first in the field of firearms, an automatic shot counter for the Department of Defense. This new technology has the potential of saving the Pentagon millions of dollars in defense budget dollars.

Schubert's impressive resume also includes over 40 technical publications from a variety of subjects including: artificial intelligence optimization, MEMS device



-Dr. Peter J. Schubert  
Director, The Richard G. Lugar Center for Renewable Energy

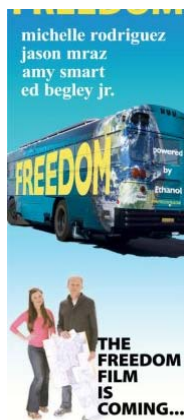
design and optimization, and rollover accident reconstruction.

As we embark on 2012 and continue to address the need for alternative energy sources through research and development, The Lugar Center is confident Dr. Schubert will bring a lot of positive "energy."

## Freedom Tour Makes Stop in Indy

On September 30th, The Lugar Center, along with POET Bio-Refinery and Green Planet Productions came together to host a prescreening of *Freedom*, an eye opening documentary about one solution to the energy security of the United States.

Inspired by the Gulf Coast spill of 2010, *Freedom* documents one of the many disastrous effects, of our unsustainable addiction



to the non-renewable energy source, petroleum. The film featured interviews with former speaker of the House, Newt Gingrich; singer-songwriter Jason Mraz; author Deepak Chopra; among several others.

When The Lugar Center heard *Freedom* would be traveling through Indianapolis, we jumped at the opportunity to engage our students, faculty, and local residents on the key issues of energy security and renewable energy.

The Sundance Award winning

filmmakers, Josh and Rebecca Tickell were available afterwards to shake hands, answer questions, and tour the ethanol powered bus which had traveled from California to Washington D.C. promoting the completion of the documentary and educating the masses.

The word freedom is defined as independence or exemption from external control. This film shows that this country has the sources to take back it's freedom. The question is, will we speak up and change our ways.

## New Interns = New Material

As many of you may already know, The Lugar Center was fortunate enough to gain a new director AND two brand new interns this fall semester—Melanie Williams and Tim Kravchuk.

Melanie is a senior with an English major and served as our new Communications/Marketing intern. Tim is a sophomore with an Information Technology major and served as our website designer and IT go-to guy.

New interns mean fresh, new ideas and you know what that adds up to—new material. So, be looking for a brand new look this spring.

Together, they've been trying to promote The Lugar Center's research expertise and outstanding accomplish-

ments. We've kept them extremely busy creating a brand new website; helping out with special events like the Energy Summit, Eli Lilly's Energy day, and the Freedom documentary; interviewing our researchers, creating new marketing material, updating our blog, creating newsletters, and networking through social media.

Melanie will continue her internship here at The Lugar Center until graduation in May, when she'll start looking for full-time employment in the non-profit sector. Williams says "This is where it's at for me! Writing about important issues, such as renewable energy, makes me feel like I'm doing something to make the world a better place. There's nothing more rewarding than that."

Tim is considering Graduate School at IU Bloomington in Information Science and looks forward to a career in data management.

We hope each of you had the pleasure of meeting our interns. It's been a fantastic semester working with these fine students. The Lugar Center would like to wish them lots of luck in their future endeavors.



-Tim Kravchuk  
Website Designer  
(photo unavailable)

-Melanie Williams  
Communication/Marketing Intern

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-Melanie Williams

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## Another Successful Lugar Collegiate Energy Summit

It was nice to see so many energy security and environmentally conscious students and businesses pack the Museum of Art on September 16th for another successful Energy Summit.

This year's summit was encouraging, inspiring, and had many of us all "charged" up! We heard what several other universities and colleges in our state are doing to raise awareness and get others involved in energy sustainability and climate issues.

Students from organizations like BEAT, Ball State Energy Action Team, and the Franklin College Earth Club, presented the creative ways they have been

making a difference on campus.

These projects included: an energy challenge that awarded a grand prize to whichever dormitory decreased their energy use by the highest percentage by Ball State's BEAT, a tray-less cafeteria which reduced the amount of water used by over 1,000,000 gallons by Franklin College, and the successful production of bio diesel from the cafeterias cooking oil, among many others.

These are just a few of the colleges and universities that are making big steps in changing the way students perceive and use energy.



U.S. Senator, Richard Lugar speaking to a local radio station

Senator Lugar was the keynote speaker for the event and I'd have to agree with him when he said "Indiana is home to some of the best and brightest students in the nation." With the innovative solutions these students are producing, combined with research expertise and good policy, we can be sure Indiana will be recognized for its commitment to a sustainable, "green," energy in the future.

## IUPUI, one of only 24 schools nationwide to receive DOE award

On September 13, 2011, Energy Secretary Steven Chu announced that Purdue School of Engineering and Technology at IUPUI had been selected to receive a \$1.3 million grant from The Department of Energy to create an Industrial Assessment Center program.



Dr. Jie Chen, Department of Mechanical Engineering at Purdue School of Engineering and Technology

IUPUI is one of only 24 schools nationwide to receive the grant and the only school in Indiana.

Dr. Jie Chen served as the Principal Investigator (PI) on the project. Chen led the team of researchers, which included Dr. Ali Razban, Dr. David Goodman, Dr. Jian Xie, Dr. Sohel Anwar, and Dr. Joe Abella who won the DOE award. Chen says "The School of Engineering and Technology is well positioned to support the DOE's mission. The strong energy research and newly established BS in Energy Engineering program provide the unique foundation for the energy efficiency training."

The IAC program will train 10-15 students per year on how to manage energy most efficiently. Engineering

students will receive extensive training in industrial processes, energy assessment procedures, and energy management principles. This will provide the necessary training in an area of growing importance in this country.

Purdue School of Engineering and Technology's Dean, Dr. David Rus-somanno, said "our new B.S. degree in Energy Engineering, recent additions of experienced faculty members and our Richard G. Lugar Center for Renewable Energy are investments that will enable us to significantly contribute to the goals of the DOE's Industrial Assessment Center Program."

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**"We saw this program as an opportunity for our students to apply their learning in the real world and help Indiana industries become more energy efficient."**

- Dr. Razi Nalim,  
Associate Dean of  
Research and Graduate  
Programs

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The Richard G. Lugar Center for Renewable Energy was established in March 2007 to address the societal needs for clean, affordable, renewable energy sources, improve the nation's energy security, and reduce global warming.

Located in downtown Indianapolis in the Purdue School of Engineering and Technology at IUPUI, its primary mission is to promote research excellence in the area of renewable energy through collaborative efforts among faculty in the disciplines of engineering, chemistry, physics, biology, and environmental affairs. It will promote renewable energy applications through teaching, learning, civic engagement, and synergistic partnerships with industry, government labs and local communities.

Find us at  
[www.lugarenergycenter.iupui.edu](http://www.lugarenergycenter.iupui.edu)

## Dr. Iseley launches Waste to Energy Research Team

The Lugar Center is proud to announce the launch of our newest research initiative—Waste To Energy.

The team, which consists of undergraduate student, Jake Rardin, and graduate students Bugra Aslan, Hamed Zamenian, and Matt Ray, will be led by Dr. Tom Iseley.

During the summer of 2011, Rardin assisted Dr. Iseley in conducting an extensive international survey of the WTE industry. While the focus was on transforming municipal solid waste (MSW) to electric power utilizing pyrolysis, it was not limited to this technology.

The current solution to MSW is to bury it or burn it. Landfills throughout the world are reaching capacity and available land is scarce. Incineration can reduce the volume of MSW and produce various sources of energy; however, the emissions are rapidly becoming unacceptable due to global climate change concern.

This concern has inspired global research for the next generation, which seem to include pyrolysis, gasification, and plasma technologies. While these technologies are not new, their application to transferring MSW to electric power is relatively new.

The team plans to continue the assessment, create a technical report and spreadsheet summary of their

findings, identify industry development trends, define a system of standard terminology, as well as develop recommendations for future focus.

Their ultimate goal is to develop an industry which absorbs waste and capitalize on its fundamental properties to create a source of useable energy.

