

Moving the Needle to Energy Independence



The Conn Center for Renewable Energy Research & Environmental Stewardship

UofL is answering Governor Beshear's call to lead the state's efforts in renewable energy research and sustainability by collaborating to establish the Conn Center for Renewable Energy Research and Environmental Stewardship. Here's how we plan to really move the needle:



Energy Storage/Batteries

Conn Center will:

Join with UK in partnering with the U.S. Department of Energy's Argonne National Laboratory to establish a national Battery Manufacturing R&D Center.

Bringing Kentucky:

A new Lithium Ion Battery Manufacturing Lab focused on making small batteries for domestic production. This will help meet President Obama's goal of having 1 million plug-in hybrid cars on the road by 2015.



Biomass/Biofuels

Conn Center will:

Provide technical expertise and testing facilities to support goals of Governor's Task Force on Biomass & Biofuels and Governor's Energy & Agriculture Partnership.

Bringing Kentucky:

New private investors to build plants to process biofuels with our research expertise. Will build on UofL relationships with industry partners such as Benefuel, Unitel, Sudchemie and Sodexo.



Energy Efficiency

Conn Center will:

Develop the technologies for cost effective, zero-energy buildings.

Bringing Kentucky:

The tools Kentucky businesses, schools and residents need to reduce energy consumption.



Solar Energy

Conn Center will:

Recruit a team of experts to research conversion of sunlight directly into electricity with photovoltaic cells, solar collectors and thin films.

Bringing Kentucky:

Human capital and new talent to set up a unique, flexible manufacturing R&D line for developing cost-effective, solar cell technologies for large-scale energy production.



Materials Manufacturing & Characterization

Conn Center will:

Focus on applied research — the discovery of solutions to practical problems — then demonstrating what is discovered can work in the real world.

Bringing Kentucky:

Collaborations with different industries to create scale-up manufacturing of new materials—making them cost-effective and in usable quantities.

A Message from Dr. Ramsey

Dear Kentucky Policymaker,

At UofL we truly are dedicated to living green. Just check out the story (page 2) on our "green" dorm room and you'll see we really do live by this commitment.

Last year I made a pledge when I signed the American College & University President's Climate Commitment and the Talloires Declaration that UofL will incorporate sustainable and

environmental literacy into our teaching, research, outreach and operational efforts. Since then we have made both large and small changes, including the largest energy audit in UofL history. All are adding up to make a big difference in our carbon footprint. Be sure to check out the UofL carbon footprint and savings calculators in this Report to learn how we are making a difference on the environmental and budgetary fronts.

Along with changing our own behaviors, we are driven toward finding solutions that will secure energy independence for the nation and world. In the spirit of HB1, the Conn Center for Renewable Energy Research and Environmental Stewardship will provide leadership, research, support and policy development in renewable energy.

The Kentucky General Assembly has passed energy legislation that is paving the way for the Conn Center to begin its work. UofL is ready to rise to the challenge of bringing energy independence to Kentucky's citizens, students and businesses.

Sincerely,



A Carbon-Neutral, 100% Post-Consumer Report

This issue marks the debut of our truly green *President's Report*. Printed on 100 percent, post-consumer recycled paper, emissions produced in shipping this *Report* were countered by carbon offsets that help fund renewable energy projects.

Our carbon offsets purchase was dedicated

to NativeEnergy to help build a new wind farm at Greensburg, Kan. Greensburg is the site of a 2007 tornado that destroyed 95 percent of the town. It is committed to rebuilding as the "greenest town in America."

The carbon offsets will help fund 10 new wind turbines that can provide enough clean energy to power nearly 4,000 homes.



It is easy being Green

UofL continues to focus on being environmentally friendly. Check out how we're lowering our carbon footprint:

Making the Honor Roll UofL tied with Berea College as Kentucky's top "green" school in a grading of more than 330 U.S. and Canadian schools by the Sustainable Endowments Institute. Earning an overall B+, UofL received an A in five of nine categories: administration, climate change and energy, transportation, endowment transparency and investment priorities. Since President Ramsey signed the American College and University Presidents Climate Commitment last year (a campaign to stop global warming), UofL has begun a \$21.7 million project to trim energy use, compiled its first greenhouse gas emissions report, formed a university-wide sustainability council and hired a new sustainability coordinator. Learn more at greenreportcard.org.



Cook It, Then Book It! How can french fries run a bus? In a pilot recycling program, UofL's chemical engineering students are converting used cooking oil from campus food facilities into biodiesel fuel that helps power a UofL shuttle.



Retrofitting Buildings and Saving Big on Energy Costs

UofL is reaping big energy savings in one of our main classroom buildings, Strickler Hall, by switching to low-energy lighting and motion sensors. The improvements are part of our Siemens Co. energy audit initiative that promises to eventually save \$6,400 in energy costs per day on Belknap Campus.

UofL's First Green Dorm Room With a clay wall and bamboo flooring, it's safe to say that the room UofL student Anna Roeder shares with Katy Hartman is a little unusual. In fact, their room in Louisville Hall is unique to campus. The two live in UofL's first green room and are helping determine what works and what doesn't in sustainable housing. Along with the clay and bamboo, the experimental room boasts energy- and water-saving features and large windows for natural light. It was designed by UofL students in a sustainable architecture course.



Making a difference Conns Advance Energy Research



When Henry and Rebecca Conn pledged more than \$20 million to the J.B. Speed School of Engineering to foster research on alternative energy technologies, they jumpstarted an initiative designed to propel Kentucky into the future.

"We were looking for one cause to significantly support in an effort to make the needle move, to really make a difference," says Henry Conn, a UofL engineering and business alumnus who is an author and senior executive adviser for corporations around the world.

The Conns' gift—the largest individual donation ever to a public university in Kentucky—will help found the Conn Center for Renewable Energy Research and Environmental Stewardship. The Kentucky General Assembly established the center in 2006 to provide leadership, support and policy development in renewable energy but provided no money for the project.

Henry Conn says the vision for the center coincides with what he has been advocating for in recent writings, speeches and a book in process. "... [It] was so compelling that we bought in full-bore," he says. "Obviously, the fact that Speed was the genesis for all of our success in this world didn't hurt, either."

The Conns envision the center as a place "where the science, the research, can take place," regardless of whether there is a market yet for such technologies, Conn adds.

"Otherwise when gas is \$6 a gallon in five years, everybody will stand around and say, 'Now what will we do?'"



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UofL CARBON FOOTPRINT



Through the Siemens energy audit UofL will lower its carbon footprint by:

55 million pounds of GHG emissions.

This is equal to:

- Removing 4,600 cars from the road
- Planting 177 acres of trees

UofLSavings Calculator

- Energy audit by Siemens Co. to reduce energy costs **\$3M recurring**
- Negotiated with city's sewer district to use 80% of our annual storm water charges for university storm water management projects **\$150K recurring**
- Installed more efficient HVAC systems in several buildings **\$20K recurring**
- Implemented campus-wide energy management initiatives **\$150K recurring**

