Welcome to Missouri S&T’s Research Experience for Undergraduates (REU) program on Technologies for Renewable Energy Generation and Management! Missouri S&T has a variety of projects involved in all aspects of our nation’s energy future. This REU program provides an opportunity to get paid to participate in advanced research. Participation in this nine-week program includes:

- An exciting opportunity to join an interdisciplinary team, with fellow researchers in electrical, computer, geological, architectural, and environmental engineering
- A foundation in the skills needed to perform research and effectively present your results
- A $4500 stipend plus housing, meals, and a transportation allowance
- An opportunity to enjoy outdoor activities in the Ozarks.

We look forward to working with you!

About Renewable Energy
Our nation’s energy future depends on the effective implementation of renewable energy technologies. Today’s energy picture is dominated by fossil fuels, which are in limited supply. The nation and the world need energy generation technologies that are not depleted as we use them.

The main renewable energy sources are wind, solar, hydro, and biomass. Wind turbines are already widely used, but their high variability as the wind speed changes has a negative impact on the power grid. Solar technologies are growing but are still economically challenging, so innovations are needed to reduce cost and increase performance. Conventional hydropower, using dams, has already maxed out its potential, so Missouri S&T is studying emerging technologies to get energy from free-flowing currents. Biomass technologies provide a way to make use of waste materials from farming, forestry, and other related industries.

In this REU program, participants may study a wide range of topics related to renewable energy generation or management. Generation refers to the conversion of the renewable source into some usable form, usually electricity. Management refers to techniques used to make sure the variability and other negative aspects of the renewable source do not affect the load (mostly through the use of energy storage).

Learn More
The Renewable Energy REU program is a nine-week summer program where ten undergraduates join faculty and graduate students to conduct exciting research projects in renewable energy. The program involves the departments of Electrical and Computer Engineering; Civil, Architectural, and Environmental Engineering; and Geological Engineering. It also uses some facilities with Mechanical and Aerospace Engineering.

Research Opportunities. Students will be assigned to projects that fit their interests, make use of their prior experiences, and provide growth and learning opportunities. Most projects will involve several other researchers (undergraduate, graduate, post-doctoral, and faculty). At the end of the summer, each participant will present his or her
results at a symposium and will also write a report. Participants will also have the opportunity to contribute to conference or journal papers.

**Interdisciplinary Team Environment.** Because of the inherently interdisciplinary nature of renewable energy, an interdisciplinary team of faculty has been assembled. Participants will generally work within a single discipline for depth, but will also collaborate with researchers in other fields. The cohort of ten participants will be housed together to foster cross-disciplinary interaction.

**Mentoring.** Each participant will be assigned a graduate student mentor and a faculty mentor who will be responsible for teaching the skills needed for the participant’s project and guiding him or her towards successful completion. In addition, participants will interact with other researchers to gain different perspectives on their work.

**Communication Skills.** Research has no impact unless it is communicated effectively. A seminar will be provided to discuss effective communication of research results. Each participant will write interim reports as part of the learning process. The summer will culminate in a research symposium with poster presentations from each participant and a final report. Depending on the nature of the results, the final report may serve as the first step towards a formal publication, such as a conference paper or a journal article.

**Extracurricular Activities.** Situated in the midst of the Mark Twain National Forest, Rolla has access to a wide variety of outdoor activities. Also, there are numerous energy companies and energy-related projects in St. Louis.

**Apply Today!**
Who: Undergraduate students in an engineering-related field, who will not have graduated before summer 2013, may apply. Participants must be US citizens or permanent residents.

What: Students must use the application form. In addition, you must submit transcripts (official or unofficial) and a short statement describing your interests, background, experience, and how your participation in this program will help you reach your long-term goals.

When: The program dates are June 3 – August 2, 2013. Applications must be received by March 1, 2013. Decisions are expected approximately April 1.

**Rolla, MO**
http://www.mst.edu/community/

**Contact Us**
Sandee Champ, sacwvd@mst.edu – inquiries and/or applications

Dr. Jonathan Kimball, kimballjw@mst.edu