

Affiliated with the Dept. of Biochemistry, Chemistry & Physics

Issue 3 July 2010

### CAFES at the State Capital

#### NSF Renovate Grant \$484,000

The CAFES and the Department of Biochemistry, Chemistry & Physics NSF renovation proposal was selected for funding. We are waiting on the final decision which would bring nearly a half million dollars to renovate our research laboratories. We are very pleased that in these difficult financial times NSF would consider our research and programs for such an investment of resources.

#### CAFES in the NEWS

Over the past year CAFES has been in three different newspapers and one magazine totaling some six articles. We have also presented to the MO legislature life science tour and Senator McCaskill's office. We have participated at US Rep. Ike Skelton's procurement conference, Ingram's Magazine Energy round table, and the Solar Challenge/Energy Fair at the state capital. In addition, the CAFES have given some ten professional presentations and published three papers. We have completed the 1.3 million dollar grant from the US Army Research laboratory with Hi-Tec LLC to provide diesel fuel for forward operating bases. We are still working with Hi-Tec to build a 24 hr operating plant on the principles of the grant period.

[Recycling tires could aid troops](#)

[UCM Faculty, Students Expand Research on Alternative Fuels](#)

[UCM's Alternative Fuels, Environmental Systems offers students research](#)

[UCM holds open house at Energy Park and Learning Center facility](#)

[Unterrified Democrat Aug 19 2009](#)

<http://www.sedaliademocrat.com/news/span-24605-font-style.html>

### CAFES Welcomes 10th Client on First Anniversary and Completes 1.3 million Dollar Research Program With Hi-Tec for US Army

The CAFES has celebrated its first birthday since the UCM BOG officially recognized the center. We welcome the CAFES tenth client, Watkins Inc. We will be working with the Minnesota based company in the area of process and development of their secondary products and recovery systems.

Our client list is growing and with our Partner-

ship with the Entrepreneur Zone at UCM we will add other services including energy and green credit auditing for businesses.

During the first year the CAFES has met its goal to be a revenue positive center to UCM. With the aide of hundreds of volunteer hours from CAFES research associates, tangible gifts in-kind from company friends and over a million dollars in fund-

ing the CAFES has been able to reach its net positive revenue position in the first year. Now we hope to expand our client list and services to better serve the business, education and academic communities of central MO.

**CAFES**  
<http://www.protostardesign.com/cafes/>  
**IESD Entrepreneur Zone**  
<http://www.protostardesign.com/cafes/March2009Newsletter.pdf>

### New Energy Equipment Designs Showcase CAFES Collaborations With Industry

New energy related equipment designed by CAFES and Hi-Tec, LLC arrived at UCM. The bioreactor is completed and the mobile pelletizer will be completed in July. The mobile pelletizer designed by CAFES and Hi-Tec, LLC will provide a platform for 800 lbs/hr pelletization of biomass. We hope further development of the mobile units will provide patentable models. In July, the first 20 acres of switch grass was planted at the airport with help from Dr. Kidwaro, Agriculture

Chair and CAFES research associate. We will be able to sequester about 20 tons of carbon each year once the grass takes. The pellets will be given away with donations to pay for land management and offset costs of outreach programs. We are working with a customer to provide a great deal more biomass that would allow us to get a permanent modest revenue stream from the pellets when we expand to a couple hundred acres.

### CAFES Introduces New Energy Assistance Program

The energy assistance program is off to a fast start. We have been in contact with several superintendents and school administrators interested in partnering with the CAFES. The assistance program will help schools evaluate their energy needs and plan for future energy and mechanical infrastructure. We hope to develop long lasting relationships with the school districts to help them with their energy reduction goals and at the same time spark interest in math and sciences with students. See the Sedalia Democrat article below.

**Energy Assistance Program**  
<http://www.sedaliademocrat.com/news/span-24605-font-style.html>



*“The CAFES hopes to host more than 1000 students and several community groups per year in outreach programs.”*

*“Recruiting aspects of the outreach activities are going well. Chemistry has nearly doubled its new admits this year and is on target to be one of the largest new admits departments in the college, which is not typical for a physical science department.”*

### CAFES FACTS

- Participated in over \$1,300,000 of grants on CAFES activities
- \$28,000 tangible in-kind gifts from company partners
- 100s of hours of gifted labor from CAFES associates and company partners
- Gifts in-kind and overhead captured from grants greatly exceeded minimal outlays
- Solar and Wind resources will offset energy costs at CAFES facilities
- Published three papers last year
- Presented over 10 papers last year
- Participated in US Rep. Ike Skelton’s Procurement Conference 2009
- Invited participate in Ingram’s Magazine Energy Round Table
- Invited participant in Solar Challenge Innovation/Energy Fair at the MO state capital
- Participated in the IESD energy alliance round table

*You are never too young to become a cafes research associate, come on out, learn about emerging fields !*



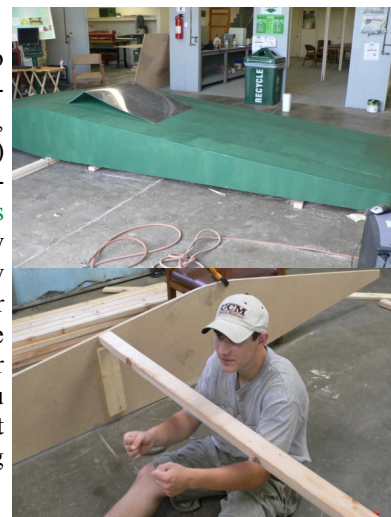
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## KCPL Set to Net Meter CAFES at UCM

KCPL is set to net meter CAFES at UCM. After long delays waiting on FAA approval and wind turbine wiring problems CAFES is finally ready to go on the grid with its solar array and wind turbine. It is expected that over the course of the year the energy needs of the CAFES will be met with alternative fuels including electrical costs for the production of the biomass pellets and bio-diesel facility. We are aiming for net positive revenue position. We want CAFES to be completely self-sustaining to be able to offer services at rates start up companies and schools can afford.

### CAFES Solar CAR Racer is off the Starting Line

Students at CAFES begin a solar race car with hopes of and community functions to its unveiling at the UCM promote the CAFES, De-homecoming 2010. Besides partment of Biochemistry, being a great project on al- Chemistry & Physics (BCP) ternative energy for under- and the university. The so- graduates the solar race car lar racer (name suggestions is expected to be an integral welcome) will have a few part of the CAFES and de- modifications that will allow partments’ outreach and it to be driven in poor solar recruiting efforts. In the long conditions year round. We run we hope to build a racer are presently looking for that could qualify for na- sponsors for the car. If you tional competition but in the are interested in helping out meantime it will be exhib- with the car or sponsoring ited at university, schools the car , give us a call.



### Outreach Programs in Full Swing with Kauffman Scholars

The outreach programs are off and running this summer with the Kauffman Scholars in June. Forty five high school students from Kansas City spent six hours at the CAFES learning about alternative energy and environmental science. The CAFES will be busy this summer with the summer science camp and a state fair booth. This fall we will have several schools visiting the facility. The CAFES hopes to host more than 1000 students and several community groups per year in its outreach programs.



### Thanks to all of our Friends, Collaborators & Associates

Hi-Tec, LLC (Bonnets Mill and Jefferson City, MO); Universal Asset Management (Harrisonville, MO); Mid-America Renewable Energy Solutions (Lone Jack, MO); Pave Guard LLC (Lee’s summit); Institute for Entrepreneurial Studies & Development (Warrensburg, MO); Show-Me Energy (Centerview, MO); D & Y Laboratory (Holden, MO); Mike Joanes (Kansas City, MO); Enersys Inc. (Warrensburg), Ameret, LLC (Lenexa, KS)

The CAFES thanks our friends for their support. These collaborations provide many exciting opportunities for UCM students. We are always looking for additional clients, sponsors and researchers. Drop us a line today!

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