You are cordially invited to join UCF College of Engineering & Computer Science undergraduate students showcasing their innovation, research and talent in Renewable & Sustainable Energy at the Progress Energy Senior Design 2nd Annual Symposium. The Symposium is free and open to the public.

**Presentations & Exhibits Include**

- On the Green - Bolt on Hybrid Conversion Kit
- Green Diesel Hybrid - Diesel Conversion
- Organic Rankine Cycle for third world power generation
- Solar Thermal Energy Storage
- Solar Powered Stirling Buoy
- Power Allocation Phase 3: Lift Stations, Water Treatment and Reclaim Water Facilities
- Vertical Axis Wind Turbine
- Hydrogen Fuel Cell UAV
- Bike Buddy - Human powered bicycle accessories interface
- Wind Turbine: Train Tunnel Application
- Solar Powered Car Cooler
- Water Tunnel for Turbine Blade Testing
- Solar Water Distiller - Desalination of water for third world countries
- calBox 360 - Human Powered video game console interface
- Wireless Solar Panel Monitoring
- ASHRAE HVAC System Design and Selection
- Solar Parabolic Trough

**Engineering Talent for The Next Wave in Renewable & Sustainable Energy: The UCF Commitment**

In keeping with the university mission and commitments, the UCF – Progress Energy Senior Design Symposium is focused on developing socially conscious engineering projects in Renewable & Sustainable Energy. UCF President John Hitt is a member of the American College & University Presidents Climate Commitment Leadership Circle. An ambitious new Climate Action Plan strengthens UCF’s status as an innovative leader in “green” operations, classes and research. The plan will guide the nation’s third-largest university as it works to meet President Hitt’s pledge to become climate neutral by 2050.

During their senior year, UCF College of Engineering & CS students bridge the gap between academic and professional experience by participating in year-long design projects that involve Renewable & Sustainable Energy. Along with their faculty advisors, engineering students work to develop innovative product proposals, conduct the design analysis, design and build a prototype, prepare engineering reports, and present at the Progress Energy Senior Design Symposium in Renewable & Sustainable Energy. Besides showcasing engineering innovation and talent development for the next wave of UCF engineers in the Clean Energy Sector, results include invaluable experiences in project management, leadership and teamwork building.

For more information please contact: (407) 823-2156
CECS Senior Design Teams

Materials, Mechanical and Aerospace Engineering (MMAE)

On The Green - Bolt On Hybrid Kit This self installed conversion kit will convert a gas powered vehicle into a fuel saving gas-electric hybrid.

True Green - Green Diesel Hybrid The diesel hybrid is an electric golf cart that generates its own electricity with use of a diesel engine that runs off of pure vegetable oil.

Organic Rankine Cycle - Power Generation for Third World Countries This system is created from salvaged automotive parts in hopes of providing 3rd world nations a means of affordably producing power.

Solar Thermal Energy Storage System This system captures solar heat to store thermal energy to provide an eco-friendly means of heating water.

Solar Powered Stirling Buoy The Stirling engine will run from solar-thermal power.

Solar Parabolic Trough A solar trough that focuses heat from the sun will heat water to power the Organic Rankine Cycle.

Vertical Axis Wind Turbine An affordable wind turbine designed for residential use to generate electricity and to reduce the power costs for homeowners.

Wind Turbine: Train Tunnel Application This project will show that it is possible to recapture energy caused by pressure differences as a train travels through a tunnel with use of turbines installed in air chutes.

Solar Powered Car Cooler Using solar powered device that will keep parked cars cool will reduce costs and emissions caused by automotive air conditioning.

Water Tunnel for Turbine Blade Testing The water tunnel is modular testing device that will allow for numerous test samples and situations. The water is re-circulated, minimizing waste and improving efficiency.

Solar Water Distiller A solar powered water desalination and purification station. This device can be used in poverty and disaster stricken locations such as Haiti.

Hydrogen Fuel Cell UAV This Unmanned Aerial Vehicle will run off of hydrogen fuel, leaving zero emissions.

Materials, Mechanical and Aerospace Engineering (MMAE) cont.

ASHRAE HVAC System Design Design HVAC equipment and systems using state of the art Building Information Modeling to provide an energy-efficient solution for Florida Hospital Ginsburg Tower.

ASHRAE HVAC System Selection Develop life-cycle cost process to select building HVAC system focused on sustainability for Florida Hospital Ginsburg Tower.

Industrial Engineering and Management Systems (IEMS)

Power Allocation Phase 3: Lift Stations, Water Treatment and Reclaim Water Facilities As the third phase of an ongoing project to improve the Seminole County Environmental Services, this phase will optimize rate scheduling and create a historical record of power usage to optimize costs.

Electrical Engineering and Computer Science (EECS)

Bike Buddy The bike buddy is an electric accessory hub for a bicycle that is powered by the rider. The hub will include devices such as a speedometer and GPS.

calBox 360 An Xbox 360 will be powered by the video game player. This will provide the user with exercise as well as save costs spent on powering the video game console.

Solar Panel Monitoring This system will allow solar panels to be remotely monitored for performance and maintenance issues. This will improve the efficiency of solar panel fields along with saving costs spent on manually checking each solar panel.

For more information please contact: (407) 823-2156

College of Engineering & Computer Science

UCF Stands for Opportunity