University of San Diego
ENGINEERING PROGRAMS

USD Engineering
Spring Open House and Project Exhibition
Friday, May 11, 2012
2:30 pm – 5:05 pm
Loma Hall 2nd & 3rd Floors

Bio VSS – An extensible package of sensors including a heart rate monitor, core body temperature and external temperature in order to successfully manage units in the field for both military and civilian personnel. Sponsored by KAB Laboratories.

CURL Environmental Lab – Without the proper tools to advance building and sustainability and efficiency, our current life style is not supportable. The proposed virtual simulator enables high fidelity replication of sustainable and efficient building environments. Sponsored by Siemens.

Electri-Cool Magnetic Slot Racing– This project will return slot car racing to its original glory using magnet technology, revolutionizing the hobby by the elimination of the slot itself. The result includes, but is not limited to, a car that no longer needs to be connected to the track, a track more closely resembling an actual track, and the drifting and motions associated with real racing. Sponsored by Magnetrack, LLC.

Emergency Vehicle Alert System – EVAS will become a device that sounds an alarm and flashes lights when an emergency vehicle approaches drivers from behind. It will be a cost-effective means of warning in the forward visual range before the sirens and lights of emergency vehicles are apparent. Sponsored by Henry Eisenson and Jim Ross.

Energy Relay Competition – This year's ASME competition is the Energy Relay, in which each team must design four vehicles to autonomously complete a relay race. Each vehicle must have unique onboard power source and be triggered by the previous vehicle.

Improving Drive-Thru Throughput at Quick Service Restaurants –Quick Service Restaurants derive much of their revenue from drive-thru operations, but little work has been done to analyze the layout of drive-thrus. The factors that have the greatest impact on customer wait times will be identified, and guidelines that can be used to design efficient layouts for the drive-thru operations will be developed.

Java Cores - Project aims to create a modern demonstration platform, using components found in current consumer electronics. This demonstrates the use of the Xpresso Core XC-110 developed by Java Cores to efficiently and quickly process Java™ directly in hardware. Sponsored by JavaCores.

Kinetic Fountain – The final design will be a transportable fountain that can be integrated into an existing fountain that will display of an array of jets that activate in response to a musical input.

L & T Machine Shop Process Improvement – L & T Precision has identified inefficient operations in their machining department as an obstacle to their growth. This project identifies recommendations to reduce setup times, and improve flow through the facility to reduce costs and improve productivity.

T-Shirt Folding Machine – The Automated T-shirt Folding Machine will output folded t-shirts precisely and efficiently due to a CNC process and the machine will be easily operated and maintained by a single person which will reduce the overall t-shirt production costs for companies.

Tennis Ball Design - An alternative tennis ball design that will lower the speed of the ball, without compromising the aerodynamic forces on the ball from the Magnus effect. This will lead to longer rallies and eliminate the current overwhelming service advantage.

USD e-Waste Facility Improvement – The operations in the e-waste recycling facility are inefficient and do not generate the maximum revenue to the University. This project will develop improved procedures and a facility layout that will allow the center to process more donation and increase revenue.

Wind Tunnel – The group is redesigning the controls and instrumentation for the wind tunnel and creating three new experiments for the wind tunnel, two fluid dynamics experiments and one heat transfer experiment.