

# INDUSTRIAL SOLUTIONS LABORATORY SENIOR DESIGN

**SAVE THE DATE!**

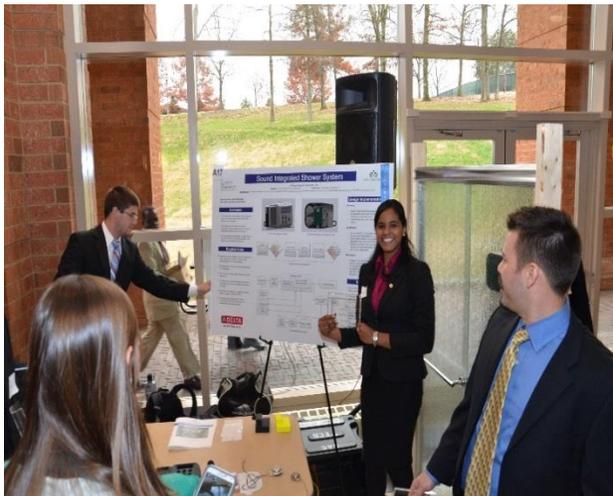
**SPRING 2015 Expo**

**Thursday, April 30, 2015  
Barnhardt Student Activity Center (SAC)  
Open to Public at 11 a.m.**

## **Fall Expo – A Huge Success**

More than 370 students participated in the Expo and 42 completed projects were showcased. Awards were based on judging by industrial project supporters, project mentors, and selected faculty. In addition there were 46 posters for projects that completed their first semester. The top three projects were chosen from 9 finalists by a panel of 12 independent judges.

## **1<sup>st</sup> Place Bill Heybruck Award**



## **Sound Integration into a Shower**

The Sound Integration into a Shower project was supported by Liberty Hardware. The project consisted of the design and fabrication of a device that incorporates sound into a shower door. The device is water resistant, runs on a rechargeable battery that lasts six hours between charges, and is blue tooth compatible. Team members were Christopher English, Elizabeth Hurtado Escobar, Galo Lopez, David Monts, and Daniel Simoneaux.

*What's inside? Read an industry perspective on Senior Design!*

## 2<sup>nd</sup> Place Award



### ***Analysis and Design of PCB Traces for Cellular Frequencies***

Supported by RFMD, students researched, analyzed, designed, and fabricated a printed circuit board that provides a reduction in signal loss for cellular frequencies by more than 10 percent. Team members included Derrick Adams, Brett Cockerham, and Mayangi Mvutu.

## 3<sup>rd</sup> Place Award



### ***2015 FSAE Car***

The 2015 FSAE Car project was supported by UNC Charlotte Motorsports. The project developed the *Formula Society of Automotive Engineers* vehicle that will be used in the May 2015 competition. Simulation was used to optimize the suspension and powertrain which was validated by actual track testing. Team members were Ryan Copping, Aaron Duran, Timothy Nifong, and Nazarii Olkhovskiy.

In addition to completed projects, 29 new senior design projects are starting this spring (<https://srdesign.uncc.edu/senior-design-program/projects/2015-spring-projects>).

Posters of completed designs for these new projects will also be showcased at the Spring Expo on April 30.

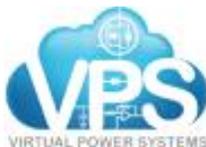
## **2015 EVENTS – Mark Your Calendar Now!**

- April 30, 2015 Spring Expo, Student Activity Center, OPEN TO PUBLIC at 11 AM
- August 28, 2015 Kickoff breakfast for fall 2015 industrial supporters, project mentors, and student teams
- December 4, 2015 Spring Expo, Student Activity Center, OPEN TO PUBLIC at 11 AM

THANK YOU FALL 2014 INDUSTRY SUPPORTERS!  
The success of our program depends on you!



Daimler Trucks North America



## Industry Perspective on Senior Design

Tom Chervenak was director of new product development for Irwin Tools when he served as the industrial Technical Representative on a senior design project. His experience was so positive that he stayed involved for five years. Following his retirement in 2012, he began volunteering with the program and is now in his third year as a team mentor.

“For 20 years I was involved in new product development; the work these teams are doing is similar to that type of work,” he explained. “They get a good flavor for what it’s really like working for a company. Some of the most important things they learn are how to work as a team and the most effective ways to approach a problem.”

The products that teams worked on for him while he was at Irwin Tools included quick-grip clamps, a locking adjustable crescent wrench, and linesmen pliers.

“Some of the projects were to improve the mechanical advantage of the tools provided,” Chervenak said. “The teams came up with some good ideas that were integrated into future design.”

Asked why he is still involved even though he has retired, he said, “During 45 years as an engineer, I learned what you should and shouldn’t do. Things like ‘never go the boss with a problem unless you have some sort of solution to present.’ I feel like it’s my

responsibility to pass on some of this knowledge to these young engineers. I give them a list of such items that I call “*Tom’s Book of Wisdom*.”

Lee Easter became involved in the program three years ago while he was an advisory electrical engineer at AREVA. “The initial draw for me was I had 40 years of experience in the nuclear engineering industry, and I thought I could contribute something,” he said. “Now, I’ve been retired for a year, and I still love doing it. It keeps me sharp.”

A project for AREVA that stands out for him focused on a problem the nuclear industry has been dealing with for years. The problem is detecting when a three-phase power system loses one of its phases. “It’s something that is not obvious when you drop a phase, but it is serious. The students learned a software product called ETAP (ElectroMagnetic Transient Program) and ran close to 100 scenarios,” he recalled. “They developed graphics that showed the problems and trends.

“The point of the projects is for them to learn a lot,” Easter continued. “This is for the students, and industry gets the benefits of what they’ve learned. What has kept me involved is I enjoy it. I still have something to give and I really enjoy working with the students.”

## CONTACT US

For more information visit [www.srdesign.uncc.edu](http://www.srdesign.uncc.edu) or contact

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