Check out what's new with UHP and CEAS.

What's new?
November 2014

For this issue, we wanted to highlight some of the new opportunities you can look forward to coming from the CEAS University Honors community. Just to give you a quick glance, you will find information about the following:

- CEAS UHP Department Group Leaders
- Department Lunches and Dinners
- Dr. Kathy Ossman introduces Engineering Your Community, a 14FS Seminar

CEAS UHP Department Group Leaders

This semester we've started a new opportunity for students to increase their engagement in the CEAS UHP community. We have Department Group Leaders who take on a range of responsibilities such as assisting the planning and facilitation of special events and socials, communicating to other students and faculty, and helping to develop new initiatives. If you are interested, please email Jason Autry now, and we'll get you involved.

Department Lunches and Dinners

Some of our Department Group Leaders have scheduled a meal for CEAS UHP students and faculty to come together to discuss their program, honors...
Dr. George Suckarieh

Chairs the UHP CEAS Committee
Professor Emeritus of Construction Management
Department of Civil & Architectural Engineering and Construction Management
UHP Distinguished Service Award—2014

Ask Me About: Welcome Retreat leadership opportunities and UHA

Electrical and Computing Systems-- Nov 17
Mechanical Engineering-- Nov 19
Aerospace Engineering-- Nov 19
Biomedical Engineering-- Nov 20
Civil and Architectural Engineering-- Dec 1
Chemical and Electrical Engineering-- Dec 4

Dr. Kathy Ossman introduces Engineering Your Community, a 14FS Seminar

This honors seminar is intended to provide students with an experience in using disciplinary knowledge to design assistive devices for individuals with debilitating neurological diseases at Beechwood Home, an inpatient facility which oversees the care of approximately 80 residents. There are seventeen students participating in the course. The seminar is being co-taught by Dr. Gregory Bucks and Dr. Kathleen Ossman, both faculty in the Department of Engineering Education at CEAS.

At the beginning of the course, students were provided with background information about Beechwood Home and researched several of the most common neurological diseases experience by the residents, which include Parkinson’s disease and Multiple Sclerosis. Students visited Beechwood Home on September 5th to meet with the Director, Patti Clark, the head of physical therapy, Megan, and the Director of Facility Services, Michael to learn about the needs of the residents and staff and to discuss various ideas for assistive devices. They took a tour through the home and were able to see what was available for residents and what some of the needs were. Following that visit, students brainstormed multiple ideas for projects and divided into teams according to their individual interests. On September 25, the teams went back to Beechwood Home and presented their project ideas to the Beechwood team and to several members of the advisory board for Beechwood. On October 27th, the teams participated in a Design Review with several faculty and staff members from CEAS to provide technical feedback on their projects. There are five team projects described below.

The Elevator Automation team...

is working on a device that will allow residents to
control the elevator. Most of the residents do not have the ability to push an elevator button and must wait for someone to come along to help. The team is designing a remote that is controlled by joystick and will mount on a wheelchair to communicate with an automatic infrared system already installed in the elevators. This will increase the autonomy of residents by allowing some to control the elevator on their own.

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**The Physical Therapy/Grasping team...**

is working on a device to track lower arm mobility and strength for residents to aid the physical therapists at Beechwood. The device is intended to allow for tracking of muscle degradation over time. Focus is placed on the lower arm movements because of their application for daily living and, specifically, wheelchair operation. The motions targeted by the device include squeezing and all six degrees of freedom related to wrist mobility.

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**The Entertainment team is...**

working on a project to enhance the sensory stimulation of the residents. Because of the neurological disorders the residents are coping with, they experience a multitude of functional, visual, and communicative impairments. In order to compensate for these impairments, the goal of the project is to design an interactive game table that will enable and encourage interpersonal interaction among fellow residents, interactions with the outside world through tactile and visual feedback, and intellectual stimulation by way of strategy.

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**The Room Control team is...**

working on a device that will allow residents to call for assistance from their rooms. The rooms are currently equipped with various types of help buttons, but some of the residents aren’t able to activate the buttons. The team is working on a vision tracking system that will allow a resident to look at a camera located in the room for a certain period of time which will activate the call for help system.

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**The Wheelchair Team is...**
working on several devices to assist both the residents and the staff. One of the devices is a tracking system that will allow members of the staff to know where residents are located within Beechwood home. The second device will detect if a wheelchair has tipped and send a message to the staff. The third device is a help button on the wheelchair designed for residents that leave Beechwood to go on an outing. If the resident pushes the button, a sign mounted on the wheelchair will be illuminated, alerting others in the vicinity that the individual is in distress and to contact Beechwood.

CEAS UHP Committee Members

Dr. George Suckarieh (chair)
Dr. Muthar Al-Ubaidi (CEAS)
Dr. Urmila Ghia (CEAS)
Dr. Awatef Hamed (CEAS)
Dr. Jeff Kastner (CEAS)
Dr. Elad Kivelevitch (CEAS)
Dr. Frank Zhou (CEAS)
Debbie Brawn (UHP)
Jason Autry (UHP)

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