

UMD Named Outstanding University by American Concrete Institute



The American Concrete Institute (ACI), the main concrete organization in the U.S., has named the University of Minnesota Duluth (UMD) a “2014 Outstanding University”. Only 12 Universities are receiving this honor at an upcoming national convention in Kansas City, MO. A local team of Civil Engineering students will be there to accept the award and participate in a contest around designing a reinforced polymer concrete beam.

UMD Civil Engineering students Anthony Johnson, Bryce Hansen, Scot Larson, Willy Pelton and Sean Brown have spent hundreds of hours preparing for the upcoming event and their performance at a previous ACI conference is largely responsible for the award. According to Brown, “UMD’s faculty, amazing labs and strong support” are the foundation for their success. “Ninety-nine percent of our work relies on getting help from the faculty here,” said Brown. “We see and hear about concepts in class, but this is about applying what we’ve learned.”

Johnson added, “It’s a bit intimidating at first.” “Intimidating” may be an understatement considering the task at hand - creating a better and more environmentally friendly concrete.

After water, concrete is the most commonly used material in the world. It is made up of cement, water and rocks or aggregate. The production of the powdery cement releases a lot of carbon

dioxide. According to UMD Assistant Professor Mary Christiansen, five to eight percent of anthropogenic carbon dioxide released into the world's atmosphere comes from cement production, which contributes to global warming. "It's a lot more important than people realize. You look around and realize concrete is all around us," said Christiansen.

By replacing cement with materials like fly ash, which is a waste product from burning coal, student teams are working towards a more sustainable future. The UMD juniors will compete with students from around the world and they are doing their best to capitalize off local connections and resources. For example, they use taconite tailings in their mix instead of rocks. The goal of the beam competition is to create a structure that can be cheaply replicated, use more sustainable materials and know exactly how the structure will hold up to applied loads. "It's not as important to know if it will fail, because they all fail eventually," said Hansen. "We need to know exactly when it will fail. And right now, our beam is made up of 95% recycled materials."

All of the students are excited to show off their creations and learn about new innovations in concrete at the conference. They will also get a chance to network with leaders in the industry. Brown explained, "Before my involvement with ACI, I was just like any other student with good grades. This experience gives me hands-on experience other students don't have and it has definitely helped me get my internships."

The "Outstanding University" banner will hang in the Civil Engineering building of UMD's Swenson College of Science & Engineering (SCSE). As the ACI student chapter's advisor, Christiansen will accompany the students to Kansas City. "They're really stepping it up this year and they're being recognized for their great school spirit and professionalism," said Christiansen. "It's been a lot of fun to work with them." In 2014, SCSE enrolled 3,050 undergraduate and 220 graduate students. The College is home to ten academic departments, in addition to the Large Lakes Observatory, the UMD Air Force ROTC program, and the Iron Range Engineering program, and connects students with hands-on research opportunities through its collaboration with multiple research institutions and area businesses. To learn more about SCSE visit: <http://www.d.umn.edu/scse/>. The University of Minnesota is an Equal Opportunity Educator and Employer.