Wolfpack Engineering Unleashed
Connecting our Successes at NC State!

What is new?

- A network of faculty interested in explicitly identifying and naming instances of the 6 C’s in the engineering curriculum to inspire students and enhance student learning
- An agreement to use a common language to help students connect ideas across the curriculum

What are the 6 C’s?

- **Curiosity, Connections, and Creating Value**
  
  Curiosity inspires successful engineers to connect ideas to create value in the world.

- **Communication, Collaboration, and Character**
  
  The combination of engineering skills and personal skills create strong global leaders.

- Using the 6 C’s in the classroom connects our students’ schooling to their desire to make the world a better place. The 6 C’s complement the delivery of engineering skills and technical knowledge.

- This pedagogy emphasizes *discovery, opportunity identification*, and *value creation* and builds on *active learning* and *problem-based learning techniques*, adding the “Why should I care?” by explicitly connecting classroom content to the real world.

Present your content in a new way:
Include the “Why” behind the “What” you’re describing.

Three reasons to teach with the 6 C’s:

1 - **Increase student motivation**
   
   Adds purpose and direction; allows students to integrate topics into their lives; decreases anxiety by providing multiple ways to demonstrate learning

2 - **Increase instructor satisfaction**
   
   Shows students coming alive as they search for pressing problems; invigorates lectures and office hours

3 - **Increase student learning and retention**
   
   Builds on active learning and problem-based learning techniques which are known to improve learning

Questions? Email: anna_howard@ncsu.edu
How to teach the 6 C’s:

Some examples:
- Open-ended projects:
  - Students exercise their creativity to build a sculpture to calculate a center of gravity (picture at right)
  - Students connect the lecture to their world by highlighting content in a 2-minute video report
- Classroom activities:
  - 1-minute paper to reflect on course content
  - Application snapshots to connect content to real world
  - Problem-based learning: build a new course around students solving a semester-long interconnected project

Thousands of other examples available:

Faculty Development Opportunities:
- 2023 KEEN Faculty training workshops: 3 free seats remaining (includes airfare, lodging, registration, and some food)
- Wolfpack Engineering Unleashed Incubator at NC State Aug 16-17, 2023 and throughout 2023-2024. Apply now.
- Too little time to go to a workshop? Look for 90-min workshops during the 2023-2024 academic year, or join one of our book clubs starting in April 2023.

The Kern Entrepreneurial Engineering Network:
- NC State is now a KEEN partner school.
- KEEN is a partnership of >54 Colleges and Universities including both large R1 universities (Georgia Tech, Ohio State, Duke, etc.) and smaller schools (Ohio Northern, Campbell, Lawrence Tech, Univ. New Haven, etc)
- One Mission: Reach all engineering students with curiosity, connections, and creating value so they can create personal, economic, and societal value through a lifetime of meaningful work.

Engineering Unleashed:
- Free-to-join national Engineering Unleashed
  - National community to join!
  - >4,000 engineering faculty and staff working to promote the entrepreneurial mindset: curiosity, connections, and creating value
  - Thousands of classroom activities ready to be used in all kinds of classes so faculty don’t have to start from scratch