

## Let's Talk: Establishing Connections with Students in Just 15 Minutes

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# Faculty-Student Interactions Make a **BIG** Difference in Student Engagement and Success





Two of the most significant factors affecting engineering student engagement, retention, and academic performance are the **quality** and **extent** of students' **interactions with engineering faculty**. Positive student learning outcomes are correlated with faculty discussion with students about the nature of engineering work and affirmation of students' ability to successfully perform such work.

**Dr. Norman Fortenberry**  
Executive Director, American Society for Engineering Education



# Research Findings: Faculty-Student Interactions Influence Progress and Persistence

- Clear link between faculty-student interactions with student satisfaction and degree completion. Research studies published in Science, produced for the National Science Foundation and the American Society for Engineering Education have all found similar results.
- Students who interact with their professors, and come away with a positive result, are more likely to make progress and persist in the field.
- Interactions with faculty members especially make a difference for female students, and URM students.
- Faculty's manner toward students – either open or closed, responsive or non-responsive – has an impact on student achievement.



*So, what are barriers to increased interactions between faculty and students?*



# Even Small, Casual Interactions Make a Difference!



- It is often a casual off-hand comment from a faculty member that influences a student to stay. Having a comment from a professor- someone viewed as credible and knowing of who would be a good fit in engineering or science- can make a big difference.
- Positive faculty-student interactions are significantly related to satisfaction with an engineering major and the likelihood of employment in engineering.



*What benefits might there be to faculty if faculty-student interactions are improved?*



# Faculty benefit too!



- Students perceive greater accessibility
- Better learning outcomes from students
- Saves faculty time in office hours
- Stronger course evaluations!



# About ENGAGE

<http://www.engageengineering.org/>

- The overarching goal of ENGAGE is to increase the capacity of engineering schools to retain undergraduate students by facilitating the implementation of three research-based strategies to improve student day-to-day classroom and educational experience.
- Focus: 1<sup>st</sup> and 2<sup>nd</sup> year engineering students
- ENGAGE strategies improves retention for ALL students and have an even greater impact on underrepresented groups.
- PI: Susan Staffin Metz, Stevens Institute of Technology
- Over 70 partner schools, including OU (through mini-grant)



# About ENGAGE

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- E<sup>3</sup>s: Integrate **Everyday Examples** that are familiar to **students** (in 1<sup>st</sup> and 2<sup>nd</sup> year courses)
- FSI: Improve and increase level of **Faculty-Student Interaction** (among 1<sup>st</sup> & 2<sup>nd</sup> year students)
- SVS: Improve **Spatial Visualization Skills** (among 1<sup>st</sup> year students with weak skills)



# Selection Criteria for Strategies

- Solid research evidence that the strategies **improved retention**
- Solid research evidence that the strategies worked for **ALL** students, but had a disproportionately **higher impact on female students**
- Implementation of strategies required a **low level of resources (time and money)** on the part of individual faculty and engineering schools
- Strategies could be implemented by **individual faculty**
- Strategies required a **minimal level of committee involvement and change in organizational structure**



# Connections Class



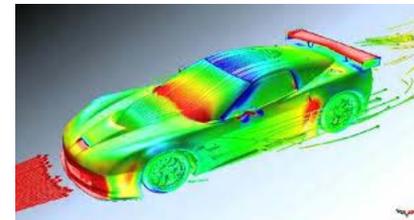
- Connections Classes are designed to enhance faculty-student interaction in 1<sup>st</sup> and 2<sup>nd</sup> year engineering/STEM courses.
- Faculty spend 15-20 minutes during one class period sharing information about themselves, their research, their interests, how they decided to become a professor, and/or any other information they feel comfortable sharing with the class.
- Students can ask questions and the dialogue is intended to be informal and open.



# Connections Class – How To



- Select one class period, preferably in the first third of the semester (but, if you can only implement this at the end of the semester, that's OK!!!)
- Reserve the last **15-20 minutes** for *a Connections class*
- Announce to the class that you are going to stop the class lecture early in order to focus on something different; then **proceed to share information about yourself, your career path, your research, your interests, how you decided to become a professor, etc.**



# Connections Class – How To



- Let students ask questions.
- Shy students: Volunteer some information or say something like “I remember when I was a student...”
- If possible, **bring a snack** such as cookies to class (not necessary).
- The goal of a Connections class is to **humanize** the faculty member and improve faculty-student interactions.



*What benefits might students get from such an activity?*

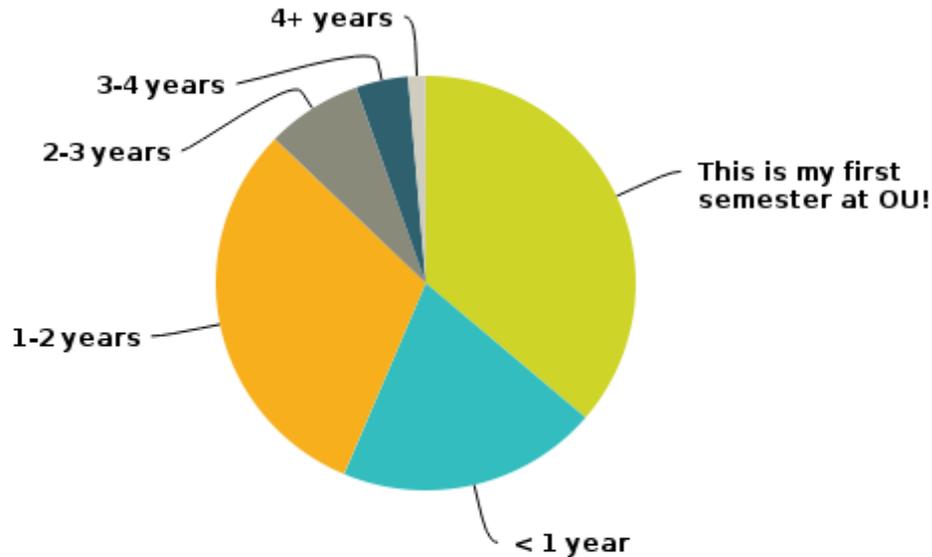


# Preliminary Results in EGR Courses

- Tested by 7 OU faculty members in 5 different core engineering courses (Winter 2013-Fall 2013)
- Class sizes varied between 10 and 120+

## Q4 How long have you been taking classes at Oakland University?

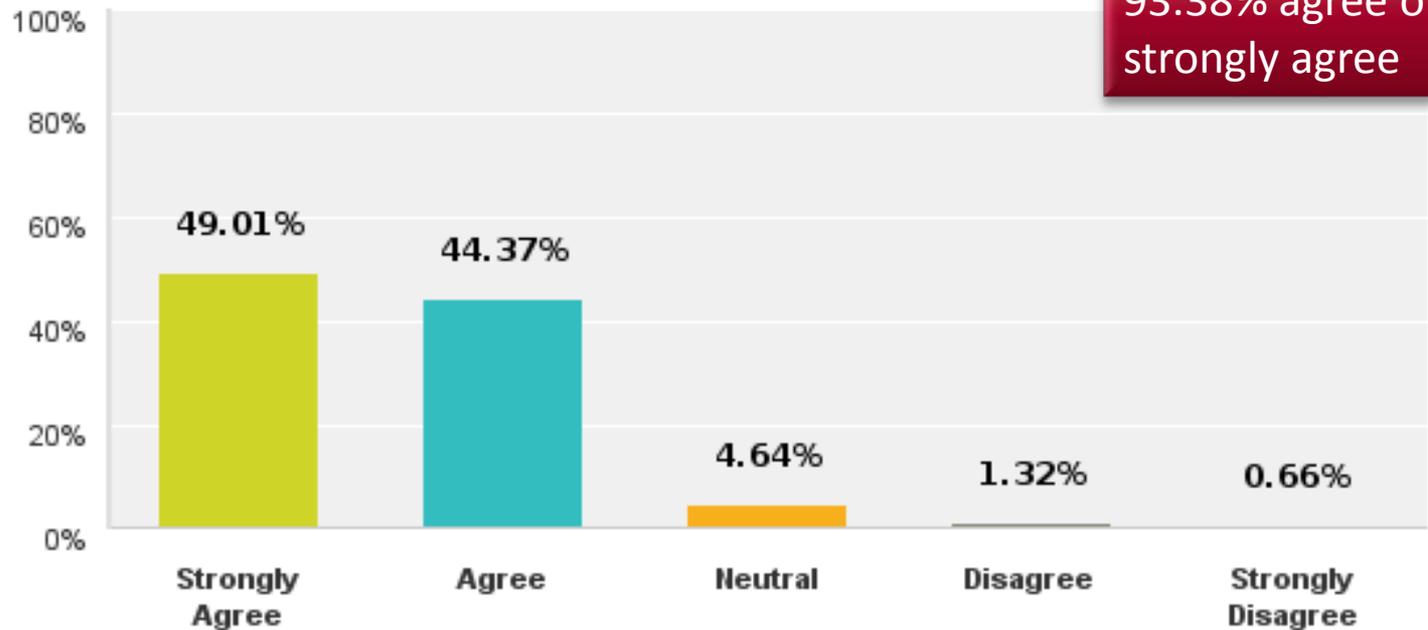
Answered: 149 Skipped: 2



# Preliminary Results in EGR Courses

## Q5 I learned something new from my instructor during the "Connections Class".

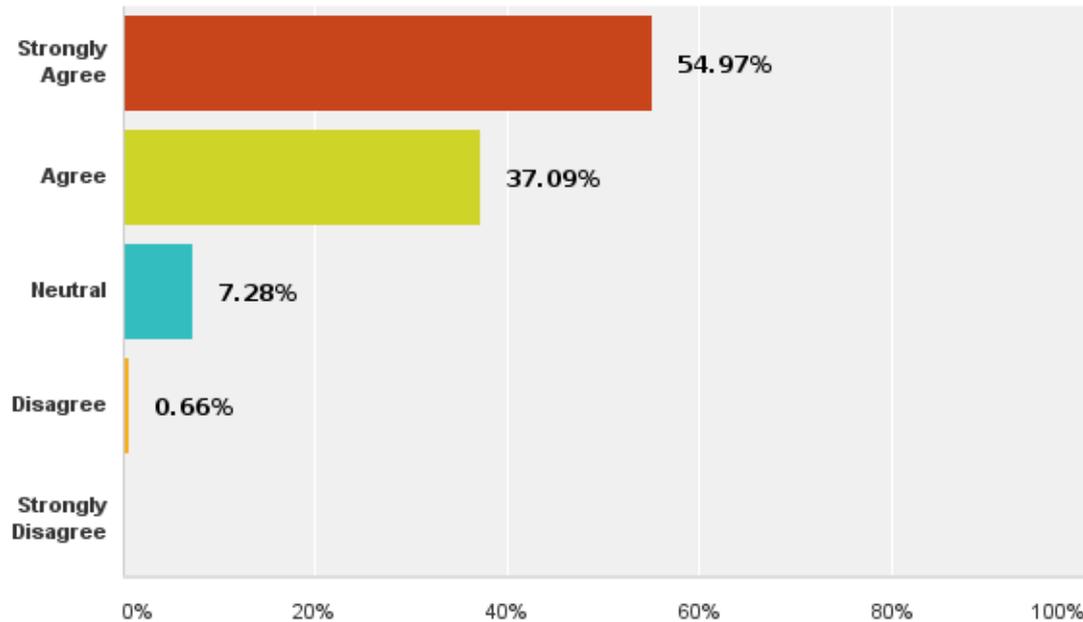
Answered: 151 Skipped: 0



# Preliminary Results in EGR Courses

**Q8 Do you think there is value in having a "Connection Class" in your engineering classes (one class period where at least a portion of the time is devoted to the faculty/instructors sharing about themselves or their career path and research in an informal dialogue)?**

Answered: 151 Skipped: 0



92.1% agree or strongly agree

# Please describe your impressions of your professor during and after the "Connections Class."

- "I liked that he shared more about himself personally. He seems to be involved in a lot of things I, too, am interested in."
- "Human. Most professors will come off as if they do not care what is going on around them, they just want you to shut up so that they can hear the sound of their own voice. Having this time with Dr. X was very helpful to my ability to learn from her."
- "He was genuinely interested in answering our questions and encouraging questions and conversation. He intends to help guide his students in what they want to do instead of simply teaching us"
- "I was very impressed with the research he was doing and his level of knowledge on the subject. It was also interesting to hear about the process of his career up to this point!"



# What value, if any, did you find in the "Connections Class?"

- “I found it helpful because the professor **gave insight to the real world** and their experience as a student that made envisioning my own future easier and **made me less stressed** of what to expect after graduating.”
- “It was really cool to see some **real-world applications** with the schooling that our professor had. I liked knowing how many possibilities are out there for engineers! I would like to hear about one of the Electrical Engineering PHD professors sometime.”
- “Created a **real human connection** between me and my instructor; seems more approachable and connected. ”
- “I found it more refreshing than a usual lecture. It also reassured my belief that an **engineering degree is right for me.** ”



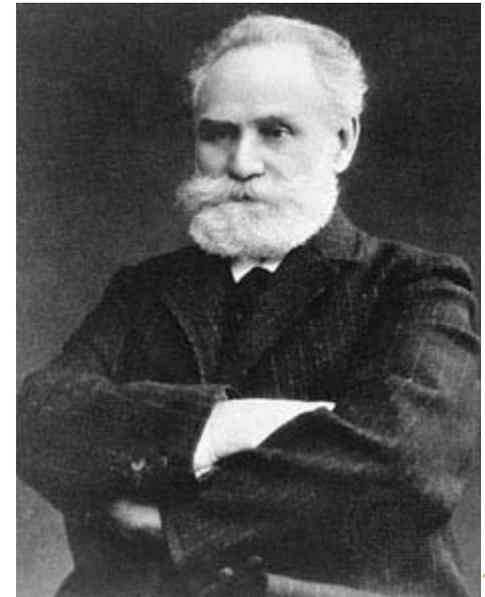
# Other Comments...

- “I found it very helpful, for as many other engineering students, I am **a bit unsure** of whether it is the correct pathway for me. “
- “I thought the connection class was a fantastic idea. I think it is **something that should be done in every engineering** class at least once a semester. Even if a student has attended one before, they will always learn something new and possibly have new questions they didn't have before. “
- “Dr. X handled the time wonderfully and it was interesting to hear about her background. Knowing some of her struggles and experiences **makes engineering less daunting.** ”



# Our Favorite Comment...

Cookies were good. I felt kind of like Pavlov's dog ( conditioning / reinforcing positive behavior). but I can't deny their effectiveness.



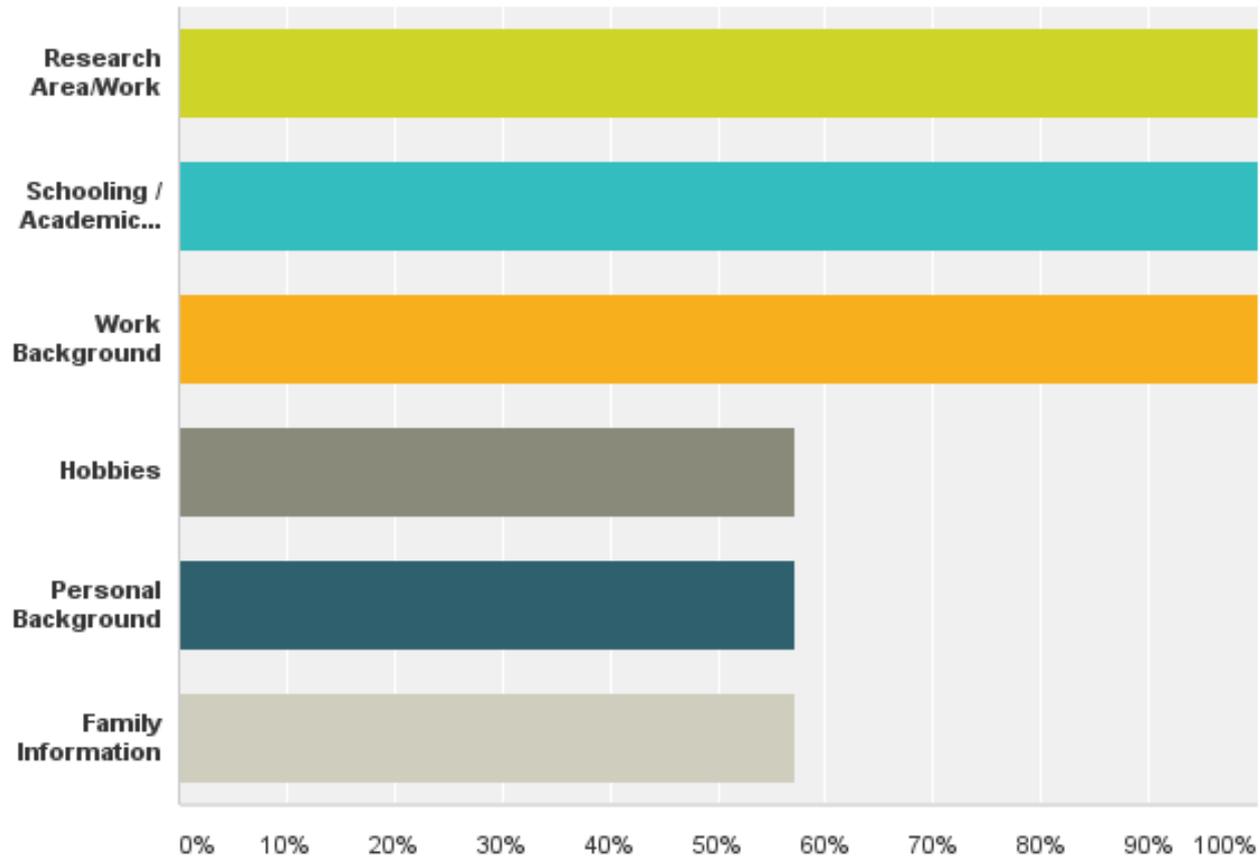
# What would you be willing to share with your students?



# Responses of EGR Instructors

**Q7 Please check the item(s) you discussed/shared with your class:**

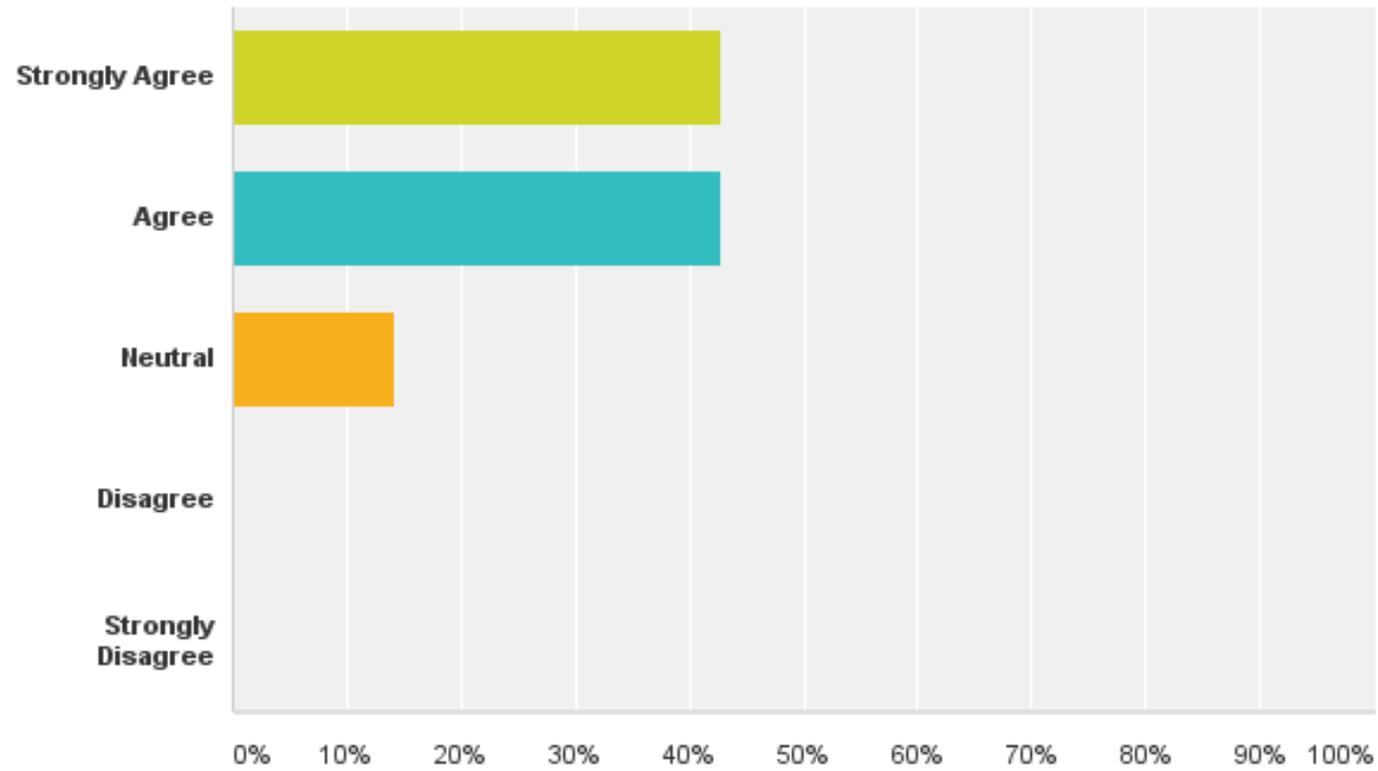
Answered: 7 Skipped: 0



# Was the process easy?

## Q6 The process for leading a Connections Class was clear and easy for me.

Answered: 7 Skipped: 0



# Faculty Perspective: Value in Connections Class

“...The connections class was a great tool to let the students get to know me better and to see that I truly care about their education. At the conclusion of the class I had multiple student approach me with great questions about their education...The biggest benefit of the connections class, is that it helped to **break down** or thin the perceived **dividing wall** between student and professor....”



# Faculty Perspective: Observations

“Many students were eager to ask questions. They were particularly interested in any challenges that I encountered as a student myself, my career path and how what they are learning in class could apply to engineering practice in the ‘real world.’”

“The students all seemed engaged and attentive. I think the students had a good time discussing everything from research to where I got my bachelor's degree.”



# Take away Point



- Faculty approachability and accessibility have a direct impact upon student perceptions of their abilities and self efficacy.
- Connections classes are a quick and easy way to improve faculty/student interactions.

# Any questions?



## Thank you!