Exceptional undergraduates at Rensselaer Polytechnic Institute work as Engineering Ambassadors:

Introducing Middle and High School Students to the World of Engineering

Sponsorship is an excellent recruiting tool. Sponsors are encouraged to provide Ambassadors with internships, co-ops, site visits and career networking opportunities with employees.

Professional connections with our corporate sponsors not only strengthens our outreach programs and the professional development of our engineering students—it inspires future generations to practice “better world engineering”.

HTTP://ENGINEERINGAMBASSADORS.UNION.RPI.EDU

Thank you for considering support of the Rensselaer Engineering Ambassadors. To discuss these opportunities further, please contact:

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The Rensselaer Engineering Ambassadors are an assembly of highly motivated students focused on inspiring a younger audience to explore the role of engineers in society.

**Four years strong: Continuously improving the Engineering Ambassador program**

Now entering its fourth year, the Rensselaer Engineering Ambassadors began in the Spring 2011 semester and has had 86 talented undergraduate students come through the program. EAs are selected from a highly competitive application pool based on GPA and extra-curricular criteria, and go through a multi-level interview process before selection. Currently, the RIT Engineering Ambassadors have 51 members, including 25% underrepresented minorities, 40% women, and students from Automotive, Biomedical, Chemical, Civil, Computer and Systems, Electrical, Environmental, Industrial and Management, Materials, Mechanical, and Nuclear Engineering.

Each Fall, EAs participate in a rigorous three-day communications training program with Rensselaer’s partner universities, Pennsylvania State University, Worcester Polytechnic Institute, Tufts University, Union College, and Rensselaer’s partner schools, including RPI.

**“Passion and Engineer It!”**

Amidst their approved presentations, each EA team then moves onto the next phase of the program: a complementary hands-on activity for their younger audience to experience. Senior EAs also engage the new recruits in this step by providing key leadership skills training through a variety of interactive learning experiences, such as team development and effective communication.

Throughout the entire process, the experienced EAs become the teachers, shaping their own leadership skills by training the next EA generation.

After much practice, the EAs are ready to go into regional middle and high schools, providing the day presentations and engaging students in science, technology, engineering, and math (STEM) classes.

Taking it on the road—putting on an EA program at local middle and high schools

Being an EA is both an honor and a commitment. On the day of a program, EAs meet their teammates by 6 a.m., making sure they have enough time to arrive and set up the school before the middle or high school students even arrive.

Students arrive and EAs, dressed in their red EA shirts, are ready to dive in and share their expertise. Typically, five to six EA teams present in multiple classrooms throughout the day, so by the end of their visit over 300 students are exposed to EA messages. This, as a culminating activity, EAs facilitate a panel discussion with the students—articulating how exciting and important engineering is during these innovative and challenging times. Of course, they also provide invaluable first-hand knowledge about the college application process and how to get the most out of college life. Additionally, the EAs are expanding on their outreach presentations by visiting new audiences, such as home-schooled students and Girl Scout troops, and hosting new programs in which K-12 students come to the RIT campus for a STEM-filled day.

Rensselaer EAs support many campus-wide educational outreach diversity programs, including Black Family Technology Day, Exploring Engineering Day and Design Your Future Day. Since the program’s inception in Spring 2011, nearly 16,000 students have been exposed to EA presentations centered on the positive influences of engineering and how it is essential to our health, happiness, and safety.

**Fully prepared—EAs field tough questions**

By the time EAs complete the year of the program, they have honed their communication and leadership skills to a very fine point. Successfully engaging with a younger audience and communicating difficult engineering concepts demands EAs know their material inside and out, and are ready to answer the myriad of questions younger students ask. These types of “shocks on your feet” experiences are inevitable for EAs.

“Engineering Ambassadors has allowed me to explore a subject I am interested in, Architecture, and the engineering behind it. Even though my major is Industrial and Management Engineering, IA has allowed me to share one of my passions that lie outside my studies. It is also extremely rewarding to see students become engaged in our presentations and activities, even if they visually seem disinterested. The opportunity to work with so many bright and talented students and develop my professional skills has made being an EA an invaluable experience.”

- Alexia DePierpont, Class of 2017

“Environmental Engineering has allowed me to continue my passion for STEM outreach by giving me the opportunity to present to younger students while I am still in the process of choosing a career path. Through Ambassadors, I can share what I find interesting about engineering, such as my research, and I can show students how fun and rewarding a future in engineering is.”

- Michael Hicks, Class of 2017

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- Car Yoon, Class of 2016

“Biomedical Engineering: Engineering an Eco-Friendly Planet”

“Imagineering the Future”

“Biomedical Engineering: Changing the Way we Heal”

“Design of an Athlete”

“Thermal Electric Devices: Help to Solve the Energy Crisis”

“Engineering an Eco-Friendly Material”

“Drag Force: Shape Matters”

“The Future of Light”

“Fluid Dynamics”

“Rensselaer Engineering Ambassadors EA Support”

“The program’s premier sponsor is United Technology Corporation (UTC). With this corporate partnership, UTC financially funds the program in exchange for active promotion of their organization and access to potential EA undergraduates—each summer for internship opportunities. Since this relationship was established in 2011, 20 EAs have been employed at UTC for internships, Co-ops, and full time employment. EA also benefits from university funding, which creates strategic partnerships with faculty. In fact, many faculty throughout the School of Engineering open laboratories to EA students and provide Undergraduate Research Program (URP) opportunities, enabling EAs to include their research experience in their EA presentations.

The NSF-funded Smart Lighting Engineering Research Center (ERC) at Rensselaer works closely with EA students. Each semester, the ERC sponsors up to four EA students who develop programs related to digital lighting technology. These programs are then deployed at regional middle and high schools, giving pre-college students interesting, real world engineering applications of Smart Lighting. This enables the ERC to reach pre-college students in a meaningful way.

Looking forward, the Engineering Ambassador program will grow in multiple ways. We will increase our current number of 51 active EAs to 60 students. This will assure representation from all engineering disciplines and expand our library of presentations, showing how engineers meets the challenges of today’s world. Plus, the increase will enable us to complete more school-wide events during the academic year. Currently, we are not able to fulfill all our requests for visiting schools within the region.

“THE RENSSELAER ENGINEERING AMBASSADORS PROGRAM HAS PROVEN TO BE A WIN-WIN EXPERIENCE FOR BOTH RENSSELAER ENGINEERING UNDERGRADUATES, AND MIDDLE AND HIGH SCHOOL STUDENTS. AMBASSADORS DEVELOP CONFIDENCE WITH PRESENTING COMPLEX ENGINEERING CONCEPTS IN AN ENGAGING WAY—MIDDLE AND HIGH SCHOOL STUDENTS SEE WHAT ENGINEERING IS ALL ABOUT FIRST-HAND.”

Elizabeth Herkenham
K-13 Education Outreach Director
School of Engineering