

## **Rensselaer Polytechnic Institute**

The Material Advantage chapter at Rensselaer Polytechnic Institute has become very active over the last three years. Although the majority of members are students of Materials Engineering, students from other disciplines, such as Biomedical Engineering, are encouraged to join and attend events. The chapter Chair is Robert Middleton, Vice-chair Tricia Kent, Secretary Catherine Gould, Treasurer Rachel Ferebee, Webmaster Benjamin Scheiner, Graduate Liaison William Gathright and Professor Dan Lewis serves as the chapter advisor.

RPI Material Advantage prides itself in planning and executing a wide range of events. The two largest recruitment events are the RPI Activities Fair and the Materials Department Welcome Back BBQ. This year's BBQ had over 90 students and 10 professors in attendance to kick off the new school year. It served as a fun, relaxing mixer and was a great way to introduce new students to the department. In addition to these, RPI Material Advantage hosts many events geared toward the professional development of members. The annual Career Night brought in a panel of professionals within the field of Materials Engineering from various companies to offer their experiences and answer questions from students. 'Research Your World,' the annual Undergraduate Research Fair, included posters from nearly every research group within the department and gave undergraduates the opportunity to speak with professors and graduate students about openings within their groups and potential projects of interest. This event attracted students from a wide range of majors in addition to materials. This year, 'Meet the Upperclassmen' was introduced as a chance for students new to the major to ask upperclassmen about classes, professors, internships, and their experiences in the department. It helped bridge the gap between class years and helped develop a network of support within the department. Additionally, RPI Material Advantage has a great relationship with the local professional societies, particularly the Eastern NY ASM, the Mohawk-Hudson TMS, and the CDMMS. Each month, RPI students attend dinner lectures or plant tours with these societies and network with local professionals in the materials field. Many of these professionals play an integral part in the on-campus Material Advantage events by participating in roles such as panelists for Career Night.

Despite the numerous events focused on professional development, this chapter has a great deal of diversity in its offerings. This year, three students attended the MS&T Conference in Pittsburgh, PA – the first time ever that RPI has sent Material Advantage representatives! They were fully funded by a travel grant from Material Advantage and from the RPI Department of Materials Science and Engineering. The students attended presentations, mixers, and activities. In addition, they presented an outreach demonstration to fellow Material Advantage members from various universities. They brought back with them best practices and a renewed interest in bettering the RPI chapter!

Last year, RPI Material Advantage successfully competed in the ASM Materials Radio Podcast Competition. This annual contest calls upon student chapters to write and record podcasts, radio broadcasts less than three minutes in length. Materials Radio reaches out to middle school students to teach them about materials engineering. The RPI students who participated under the guidance of Professor Dan Lewis include William Gathright, Rachel Ferebee, Tricia Kent, Robert Middleton, Daniel Clifford, Jess Grande, and Tolga Goren. All three submissions, Skis, Recyclables, and Concrete, were selected. The concrete podcast explains how the interlocking crystalline network of concrete is what distinguishes it as a superior material for construction. The ski podcast examines the unique properties of polymers, metals, and composites that skis depend on to give them strength and

flexibility. Lastly, the recyclables podcast created a relationship between the structures of polymers, metals, and glass and their ability to be heated, reshaped, and cooled during recycling. Along with the honor of being on air, the chapter received prize money, further strengthening its ability to bring programs and events to the Department. This year, two podcasts were submitted by Material Advantage members on the topics of Carbon and Chocolate Making.

RPI Material Advantage has steadily been increasing its involvement in outreach programming. The chapter assists with department open houses for prospective students as well as events for undeclared engineering students. For the past two years, Material Advantage has hosted an activity at the annual Exploring Engineering Day, an outreach event sponsored by the Society of Women Engineers and the School of Engineering that brings close to 300 children and their parents to campus to gain exposure to various engineering disciplines through hands-on activities. The sessions Material Advantage has hosted are 'Slime' and 'Crystals.' In addition, this chapter was recently awarded a NanoDays kit, including a plethora of activities involving nanotechnology, to enhance their outreach efforts.

RPI Material Advantage is constantly incorporating new events to attract members and to increase the sense of community within the materials department. Student members benefit from professional development opportunities, student competitions, social events, and outreach programming.



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