

2019 Romeo L. Moruzzi Young Faculty Award for Innovation in Undergraduate Education

Sarah Wodin-Schwartz

Professor Wodin-Schwartz is being recognized for her innovative use of high-impact practices to increase student engagement in the introductory mechanics series in Mechanical Engineering.

Sarah's goals are to give students authentic experiences that connect engineering to its social outcomes, and to foster inclusion and diversity. Through innovative projects, she contextualizes engineering practice in real-world settings. For example, the Flying Forces Project engages students in designing a cable anchoring system to hold wind turbines in place. They do this for a remote village in sub-Saharan Africa where two out of three people lack electricity, and where they must consider social and environmental impacts as well as construction constraints. A student who completed the project said, "Solving real-world problems made me excited about engineering ... because I thought I was accomplishing something. It isn't just about the calculations but about the effect on people and the world." This project was distinguished as a gold star exemplar by the national KEEN network and has been adopted by other faculty at WPI and elsewhere.

Through the creation of hands-on learning activities, she also helps students develop physical intuition about forces and moments in the world around them. Hands-on-Wednesday (HOW) provides students with a set of interactive activities where they physically interact with the concepts they learned on paper in the classroom. Having become proficient in the hands-on environment, they are better prepared to analyze complex systems on paper. One student noted, "What was formerly a free body diagram on our homework became a real-life situation. It reinforces the concepts and improves my understanding." An enthusiastic student, fresh from a HOW session, was heard to exclaim: "Wasn't class amazing today? I'll never look at a bottle opener in the same way again."

This student's reflection is particularly inspiring: "I am an engineer because of Professor Wodin-Schwartz's dedication to improving the education of aspiring innovators, and I can confidently

attribute my professional success to her overwhelming support and commitment to the advancement of engineering education.”

For her skilled use of high-impact practices, for her creative approaches to teaching and learning, and for opening the minds of young engineers to a holistic approach to solving engineering problems, we are proud to present a 2019 Romeo L. Moruzzi Young Faculty Award for Innovation in Undergraduate Education to Professor Sarah Wodin-Schwartz.