

seminar

Global, Humanitarian, and Citizen Engineers: Investigating Emerging Ways of Practicing Engineering

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abstract

The engineering profession is witnessing the emergence of new forms of engineering practices that have the common characteristic of envisioning engineering as a force for social good. These emerging ways of practicing engineering focus on addressing challenges faced by underserved communities locally and worldwide, and go under the banners of “humanitarian engineering,” “socially engaged engineering,” “citizen engineers”, and others. This seminar will report on a number of scholarly and educational efforts that aim to better understand and enhance these emerging ways of practicing engineering. First, the talk will focus on the presenter’s early work related to global engineering education, which was primarily focused on investigating engineering practice across cultures and nations, as well as developing assessment instruments to gauge engineering students’ global engineering competence. Second, preliminary findings are reported from the presenter’s doctoral dissertation titled “Methods and Mindsets to Enhance Community Participation in Humanitarian Engineering Projects: First Steps towards Creating an Humanitarian Engineering Toolkit.” In addition to providing a use-inspired framework of participatory methods for humanitarian engineering, this study also proposes asset-based development, building trusted relationship, and interdisciplinarity as core tenants of successful humanitarian engineering projects. Finally, the talk will conclude with plans for future research, with a focus on: 1) creating an online toolkit for humanitarian engineering based on the dissertation findings, 2) investigating the nature of engineering practices employed by “citizen engineers,” and 3) developing scenario-based assessment instruments to more systematically and effectively evaluate the competencies of socially engaged engineers.

biosketch

Andrea Mazzurco is a Ph.D. candidate in the School of Engineering Education at Purdue University. He holds an M.S. in Aeronautics and Astronautics Engineering from Purdue University and a B.S. in Aerospace Engineering from Politecnico di Milano, Italy. Born and raised in Milan, Italy, he describes himself as an Italian-Brazilian-American hybrid to acknowledge the three cultures that have most influenced his identity. His research interests include investigation of engineering practice in global, humanitarian, and citizenship contexts, as well as course development, instruction, and assessment efforts that aim to cultivate socially and environmentally responsible engineers.

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