



THURSDAY, APRIL 8 1:00-1:50 PM

ME Research Seminar

Embedding Equity in Sustainable Energy Systems Models

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Talk Abstract:

Sustainable energy systems are crucial to decarbonizing our global energy portfolio and fighting climate change; engineers play a key role in the design, development, and implementation of these systems. While sustainable energy is growing at an accelerating pace, a deeper examination of the field reveals the distribution of these energy benefits are not equitable among all populations being served, especially those who are disadvantaged. Systems engineering models built from a human-centered approach have the potential to integrate both technical data and human needs to examine sociotechnical and socioeconomic challenges from multiple stakeholder points of view and uncover biases in the data and model design.

In this talk, I will present two sustainable energy systems research examples, one published study and one ongoing study, and discuss the equity implications of the modeling approaches and outputs. Application areas include utility scale solar and electric vehicles. At the end of the talk, I will discuss energy justice implications of this work and future directions to pursue this complex interface of engineering systems modeling, sustainable energy, and equity.

Speaker Bio:

Sita M. Syal is a Ph.D. candidate in Mechanical Engineering and Design at Stanford University, working with Prof. Margot Gerritsen and Prof. Sheri Sheppard. Her research focuses on embedding equity, human influence, and costs in sustainable energy systems models through an integration of qualitative and quantitative methods. Sita's professional industry experience before returning to graduate school spans across energy sectors with BP America, from biofuels development to process engineering and offshore operations engineering. She is a recipient of the National Science Foundation's Graduate Research Fellowship and was awarded a Morris K. Udall scholarship for her work in sustainability. Sita earned her B.S.E in Chemical Engineering and M.Eng. in Energy Systems Engineering from the University of Michigan, and her M.S. in Product Design Engineering ("Design Impact") from Stanford University.

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Seminar will be recorded and posted online*