

My main focus in teaching has been to achieve excellence and innovation in graduate and undergraduate systems engineering education at MIT. I achieve this by developing and applying active learning techniques, through carefully balancing lectures, case studies, and relevant homework, and by constantly refreshing my course materials with new research results. At the graduate level I feel a particularly strong affinity with the System Design and Management (SDM) students. At an average age of 32, these individuals represent some of the most experienced students we have at MIT with interest in combining engineering and management concepts in new ways.

At the undergraduate level, I embrace the Conceive-Design-Implement-Operate (CDIO) curriculum and believe that systems engineering and engineering design education is most effective when it is not only theoretical, but when it is carefully combined with design-build projects. I have contributed to systems projects of this nature in Unified Engineering, as well as through a new class, 16.810. It is for my work in the latter course Engineering Design and Rapid Prototyping, that I was awarded the 2012 AIAA Teaching Award. Since 2008, I have created and taught several new classes, in part because I saw an increasing need for unifying ways of teaching systems concepts for our engineering students. These are:

- 16.842 Fundamentals of Systems Engineering
- ESD.944 Engineering Systems Scholarship Seminar
- ESD.052 Project Engineering (offered for the Gordon Program<sup>[1]</sup>)

An issue about which I care deeply is advising and mentoring. I spend a great deal of time with my students to make certain that their MIT experience is truly transformative. In recognition of these efforts I received the 2006 Frank E. Perkins Award for Excellence in Graduate Advising and the 2010 Capers and Marion McDonald Award for Excellence in Mentoring and Advising. My alumni in academia and industry regularly stay in touch, which is one of my greatest joys.

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<sup>[1]</sup> The Gordon Engineering Leadership Program teaches engineering students leadership and career skills:  
<http://web.mit.edu/gordonelp/>