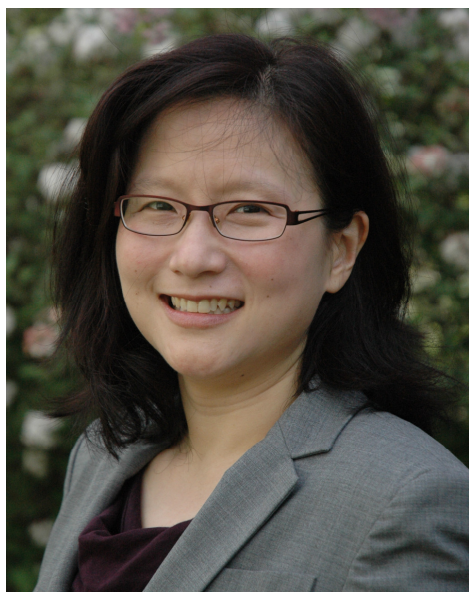


# Mechanical Engineering Lecture in Design

## Driving Early Stage Design Process through Design Representations



**Maria C. Yang**

Associate Professor  
Department of Mechanical Engineering  
Massachusetts Institute of Technology

on Friday, November 21<sup>st</sup> at 4:00pm in 3-370

Product design and engineering are concerned with the creation of artifacts, from consumer products to complex, large scale engineering systems. This talk considers the processes used to create these artifacts. The impact of the very earliest stages of design process on final outcome is considerable, but its ambiguous nature makes it difficult to model and evaluate, and presents a fundamental challenge in design research. This talk focuses on the key role of design representations in driving the early stages of the design process. It discusses investigations into how the timing, type, and quantity of representations such as sketches, physical prototypes, and other models can be linked to greater likelihood of design success. This approach provides an innovative means to assess both design process and the behavior of the designer. This talk further considers how design process is represented through language, and presents a novel approach to extracting early stage design decision-making. The talk will also present research on the challenges of early stage design in the development of complex engineering systems, particularly in the integration of subsystems. The talk will conclude with future work in early stage design, along with thoughts on design education.

Refreshments will be served before the seminar.

Please contact Tony Pulsone at [pulsone@mit.edu](mailto:pulsone@mit.edu) with any questions.