

Mechanical Engineering Department Seminar

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1130 Mechanical Engineering

111 Church Street SE, Minneapolis, MN 55455



Human Factors Research for Increasingly Autonomous Systems

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Increasing automation can extend the capabilities of the human, but it can also make the human more complacent during safety situations where the automation is most likely to fail or be attacked. For most human-machine interfaces, the human is still considered the controller, but with increasing automation, the humans' role becomes less clear and a more collaborative role is needed. Optimum performance of the joint human-machine cognitive systems depends on the ability of the worker to appropriately adapt to the automation while the automation is adapting to the human. Trust is another important construct for ensuring there is appropriate reliance on the automation. Human factors researchers play a key role in addressing the appropriate level of shared autonomy as systems becoming increasingly more complex and humans take on more supervisory control. This presentation will address what needs to be considered in the design of safety-critical autonomous systems that contain uncertainty and imperfections.



Bio: Linda Ng Boyle is the professor and chair of the Industrial & Systems Engineering Department at the University of Washington. She has a joint appointment in Civil & Environmental Engineering. Her BS degree is from the University of Buffalo and her MS and PhD are from the University of Washington. She is an associate editor for the journal Accident Analysis and Prevention, the chair of the TRB committee on Statistical Methods, and a recipient of the NSF Career Award. She is also one of the organizers for the International Conference on Driving Assessment.