T.H. Wu Distinguished Lecture

The Department of Civil, Environmental and Geodetic Engineering

April 21, 2015 - 4:00 – 5:00 PM
Room 100 Scott Lab, 201 W. 19th Avenue

Risk and Decision-Making for Extreme Events:
What Terrorism and Climate Change Have in Common?

Abstract

Terrorism and climate change debates are often characterized by worst-case thinking, cost neglect, probability neglect, and avoidance of the notion of acceptable risk. This is not unexpected when dealing with extreme events. The presentation will describe how risk-based and cost-benefit approaches are well suited to decision-making in these uncertain environments. Structural reliability, systems modelling and probabilistic methods are used to model infrastructure performance, risk reduction and effectiveness of adaptation or protective strategies, exposure, losses, and costs. The concepts will be illustrated with current research of risk-based assessment of climate adaptation strategies including designing new houses in Australia subject to cyclones and extreme wind events.

Professor Mark G. Stewart

ARC Australian Professorial Fellow - Director, Centre of Infrastructure Performance and Reliability
The University of Newcastle - New South Wales, Australia

Professor Mark Stewart is Professor of Civil Engineering and Director of the Centre for Infrastructure Performance and Reliability at The University of Newcastle in Australia. He was awarded a BE from Monash University in 1984, and a PhD from The University of Newcastle in 1988. He is an honorary Senior Fellow at the Mershon Center for International Security Studies at Ohio State University.

He is the co-author of *Probabilistic Risk Assessment of Engineering Systems* (Chapman & Hall, 1997), *Terror, Security, and Money: Balancing the Risks, Benefits, and Costs of Homeland Security* (Oxford University Press, 2011), and *Chasing Ghosts: The Costly Quest to Counter Terrorists in the United States* (Oxford University Press, forthcoming), as well as more than 400 technical papers and reports. He has more than 25 years of experience in probabilistic risk and vulnerability assessment of infrastructure and security systems.

In the past decade Mark has received extensive Australian Research Council support to develop probabilistic risk-modelling techniques for infrastructure subject to military and terrorist explosive blasts and cost-benefit assessments of counter-terrorism protective measures for critical infrastructure. In 2011, he received a five-year Australian Professorial Fellowship from the ARC to continue and to extend that work.

Mark currently leads a consortium of five universities in Australia for the $3.5 million CSIRO Flagship Cluster Fund project *Climate Adaptation Engineering for Extreme Events (CAEx)*. The CAEx Cluster is assessing the impact of climate change on damage and safety risks to infrastructure, and assessing the cost-effectiveness of engineering adaptation strategies.

This lecture is free, and preregistration is encouraged. Reserve your space by contacting Carol Scott at scott.30@osu.edu – (614) 292-3533. One (1) PDH credit will be offered for attending the entire lecture and a certificate will be provided.

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