

# Stump the Academic: You know you want to!

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**Abstract.** This panel will provide an opportunity for INCOSE members to discuss issues around the current and future academic related activities of INCOSE. Symposium delegates will be asked to submit questions for the panel during the week and these will be grouped into areas of discussion. Time will also be allowed for open discussion during the panel. We hope this will provide a better view of our current activities to the academic and non-academic membership. We will also consider the outcomes of the panel in setting future direction for the academic matters team. In 2011, the INCOSE Board of Directors created a new position for a Director of Academic Matters. The current director and his team coordinate all academic related activities across INCOSE. The initial aims of academic matters are: • Create an Academic Council, formed from University members of the INCOSE CAB. • Grow the individual academic membership of INCOSE and make INCOSE a premier source of academic information in SE • Oversee the transition of the Graduate Reference Curriculum for SE (GRCSE) from the BKCASE project to INCOSE • Improve research activity in SE through the SE Journal and other efforts. One of the roles of the team is to work with the local organizing teams to help organize the Academic Program elements of the International Symposium. The academic matters team also supports existing academic activities including Youth Outreach and Student Divisions. Both of these have their own activities during the symposium, but issues related to them or any other topics will be considered in this panel. **PURPOSE OF PANEL:** To provide a better understanding of the current academic activities of INCOSE and to consider the input of Symposium delegates in the formation of future academic related policy.

## Biography

**Rachel LeBlanc** (Worcester Polytechnic Institute) - [rachel@wpi.edu](mailto:rachel@wpi.edu)

Rachel LeBlanc is the Director of Corporate and Professional Education at Worcester Polytechnic Institute. She manages the portfolio of non-traditional academic programs for the Division. Ms. LeBlanc has ten years of experience working with faculty and industry experts to create education solutions to meet business needs. These solutions meet a variety of workforce needs for audiences from entry-level workers to executives. Throughout her career, Ms. LeBlanc and her team have provided education solutions for several industries including defense, life science, high-tech, energy, healthcare, manufacturing, and construction. She serves as the Academic Program Chair for IS 2013. Ms. LeBlanc has a B.S. and M.S. in the life sciences, as well as an M.B.A.

**Art Pyster** (Stevens Institute) - [Arthur.Pyster@stevens.edu](mailto:Arthur.Pyster@stevens.edu)

Dr. Art Pyster is a Distinguished Research Professor in the School of Systems and Enterprises at Stevens Institute of Technology and the Deputy Executive Director of the Systems Engineering Research Center, which is a Department of Defense's University Affiliated Research Center. During much of 2007 and 2008, he also served as the Director of the Software Engineering Program at Stevens Institute as well as the Stevens Director for the Applied Systems Thinking Institute. Before joining Stevens in March 2007, Dr. Pyster served as the Senior Vice President and Director of Systems Engineering and Integration for SAIC. Earlier, Dr. Pyster served as the Deputy Chief Information Officer for the Federal Aviation Administration, where he oversaw information technology investment and policy, created and operated the agency's information security program, created the agency's enterprise architecture, operated their process improvement program,

and achieved a 'green' score on the President's Management Agenda. His professional and research activities emphasize systems and software engineering, especially the integration of those two disciplines and their application to enterprise operations. Currently, he is co-lead of the BKCASE project to create a body of knowledge for systems engineering as well as a reference curriculum for graduate systems engineering education. Dr. Pyster is, Director of Academic Matters for the International Council on Systems Engineering (INCOSE), an INCOSE Fellow and a senior member of the IEEE.

**Richard D. Adcock** (Cranfield University) - [r.d.adcock@cranfield.ac.uk](mailto:r.d.adcock@cranfield.ac.uk)

Rick has 20 years experience in defence, working in industry, consultancy and academia. He joined Cranfield University at the Defence Academy of the UK in 2000 to help set up a Systems Engineering MSc to support MoD acquisition reforms. Rick chairs a Masters in Systems Engineering for Defence Capability, and is responsible for a range of other courses covering Awareness through to Practitioner and Expert level competencies in Systems Engineering. Rick has done research and published on Systems Engineering competencies, Network Enabled Capability (NEC), Enterprise Architecting and Model Based Systems Engineering (MBSE). He is currently engaged in doctoral research on Systems Engineering Competencies and Education and is working closely with the UK MoD Systems Engineering development partner on Systems Engineering competencies and skill assessment for the UK MoD Engineering Strategy. Rick has been a member of INCOSE for over 15 years and was a lead author on the BKCASE Project ([www.BKCASE.org](http://www.BKCASE.org)), which is creating a Body of Knowledge (and associate Reference master Curriculum) for Systems Engineering. He is a member of the newly formed SEBOK Editorial Board. Rick is an INCOSE Associate Director in the academic matters team. He is responsible for communications and events.

**Timothy L.J. Ferris** (School of Engineering, University of South Australia) - [timothy.ferris@unisa.edu.au](mailto:timothy.ferris@unisa.edu.au)

Tim Ferris is an Associate Professor in the Defence and Systems Institute at University of South Australia and performs the role of Associate Director Teaching and Learning. He is also the INCOSE Associate Director Academic Research. He supervises PhD students and has established a professional doctorate in engineering, which take quite different views of the nature of the development of students and the nature of research. He holds the degrees BEHons, BTh, BLittHons, GradCertEd, and PhD from University of Adelaide, Flinders University, Deakin University, Queensland University of Technology and University of South Australia, respectively. Tim has been a member of INCOSE for over 15 years and was an author on the BKCASE Project ([www.BKCASE.org](http://www.BKCASE.org)), and lead author of the Graduate Reference Curriculum for Systems Engineering (GRCSE). He is a member of the newly formed SEBOK Editorial Board. Tim is an INCOSE Associate Director in the academic matters team. He is responsible for research and for GRCSE.

**Olivier de Weck** (MIT) - [deweck@mit.edu](mailto:deweck@mit.edu)

Olivier de Weck was born in Switzerland and holds degrees in industrial engineering from ETH Zurich (1993) and aerospace systems engineering from MIT (2001). Before joining MIT he was a liaison engineer and later engineering program manager on the F/A-18 aircraft program at McDonnell Douglas (1993-1997). Prof. de Weck is a leader in systems engineering research. He focuses on how complex man-made systems such as aircraft, spacecraft, automobiles, printers and critical infrastructures are designed and how they evolve over time. His main emphasis is on strategic properties that have the potential to maximize lifecycle value (a.k.a the 'ilities'). Since 2001 his group has developed novel quantitative methods and tools that explicitly consider manufacturability, flexibility, commonality, and sustainability among other characteristics. Significant results include the Adaptive Weighted Sum (AWS) method for resolving tradeoffs amongst multiple objectives, Time-Expanded Decision Networks (TDN), the Delta-Design Structure Matrix (DDSM) for technology infusion analysis and the SpaceNet and CityNet simulation environment. These methods have impacted complex systems in space exploration (NASA, JPL), oil and gas exploration (BP) as well as in sophisticated electro-mechanical products (e.g. Xerox, Pratt & Whitney, DARPA). Prof. de Weck's teaching emphasizes excellence, innovation and bridging of theory and practice. He is an Associate Fellow of AIAA, a Fellow of INCOSE and serves as Associate Editor for the Journal of Spacecraft and Rockets and the Journal of Mechanical Design. He won the 2006 Frank E. Perkins Award for Excellence in Graduate Advising, a 2007 AIAA Outstanding Service Award, the 2008 and 2011 best paper awards from the journal Systems Engineering and the 2010 Capers and Marion MacDonald Award for Excellence in Mentoring and Advising.

From 2008-2011 he served as Associate Head of the Engineering Systems Division at MIT. Since early 2011 he serves as Executive Director of the new MIT Production in the Innovation Economy (PIE) initiative. Oliver was recently appointed as editor in chief of the INCOSE SE Journal.