



**International Council on Systems Engineering
Delaware Valley Chapter Meeting**
(Non-members welcome to attend)

2010 International Symposium Preview

Joint Meeting with the Ackoff Collaboratory for Advancement of the Systems Approach (ACASA), University of Pennsylvania, Department of Systems Engineering

Speaker 1: Dr. Francis Vanek, Cornell University - Effectiveness of Systems Engineering Techniques on New Product Development: Results from Interview Research at Corning Incorporated

Speaker 2: Ms. Sarah Sheard, Third Millennium Systems LLC - A Complexity Typology for Systems Engineering

For abstracts and authors' biographical summaries, see next page.

Date: Thursday June 10th, 2010
\$10 for the buffet meal (students \$5)

Agenda:

5:30 to 6:30 pm:	Arrival and Buffet Meal in Accenture (Cyber) Café
6:30 to 6:45:	Chapter Business
6:45 to 7:30:	Speaker 1
7:30 to 7:40:	Break
7:40 to 8:25:	Speaker 2
8:25 to 8:30:	Wrap Up

Place: Wu and Chen Auditorium, Levine Hall, University of Pennsylvania (3330 Walnut Street, Philadelphia, PA 19104). The Accenture (Cyber) Café is in the northwest corner of Towne Building, on the ground floor next to Levine Hall and Chancellor Walk: <http://www.facilities.upenn.edu/map.php>

The campus is easily reached by public transport or by car - for directions, please visit the Penn web site: <http://www.admissionsug.upenn.edu/visiting/directions.php>

Visitor parking is available in Penn Garage #37 at 34th and Ludlow Streets. <http://www.business-services.upenn.edu/parking/map.html> For a refund from the Chapter please bring your parking ticket to the meeting.

Please contact peter.crosby.scott@comcast.net ASAP if you plan to attend this event – deadline Monday June 7th to be included in the meal count. You may choose from the sandwich selection on Page 3 of this flyer.

For further information about the International Council on Systems Engineering please visit the INCOSE website at <http://www.incose.org/> and the Delaware Valley Chapter website at <http://www.incose.org/delvalley/>



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Effectiveness of Systems Engineering Techniques on New Product Development: Results from Interview Research at Corning Incorporated – Dr. Francis Vanek, Cornell University

Abstract

This paper reports on the findings from interview research conducted by a joint team from the Systems Engineering Directorate at Corning Incorporated and the Systems Engineering Program at Cornell University to test for systems engineering (SE) effectiveness in product development in a commercial setting. Between April 2008 and March 2009, the team conducted 19 interviews of systems engineers and project managers within Corning to evaluate the extent to which they used a range of systems engineering techniques, and the effectiveness of those techniques in improving project performance. Both quantitatively and anecdotally, the expectation of a correlation was met, with strongly performing projects having generally higher use of SE, and struggling projects having difficulties that could be traced back to shortcomings in the use of SE. Both the findings and the underlying methodology are discussed, with the aim of interesting others in the field in repeating this type of research within other enterprises.

Bio

Francis Vanek earned bachelors degrees from Cornell University in 1991 in Mechanical Engineering and in Asian Studies, and a doctoral degree in Transportation Systems Engineering from the University of Pennsylvania in 1998. He taught at Heriot-Watt University in Edinburgh, Scotland from 1998 to 2000, in the Centre for Logistics Research. Since 2001 he has served as a Lecturer and Research Assistant in the College of Engineering at Cornell University, and also worked as a consultant in the fields of energy efficiency and renewable energy. He has collaborated in the teaching of Systems Engineering courses at Cornell, and also served as Research Assistant within the Systems Engineering program at Cornell, with a focus on SE applications in product development.

A Complexity Typology for Systems Engineering – Ms. Sarah Sheard, Third Millennium Systems

Abstract

This presentation distills the concept of complexity, as related to systems engineering, into six types. Elements and interconnections, the two main contributors to complexity, have different names in different disciplines; how these correspond is shown in a table. There are also various spectra along which systems can be judged to be more or less complex. A framework for types of complexity is proposed that includes three types of structural complexity (size, connectivity, and architecture), two types of dynamic complexity (short-term and long-term), and one additional type, socio-political complexity. Ms. Sheard will also preview some of her dissertation research including how complexity measures sort into types when applied to real systems.

Bio

Sarah A. Sheard has 30 years of experience in systems engineering, process improvement, and curriculum development and implementation. Her career has included teaching, satellite engineering, air traffic control engineering, and consulting on topics ranging from team workshops to systems and software process appraisals, standards rationalization, and systems engineering curriculum development. She authored several famous papers including Twelve Systems Engineering Roles and the Frameworks Quagmire, focusing in the last five years on applications of the complex systems sciences to systems engineering. An INCOSE Fellow since 2006 and the 2002 INCOSE Founder's Award recipient, Ms. Sheard has held several leadership roles within INCOSE. She is an INCOSE-certified Systems Engineering Professional (CSEP). Ms. Sheard is currently a doctoral candidate at Stevens Institute of Technology.



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Boutique Bagged “Lunch” by Bon Appétit Catering

Choose a Sandwich: comes with Granola Bar, Bag of Chips, Whole Fresh Fruit, House-Made Soft Cookie, and Soda or Bottled Water.

Sandwiches

1. Cucumber Tuna Salad: Traditional Style Tuna Salad, Sliced Cucumber and Lettuce on Multigrain Bread
2. Grilled Vegetable and Sun-dried Tomato Sandwich: Roasted Zucchini and Portobello Mushroom, Roasted Red Pepper, Spinach, and Sundried Tomato Tuscany Spread
3. Roast Beef with Tarragon Cream Ciabatta: Medium Rare Roast Beef with Lettuce, Tomato and Creamy Tarragon Spread
4. California Chicken: Oven Roasted Chicken Breast with Lettuce, Tomato, Cucumber, Honey Mustard on a Multi-grain Baguette