**INCOSE Spotlight on Judith Dahmann**
Interviewed by Sandy Young, info@incose.org

**Name:** Judith Dahmann
**Title:** Senior Principal Systems Engineer
**Organization**: The MITRE Corporation

**Place of Birth:** Schenectady, New York, USA
**Current Residence**: Hollin Hills in Alexandria, Virginia, USA and Scientists Cliffs in Port Republic, Maryland, USA

**Domain:** Systems of Systems
**Studied in college:** Math and Social Sciences
**Year joined INCOSE**: 2010
**Role(s) in INCOSE**: Co-chair Systems of Systems Working Group,
**Years in systems engineering:** 25+

*Why did you become a systems engineer?*
I joined MITRE right out of graduate school to work as a systems analyst. It was only a matter of time until, through some diverse project experiences, my interest grew beyond analysis to the engineering of systems. Initially my focus was on analysis of criminal justice systems and then when I moved into defense, I worked on both the engineering of simulation systems and their application.

My math-based social science background has provided a good launching point for addressing many of the current socio-technical elements of most of today's systems and systems engineering environments and for the current trajectory toward model-based engineering.

*What is your favorite part of being a systems engineer?*
My favorite part of working as a systems engineer is the challenge of trying to bring order to complex situations, particularly today as we look to expand the role and application of systems engineering principles and approaches to broader, more complex areas. Systems engineering is all about bringing together diverse views and considerations to achieve a resulting capability. The challenges of diverse stakeholders, diverse technical perspectives and diverse environments are what make systems engineering an exciting field for me.

*What is your least favorite part of being a systems engineer?*
My least favorite part of systems engineering is the discipline's reluctance to reexamine approaches and processes that may have been very effective in the past but that don't rise to the challenges of today's systems and environments. I recognize the need for balance and particularly the importance of leveraging established approaches, but if system engineering is to achieve its potential with today's complexities, we need as much open thinking and innovation as possible.

*What is the simplest way to explain "systems of systems"?*
Simply put, "systems of systems" (SoS) are systems composed of other systems, which as we often say "have day jobs." That is, these systems are developed and operated independently from the SoS, but when they work in concert with one another, they each provide a new capability not available from the systems alone. Most systems today are a part of one or more SoS whether or not they explicitly recognize this.

*What are the current goals/projects of the INCOSE Systems of Systems Working Group?*
The INCOSE SoS Working Group's goal is to promote application of systems engineering in systems of systems through a range of activities that are designed to share our current understanding of best practices, develop and share new approaches to address SoS challenges and facilitate communication among practitioners and the research community. We host a monthly webinar series, which has been very popular.

The working group events at the recent International Workshop included an SoS research Roundtable and a workshop on SoS patterns with the Patterns-Based Systems Engineering Working Group. Our current major ongoing activity is development of an INCOSE INSIGHT special issue on SoS, which is slated for this fall.