

# The NorthCoast Interfacer



**2008    2009 – 2013, 2015    2014**

## President's Corner

I hope all had a happy series of holidays and great New Year and took some time to enjoy family and friends! Looking back on 2017, the Chapter had a great year! In particular, our enhanced partnership with our Michigan Chapter colleagues and behind-the-scenes Cedar Point Tour stand out in my mind as a great achievement and favorite event, respectively. I'm grateful to Dennis Rohn for authoring our newsletter series on the Chapter's 10<sup>th</sup> Anniversary; look for an "Anniversary Bash" in March! I'm glad to have had Marian Cronin, as Past-President and Treasurer, Joe Stevens, as Vice-President, and Tim Schuler, as Secretary, supporting me this year on the Board of Directors. I also want to recognize three other Chapter Past-Presidents for their continued dedication to the Chapter, and Board of Directors, in particular: Dennis Rohn, Bill Klinger and Carl Dister. Each has stepped in at a moment's notice to help plan a meeting, take minutes, or support chapter planning. We are lucky to have such committed members!

I'm looking forward to this coming year under Joe Stevens' leadership, and am eager to support him with Marian and Tim again on the Board. There are always volunteer opportunities available within the Chapter, both big and small, and I encourage you to consider whether enhancing our profession might make a good New Year's resolution! From planning a single Chapter Meeting, to organizing or even presenting a tutorial, the Chapter needs your help! We look forward to the next 10 years of professional development under your guidance and with your support.

### Upcoming Chapter Meetings

- 1. January – 2018** Chapter planning! Date and Venue TBD. Join your BoD and help influence the types of programming you'll see in 2018!
- 2. February 27<sup>th</sup>**, Westlake Porter Public Library (with remote call-in option): MBSE with XLDyn: Linking Product Requirements with Performance

**Abstract:**

Product Development Engineers are tasked with developing and meeting product requirements. Throughout the process they must determine whether the requirement can be met using simulation, test, or engineering judgement. The relationships between requirements and verification methods must be documented and tracked. Many other tasks may be involved in this development process such as DFMEA, DoE, Use Cases, State diagrams/machines, Reliability analysis, Schematic diagrams, ibd, and activity diagrams. Model Based System Engineering(MBSE) is a methodology that helps engineers manage this process. XLDyn is a MBSE software that use Microsoft Excel as the graphical user interface to author OMG SysML compliant system models. If required, data can be imported to XLDyn from other requirements management systems. SysML requirement diagrams can be automatically created with XLDyn's one click model creation, then simulation and test verification can be easily added. The simulation and test verifications can be executed directly from the system diagrams; the diagrams and project summary table are automatically updated. 1D multi-physics simulation tools are integrated including XLDyn's own XL1D. System Level DoE can be performed to help balance designs. Weight and cost can also be managed. This easy to use tool allows engineers to perform many product design/development tasks from within one systems engineering software tool. Documentation now becomes a byproduct of the development process.

**Presenter Bio: Tom Tecco – COO, XLDyn, LLC**

Tom has over 30 years of engineering and management experience in the areas of CAE, Test, Electrical/Controls, PLM, and Systems Engineering related to the vehicle and heavy equipment industries. He has held the following positions:

- IT Director CAE/CAT/ECS and Systems Engineering, General Motors
- Vice President of Automotive Group, MSC Software
- Vice President and Partner, Automated Analysis Corp
- Product Development Engineer, Navistar

Tom has a BSME, Trine University and MSME, The Ohio State University

**3. March** – Chapter 10 Year Anniversary Banquet

Katie Trase

C-NO President 2017

## Annual INCOSE International Workshop 2018

The 2018 Annual INCOSE International Workshop will be held January 20 – January 23, 2018 in Jacksonville, FL at the **Hyatt Regency Jacksonville Riverfront**. This annual event is *the* place for systems engineers to contribute to the state of the art in systems engineering. A completely working event (no papers, panels, or presentations), IW is intended to enable INCOSE Working Group members, Chapter leadership, International leadership and the INCOSE administrative committees to advance progress on the products and activities of INCOSE and to share best practices.

Two kinds of working group sessions are available at IW 2018, Working Sessions and Outreach Sessions. Working sessions are the best place to actively contribute to working group products and interact with experts in the field. Outreach sessions are intended to disseminate the current state of the art to attendees with little previous exposure to working groups – a great place to start if you have not attended IW before!

Online registration for IW 2018 opens in November, and closes three working days prior to the event. The registration fee structure will accommodate attendees who plan to participate for one day, or up to all four days of the workshop as shown on the workshop registration website. <http://www.incose.org/iw2018/home>

## Ten Years Ago

This will be my last ten year anniversary article. Hopefully you have taken the time to read them and they have given you some insight to the Chapter's history as a newer member or guest, or reminded you of what has occurred if you have been a member for a number of years.

I was just looking back at what was occurring in the U.S. ten years ago and not a lot has changed – economic issues, shootings, severe weather, Peace conferences, etc. But there were two things that caught my eye – DARPA held a Grand Challenge (a prized competition) for driverless cars to navigate safely in traffic, and Space Shuttle Atlantis launched to deliver the European-built Columbus science laboratory to the International Space Station. Both of these represented significant systems engineering challenges. And while we are not all out buying driverless cars yet, it does seem like they are coming.

Whether you are working on space projects, autonomous cars, or other systems, there is a need to share knowledge so that we can all be better systems engineers. INCOSE and our Cleveland-Northern Ohio Chapter provides a chance to do this sharing and learning from one another. You'd be surprised at what you know that could help other members. Why not get involved, attend a Chapter meeting, fill a micro-volunteer opportunity, or even consider presenting at a chapter meeting. We need you in order to keep this Chapter healthy.

The Chapter leadership is looking to schedule a dinner sometime later this winter, to celebrate our first ten years. Why not commit to coming and helping us celebrate and move this chapter forward,

Dennis Rohn

## Chapter Election Results

The Nominations and Elections Committee of the Cleveland-Northern Ohio Chapter of INCOSE is pleased to announce the results of the voting process, which closed on November 2, 2017.

The newly-elected C-NO Chapter Officers for 2018 are:

- Secretary: Tim Schuler
- Treasurer: Marian Cronin

Joe Stevens, currently Vice President / President-Elect, will transition to President, in January 2018. Katie Trase will serve as Immediate Past President.

Ballots were distributed only to current C-NO Chapter Members (as of October 14). For our friends who did not see the ballot mailing, I include here the bios of the newly-elected officers and the new president:

**President Joe Stevens** is a Senior Principal Systems Engineer and Service Line Team Manager with SAIC, with over 30 year's experience as a systems engineer, program manager and internal consultant on various system development efforts, spanning the life cycle from concept development to sustainment. Successfully managed key development programs such as NASA Gulf of Mexico's Helicopter In-flight Tacking System, FAA Airport Surface Detection and Equipment – X-Band Radar, FAA Safe Flight 21 - 3D Airport Map Models Database and DoD/MoD Sales for Flat-Panel Cockpit Display Upgrades. As a Senior Systems Engineer, successfully lead technical teams on USAF B-2 Radar development, USAF F-15E Radar Upgrade, JPO MILSTAR – Military Strategic and Tactical Relay, US Navy UHF Follow On and US Army PTDS - Persistent Threat Detection System. In addition, as a SE/PM consultant to the US Army Program Executive Office for Ground Combat Systems, led a Baldrige-based organizational assessment, developed a number of organizational process models for systems engineering and managed software development contract for US Army TARDEC - Tank Automotive Research, Development and Engineering Center's Integrated Systems Engineering Framework tool. While at General Motor's Hughes Electronics Company, charter member graduate of an in-house Radar Systems Engineering Certification Program. Co-author/contributor to Boeing's Advanced Design for Quality Avionics Systems (ADQAS). Experienced in process and product improvement and leading process development and deployment projects, compliant with both Baldrige and CMMI. Member of Project Management Institute and International Council on Systems Engineering.

**Secretary Tim Schuler** is a business owner and Systems Engineer with over 34 years of aerospace industry and business experience, in private industry and supporting NASA via numerous engineering contracts. Mr. Schuler is a graduate of Cleveland State University with a Bachelors of Mechanical Engineering, and a Masters in Industrial Engineering with a concentration in Systems Safety Engineering. His current position is Lead Systems Engineer for the Flow Boiling and Condensation Experiment (FBCE) Project, a NASA Glenn Research Center in-house effort to develop an integrated two-phase flow boiling/condensation facility for the International Space Station (ISS) to serve as the primary platform for obtaining two-phase flow and heat transfer data in microgravity. His experiences include new product development, aeronautics and space systems engineering, test and facilities operations contract management at NASA's Plum Brook Station, and successfully starting and operating multiple technical services businesses.

**Treasurer Marian Cronin** is a Systems Engineer with Vantage Partners, LLC and has worked at the NASA Glenn Research Center in various capacities for over 25 years. She has an undergraduate degree in Chemical Engineering from Arizona State University, and has taken graduate-level courses in Business Administration, Industrial Engineering, and Materials Engineering. Marian has worked in the areas of thin film process engineering, spaceflight project engineering, aeronautics and space testing, business development, and systems engineering throughout her career. Marian currently holds her ASEP through INCOSE and has

a Project Management Professional certification through PMI. She has been an INCOSE member since 2013, and looks forward to expanding her capabilities through continuing association with the C-NO chapter and members.

Many thanks go to the C-NO Chapter Members who voted in this election!

2018 Nominations and Elections Committee

Carl J. Dister

## INCOSE 2018 International Symposium

The INCOSE 2018 International Symposium is coming to Washington D.C. IS2018 will be held at the Grand Hyatt Washington DC, July 7-12, 2018. The Theme for this year's Symposium is **Delivering Systems in the Age of Globalization**. INCOSE's Annual International Symposium is the largest annual gathering of people who do systems engineering, for four days of presentations, case studies, workshops, tutorials and panel discussions. The program attracts an international mix of professionals at all levels, and includes practitioners in government and industry, as well as educators and researchers. You can also take time to see our Nation's Capital. For more information visit the Symposium website: <https://www.incose.org/symp2018/home>.



**28<sup>th</sup>** Annual **INCOSE**  
international symposium

Washington, DC, USA  
July 7 - 12, 2018

## INCOSE - CWRU Follow up

Hi everyone. Just sending a brief note to update you on our meeting with CWRU students last Friday (10/20).

The event was one of our few engagements with students where a reasonably large number of engineers, mathematicians, chemists and physics majors came together to hear about INCOSE and systems engineering. I did not tally an official count but there appeared to be approximately 25 students in attendance. A copy of the presentation is attached for your reference.

Mr. Ben Shrager did a superb job with coordinating the event and the CWRU IEEE was equally up to the task for hosting the event and informing the engineering students at CRWU about our presentation.

The students were engaging and asked several questions ranging from what hiring employers are looking for when selecting graduates seeking systems engineering employment, how they can prepare themselves for systems engineering while pursuing their present discipline, systems engineering management and planning technical projects.

The students really seemed to enjoy the connection to industry and what they conveyed to me was many of their day-to-day interactions with faculty, although appreciated, leans to the theoretical and seems to lack that practical element that outside speakers tend to provide.

In a couple of side bar conversations that occurred after the presentation, the students appear to have a significant appreciation for what INCOSE can bring to their campus on a recurring basis. They totally understand the significance of NASA and many of our chapter members diverse work experiences that could lead to future speaker/panel engagements.

Mr. Shrager will continue to establish an INCOSE student division at CWRU. His initial action is to identify a faculty member that will commit or sponsor the student group. We departed with no specific agenda or path forward however we will continue to remain in contact from time to time to see what support if any he needs from INCOSE and continue our dialogue as we look for the next opportunity to meet with CRWU

Joe Stevens

## New Chapter Members

In October we had one new members join the Chapter: Michael Ballinger (Siemens Energy, Inc). In December, Tiarra Barton also joined the Chapter.



**Michael Ballinger**

Welcome! The Board of Directors hopes the Chapter can aid you in your professional development, and looks forward to getting to know you.

Dennis Rohn

Cleveland-Northern Ohio Chapter Membership Chair

## Chapter Meeting Minutes

### December 12, 2017

#### OPENING

C NO Chapter President Katie Trase started the meeting at 5:06 PM.

Katie welcomed ten Philips Healthcare employees, attending at the invitation of Abraham Cohn.

Katie then introduced Stuart J. Kretch, of Prime Radiant LLC.

#### PRESENTATION: “Systems Engineering Impacts: Theoretical Limits Implementing Software”

Stuart discussed:

- Why planning software implements is hard.
- IT Project Failure Rates: relatively constant over the last 20 years.
- Our understanding of building software uses anecdotal knowledge.
- Go back to first principles:
  - o Don’t use empirical methods.
  - o Use what is universally true: formal mathematical methods.
- Apply Logic to Analysis and Design.
- The development of software is a proof process.
- No matter how well or poorly we choose to implement software, we must have the Specification.
- Attempt to improve Capacity and Reliability, which both depend on the Specification Proof.
- Plan around uncertainty.

## Future Events

The list below provides a sampling of upcoming events that may be of interest to INCOSE members.

January 20-23, 2018 – INCOSE International Workshop 2018 (Jacksonville, FL)

- o <http://www.incose.org/IW2018>
- o No papers/presentations

March 4-11, 2018 – IEEE Aerospace Conference (Big Sky, Montana)

- o <http://aeroconf.org/>
- o Abstracts submittal deadline has passed

April 23-26, 2018 – 2018 IEEE International Systems Conference (Vancouver, Canada)

- <http://ieeesystemscouncil.org/>
- Initial Manuscript deadline – November 1, 2017

May 8-9, 2017 – CSER 2018 16th Annual Conference on System Engineering Research

- <http://www.sercuarc.org/events/16th-annual-conference-on-systems-engineering/>

July 7-12, 2018 – INCOSE International Symposium 2018 (Washington DC)

- <http://www.incose.org/symp2018>
- Paper submittal deadline – November 11, 2017

July 22-27, 2018 – 62nd Conference of the International Society for the Science of Systems (ISSS) (Corvallis, OR)

- [http://iss.org/world/ISSS2018\\_Corvallis](http://iss.org/world/ISSS2018_Corvallis)

Dennis Rohn



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### **2017 Chapter Officers:**

**President:**

Joe Stevens

**Vice-President:**

**Secretary:**

Tim Schuler

**Treasurer:**

Marian Cronin