

The NorthCoast Interfacer



2008 2009 – 2013, 2015 2014

President's Corner

Welcome, Summer! I hope you and your family have a chance to enjoy the nice weather we've been having. If you need an excuse to get out and enjoy the sun with your family, consider bringing the gang out to our upcoming Chapter Meetings. In July, we are headed to an Indians game, and in September, we've arranged for a behind-the-scenes tour of some roller coasters at Cedar Point! See the short ads later in this newsletter for more information.

The BoD is striving to increase the value of your membership and would like to arrange for at least one tutorial this year. We are assembling topic ideas and will distribute a short survey to gather input and assess interest, but please feel welcome to reach out with any particular requests or guidance. A sampling of potential tutorial topics include: innovation, implementing SE in a resistant organization, SE in medicine, the Internet of Things, SE and Agile approaches, design thinking, and SE for small businesses. Let us know if any seem of particular interest!

This coming October 11 - 14 marks the 11th Annual INCOSE Great Lakes Regional Conference, being held in Twin Cities, Minnesota. The conference theme is "Superior System Solutions for Today's Complex Environments." In the event you can't make it to Minnesota, consider participating in the second SE Professional Development Day on Friday, October 13th: a one-day, virtual extension of the conference, which broadcasts sessions from Minnesota to satellite sites. The BoD is finalizing the details of our own satellite site in the Cleveland area - stay tuned! The SE Development Day program is still being finalized, but will likely cover a spectrum of introductory and advanced SE topics, so there will be something for everyone.

June Chapter Meeting Summary: Book Club

On June 20th, Carl Dister and Kate Trase facilitated a discussion of three books: 1) *Revolt of the Engineers: Social Responsibility and the American Engineering Profession*, by Edwin Layton; 2) *Influencer - The New Science of Leading Change*, by Joseph Grenny, et al.; and 3)

INCOSE's Vision 2025. Eight attendees gathered at Market Garden Brewery in Ohio City to examine the engineer's role and obligation in helping resolve complex societal challenges, such as those issues outlined in the Vision 2025.

Carl opened the discussion by reviewing the Revolt of the Engineers, which chronicles the history of engineering societies in the US. Carl detailed the philosophical split between the fledgling societies that occurred in the 1850s. One business-focused branch viewed the societies as being a vehicle to aid the advancement and growth of their predominant industries. The other professional-focused branch sought to elevate the social status of the engineer by, in part, addressing social issues, such as forest preservation. According to Layton, the fear of Communism after World War II diverted engineering societies away from a societal focus, and thus societies became more closely aligned with business interests - until, Carl supposed, INCOSE's Vision 2025 was released, which seeks to "apply SE to help shape policy related to social and natural systems."

Katie summarized the Influencer's six-part model for influencing change in complex challenges. The change model attempts to identify personal, social, and environmental factors that impact one's motivation and ability to adopt the change. Katie hypothesized that the Influencer's approach could be one framework from which INCOSE might start tackling the social challenges in Vision 2025.

The attendees engaged in a lively debate about the histories of engineering societies, and whether we are really dedicated to improving society or promoting the businesses and industries we work for. In particular, it was noted that engineers who rise through the business management ranks frequently end up in significant positions of power in engineering societies, thus wielding particular influence in ensuring the societies meet the needs of their organization or industry. Most attendees agreed that in order to meet the significant challenges set forth in Vision 2025, most SEs would have to reassess their commitments to their employer or industry over society.

July Chapter Meeting: Take me out to the ball game!

Join your fellow INCOSE members for an Indians game! This event is open to non-INCOSE members, friends, and family.

The Indians are playing the Toronto Blue Jays on Friday, July 21 - First pitch is at 7:10 PM! Gates will open one hour prior to first pitch.

Enjoy fireworks, dollar hot dogs, and good conversation with your systems engineering colleagues and family.

Seating Location: Section 567, Rows C and D, seats 5 - 14 in both rows.

Cost: \$31/ticket (no additional taxes or fees).

See [Eventbrite](#) for further information!

Save the Date: Behind the Scenes Cedar Point Tour

Friday, September 22 at 3:30 PM

Take a 1.5 hour tour of a variety of roller coasters, with emphasis on the Top Thrill Dragster and the engineering challenges associated with increasing its operational reliability. After the tour, enjoy the park - it opens at 6 PM! Be on the lookout for additional details, soon.

Old and New (Reprinted from June 2017 Member Newsletter)

Alan D. Harding, INCOSE President
alan.harding@incose.org

Most of the time, we are talking about the future – the INCOSE Systems Engineering Vision 2025, our vision, and mission, and how we are addressing our strategic objectives. That is great and the right thing to do, but in this newsletter, I wanted to look back and highlight some of the world-class publication content that every individual member and CAB employee can access. I have picked one example “gem” from each source to illustrate what you might find. All these links work when you are logged into Connect at www.incose.org.

The INCOSE International Symposium library holds papers on all symposia dating back to Chattanooga, US-TN, in 1991. It contains a wealth of insight, and diverse views on systems topics. International Symposium papers do not just reflect the orthodox view of systems approaches; you will often find thought-provoking material that is relevant years later.

- The example I have picked is Marvin Talbott’s 1993 paper on “Why Systems Fail” – a practical view of seven underlying principles that contribute to numerous generic system failures.

Systems Engineering is INCOSE’s technical journal. Authors publish peer-reviewed papers in both themed and open issues up to six times a year by our partners Wiley under the editorship of Oli de Weck. Systems Engineering’s first publication was in 1998.

- Eric Honour’s 1998 article on the History of INCOSE, which takes us, all the way back to the origins of the society and filled in a lot of background, was new to me.

INSIGHT is the INCOSE Practitioners Magazine, first published in 1993 and publishes four times a year. Bill Miller edits INSIGHT. For me the strength of INSIGHT is its themed issues, which each provides a powerful and attractive resource for a key systems topic.

- Showing open partiality I am using the Oct 2016 issue as my example as it focused on Systems of Systems a subject close to my heart and a vital part of addressing today’s systems challenges. This special edition includes 16 articles from authors in all three INCOSE sectors and multiple application domains and is an excellent resource for practitioners and academics alike.

JET – The Journal of Enterprise Transformation is a quarterly publication designed to provide a forum for original articles on trends, new findings, and ongoing research (both theory and application) related to enterprise transformation. Rahul C. Basole serves as the Editor-in-Chief for JET, published by Taylor & Francis. JET first published in 2011.

- Bill Rouse's 2011 article on "Necessary Competencies for Transforming an Enterprise" is well worth a read as it uses case studies to consider the complexities of transforming today's enterprises.

INCOSE uses webinars to share information about systems engineering and about INCOSE, and has established a significant Library of recorded webinars available to members. The main webinar series started in 2008 and there are almost 100 webinars available – in fact, our 100th webinar is days away, on June 19th!

- This milestone webinar addresses "Integrating Program Management and Systems Engineering" and the new book on the subject that is a product of INCOSE's collaboration with MIT and PMI.

The webinar library also includes webinars from INCOSE working groups, with over 70 webinars on topics including MBSE, SOSE, and Agile systems engineering.

Katie Trase
C-NO President 2017

A Look Back

In 2007, the same year that the Cleveland-Northern Ohio Chapter began forming, the Michigan Chapter organized and held the first INCOSE Great Lakes Systems Summit, on Mackinac Island, MI. This annual meeting has evolved into the INCOSE Great Lakes Regional Conference. Jack Stein, the organizer of that first Summit and a subsequent one the following year, reached out to the Cleveland Chapter in 2009, to see if we would be willing to host the third one. The Chapter was only in its second full year of operation, but the Chapter leadership enthusiastically took on the challenge. John Juhasz served as the Conference Chair, and was heavily supported by Dan Gauntner (2009 Chapter President), other Chapter officers, and a few other Chapter members. As a result, the INCOSE Region IV Autumn 2009 Conference was held in October of that year. On Sunday evening, October 25, a dinner was held at the 100th Bomb Group Restaurant, with a talk by Dr. John Schneider, from American Electric Power, on gridFUTURE, a Concept. The Conference opened on Monday morning, October 26, at the Ohio Aerospace Institute, with a keynote by Dr. Harrison Schmitt, former US Senator and NASA Apollo 17 Astronaut – the last man to walk on the moon – who spoke on Conceptual Systems Engineering Applied to a Return to Deep Space. Two parallel tracks were conducted during the day – a Power/Energy Systems Engineering Track, led by Ray Beach, and a Systems Methods Track, led by Dennis Rohn. During lunch, Dr. Richard Grzybowski, of the Finger Lakes Chapter, and Region IV Membership Director, gave the approximately 70 attendees insights into the INCOSE Vision 2020 statement. The success of this conference gave the Chapter a boost and the confidence to continue moving the Chapter forward.

What are your Chapter highlights of the past ten years? I would be interested in hearing what you think were highlights, and I will incorporate some in future newsletter articles. Email me at dennis.rohn@incose.org.

Also, how should we celebrate our first ten years? And maybe more importantly, what should the vision be for the next ten? Let Chapter Board members know your thoughts.

Dennis Rohn

Are you a Transdisciplinary? Update on the INCOSE Systems Science Working Group

The INCOSE Systems Science Working Group is trying to help Systems Engineers learn how to work with highly complex systems. Do you know how to judge when a system you are working on is highly complicated versus highly complex? Would you set up Systems Engineering processes differently at your organization for managing a highly complex system development versus a highly complicated system development? The INCOSE Systems Science Working group can help. Their discussion group is very interesting, with highly contentious debates around the role of Systems Engineers in organizations and society.

There is some interesting research being sponsored by INCOSE through the Systems Science Working Group regarding the Philosophy of Systems Engineering. Does Systems Engineering really have a separate philosophy from Engineering, Physics, or Math? What criteria allows for a new philosophy to be recognized by the National Science Foundation, for example, when allocating research dollars? (Spoiler alert: To date, there is not a recognized Systems Engineering philosophy.) Dr. David Rousseau and colleagues are leading the effort to develop a recognized Systems Engineering Philosophy for INCOSE. Check out Dr. Rousseau's one page overview called: A Systems Philosophy framework and methodology for discovering and leveraging Scientific Systems Principles on his website. Dr. Rousseau's discussions of what it takes to be "Transdisciplinary" are quite interesting. Most Systems Engineers and Systems Engineering Teams are typically "Multidisciplinary" (no one loses their allegiance to their niche profession but simply work together in teams of specialists.) But foundational to a Systems Philosophy is the ability to lose your identity as a specialist and be able to work on Complex Systems across disciplines: a Transdisciplinary.

Where are you in your career as far as losing your identity as a Mechanical Engineer, Industrial Engineer, Electronics Engineer, Software Engineer, Project Manager, etc. and becoming a Transdisciplinary or Systems Engineer? Still holding on to that PE License instead of moving on to CSEP certification? Still keeping those niche skills on your resume in fear that the bottom will drop out of the SE market, and you won't find a position as a Transdisciplinary?

Carl J. Dister
Past-President INCOSE NO-Cleveland Chapter

New Chapter Members

In April and May we had four new members join the Chapter: Carla Bailo, Horst Salzwedel, Mickael Menard, and David Blanck.

Carla Bailo is a leader in engineering and vehicle program management with 35 years of experience in the automotive industry. As Ohio State's assistant vice president for mobility research and business development, she helps the university accelerate sustainable mobility and transportation innovation, while integrating related research and education across Ohio State's academic units. She is the Chair of the Ohio Smart Mobility Initiative Board that drives the overall long term vision for smart mobility at OSU and in Columbus; and she is a co-founder of the Smart Belt Coalition, a team of academic and transportation agencies in Ohio, Michigan and Pennsylvania on connected and automated vehicle initiatives. She is also the President and CEO of ECOS Consulting, LLC and offers services in engineering cost efficiency, optimization, electrification and computer oriented vehicle systems. Before joining Ohio State in 2015, she served as senior vice president of research and development for Nissan North America, Inc.



Dr. Horst Salzwedel is President and CTO of MLDesign Technologies, Inc., and has published over 120 papers on systems engineering over his 30+ year career. He has been a professor at Stanford University and the Technical University of Ilmenau. His experience includes research and development of automotive and aerospace technologies and systems and minimum risk development of complex systems. While working for SAIC, his model-based systems engineering research and development was used in navigation, control, and system identification for many DoD programs and contributed to the development of computer aided engineering tools including Matlab. His work has directly influenced NASA, WPAFB, Airbus, Boeing, Honeywell, Volkswagen/Audi, GM, Siemens, Robert Bosch, Motorola, AT&T, Loral, Lockheed Martin, General Dynamics, etc. as well as over 100 universities worldwide. He holds a Ph.D. in Aeronautical and Astronautical Sciences from Stanford University, a M.S. in Aero- and Astronautics from Technical University Munich, and a B.S. in Aircraft and Motor Vehicle Engineering from the School of Engineering in Hamburg.

David Blanck transferred into our chapter and has been an INCOSE member for just over a year. David has over 25 years of experience in Systems Engineering and Project Management working in Automotive and Medical Device industries. He is currently at Tenneco Automotive as a Sr. Systems Engineering Manager. David is implementing Systems Engineering practices and methodologies at Tenneco, including Requirements Engineering and Systems Architecture and Trade-off processes.

Mickael Menard was a system engineer working at a French automotive manufacturer – Renault in Paris, where he was in charge of CO2 emission reduction functions such as Stop-Start. With 2 years' experience in Europe and his Master's degrees, he came to the States in 2017 to join Honda in Columbus, Ohio. At Honda, Mickael works on the conception of the next in-vehicle infotainment system, tailoring processes to improve communications among stakeholders while setting quality management as top priority.

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

Dennis Rohn
Cleveland-Northern Ohio Chapter Membership Chair

Future Events

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

- July 15-20, 2017 – INCOSE International Symposium 2017 (Adelaide, Australia)
<http://www.incose.org/symp2017>
 - Paper submittal deadline has passed
- August 2, 2017 – Systems Engineering Research Center “SERC Talks”: *How Do We Prepare the People Who Will Need to Manage the Real-time Responses to Cyber Attacks on Physical Systems?*
 - <http://www.sercuarc.org/events/serc-talks-how-do-we-prepare-the-people-who-will-need-to-manage-the-real-time-responses-to-cyber-attacks-on-physical-systems/>
- October 4, 2017– Systems Engineering Research Center “SERC Talks”: *What are the Top Ten Software Security Flaws?*
 - <http://www.sercuarc.org/events/serc-talks-what-are-the-top-ten-software-security-flaws/>
- October 11-13, 2017 – 2017 IEEE International Symposium on Systems Engineering (Vienna, Austria) <http://2017.ieeeisse.org/>
 - Paper submittal deadline has passed
- October 11-14, 2017 – 11th Great Lakes Regional Conference: (Minneapolis/St. Paul, MN) <http://www.incose.org/glrc11>
 - Paper submittal deadline has passed
- October 13, 2017 – 11th Great Lakes Regional Conference – Professional Development Day (Cleveland, OH) - TENTATIVE
- October 31-November 2, 2017 – EnergyTech 2017 (I-X Center, Cleveland, OH) <https://www.energytech.org/conference/call-for-presenters/>
 - Paper submittal deadline – July 31, 2017
- October 23–26, 2017 – 20th Annual NDIA Systems Engineering Conference (Springfield, VA) <http://www.ndia.org/events/2017/10/23/20th-systems-engineering-conference>

- Paper submittal deadline has passed
- January 20-23, 2018 – INCOSE International Workshop 2018 (Jacksonville, FL)
<http://www.incose.org/IW2018>
 - No papers/presentations
- March 4-11, 2018 – IEEE Aerospace Conference (Big Sky, Montana) <http://aeroconf.org/>
 - 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
- July 7-12, 2018 – INCOSE International Symposium 2018 (Washington DC)
<http://www.incose.org/symp2018>
 - Paper submittal deadline TBD

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