



The NorthCoast Interfacer



2008, 2017



2009-2013, 2015-2016, 2018



2014

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President's Corner



I hope everyone is well, and that your good health continues as we navigate the impacts of COVID into the fall and winter. Our Chapter shifted this year to an all-virtual format, and it is working out quite well for us. If you have not taken the opportunity to join one of our Chapter events, please give it a try. We have had some truly outstanding live speakers the past several months, and our strong line-up of speakers and topics continues through the end of the year and beyond. Our meetings are all virtual, informal, engaging, you are free to come and go without the awkward escape-out-the-back-door, and they are free to attend!

With the all-virtual format we have the opportunity to reach beyond our Chapter membership. We are now inviting the Three Rivers (Pittsburgh region) Chapter members to our Chapter events. With our own chapter membership spanning the state of Ohio, it seemed natural to reach across the state border to the Three Rivers Chapter just a couple hours away. Expanding our invite list further diversifies our member industry base and introduces new networking possibilities.

Thank you for participating in the annual C-NO Chapter member survey. There were some very valuable takeaways from the survey results, pertaining to our Chapter event planning, communications, and individual professional development. The Board is currently formulating implementation plans to address these focus areas.

Elections for the Board of Directors are this month for the terms commencing January 2021. The following positions are open for one year terms: President, Vice-President, At-Large Director, Treasurer, and Secretary. If you have an interest in running for office next year, or wish to hear more information about the duties of any of the available positions, please contact Bill Klinger, our C-NO Nominations & Elections Committee Chair, at klinger@modex.com, or reach out to one of our current Board members. Chapter leadership is a terrific opportunity to “give back” to our systems engineering profession, and help shape the future success of our Chapter.

-Tim Schuler

C-NO President

Exciting Chapter Meeting Topics Coming in October and November

Our chapter is very pleased to continue bringing interesting topics and new speakers to our membership! We have had very good turnouts in the past couple of months, and no problems with parking, getting a good seat, or seeing the screen.

The theme of resilience has emerged during the process of lining up speakers, and it continues in October, with a presentation by Professor James Armstrong of Stevens Institute of Technology. Resilience enables a system to continue to carry out its mission in the face of adversity or disruptions. Jim will talk about several famous system failures from the viewpoint of the impact of requirements, verification, and validation; and adding the impact of integration on these failures. We look forward to his talk on Oct. 20, at 5:30 pm.

Our November chapter meeting will introduce a new chapter member, Dr. LuAnn Duffus, who will present “Exoskeleton requirements for firefighters: Use Cases reveal essential needs.” Stay tune for more information in the coming weeks!

-Marian Cronin

C-NO Chapter 2021 Election Candidates

Autumn is traditionally the time of year to elect Chapter Officers and Directors who will serve during the coming year.

On October 5, 2020, the Board of Directors approved the creation of a *second* At-Large Director position, to be filled by voting during the October 2020 Balloting Period.

The Vice President position has been vacant throughout 2020. Chapter Leaders heartily welcome VP candidates. I encourage any interested Chapter Member to contact me (Bill Klinger), to learn more about the VP role. We would be delighted to add your name to the 2021 Ballot!

For now, I am pleased to announce the following five candidates, for five positions:

- **President:** Tim Schuler
- **Secretary:** Dennis Rohn
- **Treasurer:** Marian Cronin
- **At-Large Director:** Brian Hallett
- **At-Large Director:** Sastry Kasibhatla.

Each C-NO Chapter Member eligible to vote should automatically receive an Election Notification, via e-mail. It will provide your unique login credentials for INCOSE's secure *eBallot* system. In the *eBallot*, you will find candidate bios and photos.

Please vote!

Last year, corporate firewalls blocked a few Chapter Members from accessing the ballot, at their Work site. If you encounter that problem, forward the Election Notification e-mail message to your Home E-Mail Address. Then, try again to vote, from home.

Please do not hesitate to contact me at klinger@modex.com or (440) 564-9340.

-Bill Klinger

Cleveland-Northern Ohio Chapter Nominations & Elections Committee Chair (2020)

Welcome to New Chapter Members

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

- Peter Holm, a Senior Systems Engineer at Centauri.
- LuAnn Duffus – see additional information below
- Thomas Cunningham, of H&S Tools

LuAnn M. Duffus, PhD holds a masters and doctorate in Economics from University of Illinois, Champaign-Urbana and a masters in Industrial and Systems Engineering from Ohio University. Dr. Duffus has applied model-based system engineering to various projects including real-time, fault tolerant SS7 databases and their SQL provisioning systems in the telecommunications network while at Bell Laboratories. In 2009 she was honored by appointment to the Alcatel Lucent Technical Academy (ALTA) for technological leadership. Her research focuses on innovations and the policies that aid or hinder innovation.



-Dennis Rohn

Cleveland-Northern Ohio Chapter Membership Chair

August Annual General Meeting and Chapter Meeting Summaries

On August 4, 2020, an Annual General Meeting was conducted. Tim Schuler, C-NO President for 2020 updated attendees on the Chapter and plans for moving forward. There was good discussion with the attendees on ideas for future Chapter meetings and activities.

The August Chapter Meeting was held on August 18, 2020 and featured a presentation by Dr. Rick Hefner on Resilience in Systems Engineering. The presentation addressed what resiliency is and why it is important as a design consideration in today's systems. Various means to achieving resiliency and attributes of resilient systems were discussed.

Presentations for both these meetings can be found on the Chapter website.

September Chapter Meeting Summary

The September Cleveland-Northern Ohio Chapter meeting was held on September 15, 2020. There was a large virtual turnout, including a large number of guests from ReliabilityFirst. Speakers Carl Dister, Myra Moss, Brian Hallett, Lindsey Mannion, and Bill Klinger discussed the Community Appraisal for Resiliency Effectiveness (CARE) Project that is being developed by ReliabilityFirst. The CARE Project, utilizing gamification, is designed to help communities identify areas where they could do additional work that would increase their resiliency in the event of a long-term power outage. Anyone interested in knowing more about it or willing to assist communities with the assessment are welcome to reach out to Chapter members Carl Dister, Brian Hallett, or Bill Klinger. The presentations should be posted in a few weeks on the Chapter website.

Systems Engineering as a Virtue Practice?

COURAGE VIRTUES

<i>Cowardice</i>	BRAVERY	<i>Foolhardy</i>
<i>Helpless</i>	PERSEVERANCE	<i>Obsessive</i>
<i>Phony, Deceptive</i>	HONESTY	<i>Unfiltered</i>
<i>Sedentary</i>	ZEST	<i>Hyperactive</i>

TEMPERANCE VIRTUES

<i>Merciless</i>	FORGIVENESS	<i>Permissive</i>
<i>Arrogance</i>	HUMILITY	<i>Self-deprecation</i>
<i>Sensation-seeking</i>	PRUDENCE	<i>Stuffiness</i>
<i>Self-indulgence</i>	SELF-REGULATION	<i>Inhibition</i>

HUMANITY VIRTUES

<i>Emotional Isolation</i>	LOVE	<i>Emotional Promiscuity</i>
<i>Indifferent</i>	KINDNESS	<i>Intrusive</i>
<i>Clueless/Obtuse</i>	SOCIAL INTELLIGENCE	<i>Over-analyzing</i>

JUSTICE VIRTUES

<i>Selfish</i>	TEAMWORK	<i>Dependent</i>
<i>Detached</i>	FAIRNESS	<i>Partisanship</i>
<i>Compliant</i>	LEADERSHIP	<i>Despotism</i>

TRANSCENDENCE VIRTUES

<i>Oblivion</i>	BEAUTY/EXCELLENCE	<i>Snobbery/Perfectionism</i>
<i>Thankless, Entitled</i>	GRATITUDE	<i>Ingratiation</i>
<i>Negative, Fatalistic</i>	HOPE	<i>Pollyanna-ism</i>
<i>Overly serious</i>	HUMOR	<i>Giddiness, Irreverence</i>
<i>Anomie, Nihilistic</i>	SPIRITUALITY	<i>Fanaticism</i>

WISDOM VIRTUES

<i>Conformity</i>	CREATIVITY	<i>Eccentricity</i>
<i>Disinterest</i>	CURIOSITY	<i>nosiness</i>
<i>Unreflective</i>	JUDGEMENT	<i>Narrow-minded</i>
<i>Complacency</i>	LOVE OF LEARNING	<i>Know-it-all</i>
<i>Shallow</i>	PERSPECTIVE	<i>Overbearing</i>

Tables adapted from R. Niemiec, [Character Strengths Interventions](#) (2018) and Aristotle, [Nichomachean Ethics](#)

“I really enjoy seeing a system come together whether it is a software package, electrical machine, aircraft, or an entire organization as a system. It is a great pleasure to be part of global development teams of diverse members of various technical specialties, sales and marketing, human resources, executive sponsors and stakeholders... everyone pulling together to accomplish the mission. Specifically, practicing Systems Engineering has helped me grow in the virtues of Transcendence. As a Systems Engineer, I get to see “Beauty/Excellence” emerge through years of engaging with others, but only if I avoid the trap of “Snobbery/Perfection”. My other team members help me with this! If I demand too much perfection from the team, they will quickly remind me of deadlines and compromises, and I need to adjust. Also, as a Systems Engineer, I need to be wise in balancing “Perspective”. If I only care about the high level requirements and completing the system, I become too “Shallow”. But, if I get too much into the specialist business, they find me “Overbearing”. Systems Engineering has helped me also to grow in wisdom as a human being. What a wonderful profession, we are really fortunate to be Systems Engineers!” – *Carl J. Dister, CSEP*

“Perspective...that is something that has resonated with me as a systems engineer. I see three dimensions of this, a personal perspective in how you act (the dimension discussed by Carl), a system perspective, and a personal skills perspective. When I think out the system perspective, two things come to mind. Years ago, in one of the first formal systems engineering training sessions I took, the instructor was a professor from George Mason University. He used to say that as a systems engineer for a specific system (say an automobile engine), you really should have the perspective of working for the higher level system (the automobile) and represent it to the engine. This was essentially to encourage optimization of the higher-level system, rather than the system you were assigned to do the systems engineering for. When I look back on my career, I often point to one event where I reflected this system perspective and point to it as where I became a systems engineer. Early in my career, I had the opportunity to work on rockets. Less than three years out of college, I was overseeing the identification of requirements for computer control (new at the time) of the propellant loading system and their implementation. During the first simulated launch countdown, which included tanking of a vehicle, some anomalies were occurring within the control system. With a higher-level perspective and being aware of what else was taking place when the anomalies occurred (maybe because I was able to be an observer rather than the hands on operators), I was able to identify the cause of the anomalies, before others. If your system perspective is too shallow, you will know very little about how your system fits in to the bigger picture or the smaller parts fit in to yours, but if your perspective is too overbearing, you may get overwhelmed trying to understand it all. The third dimension is related to personal systems engineering skills. To be a versatile systems engineer your skills perspective needs to be balanced. Large projects may require many systems engineers, but they often need to focus on a single area within systems engineering, such as requirements management, while for a small project one person may be responsible for all the systems engineering activities. Without a balance of skills, you will not be able to perform as well in both situations. There may be other dimensions to perspective than these three, and would welcome additional thoughts.” - *Dennis Rohn*

“I think there is a lot to be said for the application of the Wisdom Virtues to my experience with the practice of Systems Engineering. My natural inclination to be curious about the larger organization, program, environment, or context of a system has to be tempered with a dose of healthy disinterest to prevent going down less-important avenues, in order to maintain balance and keep the work moving forward. Similarly, balance in the aspect of how much creativity to apply for a given situation has required some trial and error over the years. I think a lot of engineers have a comfort zone in process, tried-and-true method of analysis, or similar conformal aspects of design and analysis. But as SEs, we are often asked to tailor, customize, or otherwise reduce the burden of excess process in creative ways – without venturing into randomness, chaos, or eccentricity. There’s the Wisdom!” – *Marian Cronin*

“As we near the end of one our current projects at work, the reflection process naturally intensifies. What worked, what didn’t work, where could we have done better? Over these four years as a systems engineer I have been blessed to be working with a small group of systems engineers I consider to be true systems engineering professionals. What about this group of ours makes for an effective systems engineering team? Several common themes and virtues come to the forefront. Perseverance. There has always been a collective tenacity and drive within our team to keep the project moving forward. With that comes the risk of burnout, which we have all experienced. Though a certain healthy tenacity is a valuable characteristic for effective

systems engineering. Honesty. Communication is fast and often unfiltered. Whether the news be good or bad. We definitely do not prescribe to the principle of “don’t bring me a problem without a solution.” We collaborate quickly on solutions using the strengths of the whole team. A strong trust within your systems engineering team to “just bring the news” is essential. Which leads to a related virtue. Creativity. Of all the projects I have been a part of, what strikes me most with our current systems engineering team is our ability to pivot quickly towards a solution, or an entirely different direction. It is the down-and-in versus long-view balance that is key to good systems engineering. Engineers tend to encounter a problem and want to dig into the solution process. Good systems engineers ensure the proper solution team is deployed and immediately look at the trade space that was just created ahead. We are able to execute a fast-acting creative process to assess all the new possibilities and opportunities, much like a traditional “blue sky” approach, to keep the project on course. And we have teamwork. We have grown as a team, as we work through obstacles and opportunities within the project and things beyond our control, such as the COVID situation. Working together as systems engineers, we have learned from each other to the point where we are often interchangeable in our roles and responsibilities with the project, offering unique flexibilities. Most importantly, I feel we always have each other’s backs. A shout out to my systems engineering teammates ML, MS, and CR.”

– *Tim Schuler*

We would love to hear from you! Please let us know how you have grown as a person in virtue through your practice of Systems Engineering: Newsletter Editor: sean.m.beckman@nasa.gov.

To learn more about balancing virtues in the table above in your Systems Engineering work, check out this website: <https://virtuemedicine.com/professionalism-programs/>.

Systems Exchange Cafés



Are you aware that INCOSE has started holding Systems Exchange Cafés, as a way for members to interact and share experiences?

The Systems Exchange Café is a virtual meeting run on Zoom. It is based on the idea of a “book club”, where attendees come to meeting to discuss a book they agreed to read the time before. In the meeting they raise points raised in the book, debate the issues, and select a book for next time.

In the Systems Exchange Café, the idea is to discuss something related to systems – maybe a topic, a book chapter, a paper, a journal article or a topic in the news. A potential reading list will be prepared (so if a topic is chosen, some papers, articles, or books will have been suggested). Topics for future meetings are drawn from attendees.

More information can be found at <https://www.incose.org/about-incose/community/virtual-cafe>

Each Café meets every two weeks, and are on different days and at different times from each other.

- Fir Tree Café: (Tuesdays 7pm EDT)
- Oak Tree Café: (Wednesdays 3am EDT)
- Maple Tree Café: (Fridays 11am EDT)

Upcoming INCOSE Related Events

The list below provides a sampling of upcoming webinars and events that may be of interest to INCOSE members. Now that most chapters are holding virtual events, many welcome guest at their meetings. Many are listed on the INCOSE Events Page: <https://www.incose.org/events-and-news/events>, in addition to the Systems Exchange Cafés.

- **October 8-10, 2020 – Conference on Systems Engineering Research (CSER) 2020**
 - <https://sercuarc.org/event/conference-on-systems-engineering-research-cser-2020/>
- **October 13, 2020 – Model-Based Engineering Overview for Systems Management Practitioners**
 - Training offered by SAE, taught by Rick Steiner, 1:00-5:00 pm ET, \$299
 - <https://www.sae.org/learn/content/c2010/>
- **November 9-10, 2020 – INCOSE LA Training Day: Building Really Big Systems with Lean-Agile Practices and SAFe**
 - Virtual tutorial, 7:00-9:00 pm ET (free)
 - <https://www.incose.org/incose-member-resources/chapters-groups/ChapterSites/los-angeles/chapter-events/upcoming-chapter-events/2020/11/10/default-calendar/incose-la-chapter-virtual-meeting-building-really-big-systems-with-safe-by-harry-koehnemann>
- **November 17-18, 2020 – 2020 Systems Engineering Research Center (SERC) Research Review (free)**
 - <https://sercuarc.org/event/2020-serc-research-review/>
- **January 29-31, 2021 – INCOSE International Workshop (IW 2021) (Virtual)**
 - <https://www.incose.org/iw2021>
- **April 11-14, 2021 – 14th Annual INCOSE Great Lakes Regional Conference (GLRC14) (Detroit, MI)**
 - <https://www.incose.org/glrc>
- **July 17-22, 2021 – Annual INCOSE International Symposium (IS 2021) (Honolulu, HI)**
 - <https://www.incose.org/symp2021>

GLRC Regional Conference

Mobility Systems - Land, Sea, Air and Space

"Call for Submissions" is Open

Due to the COVID-19 pandemic the INCOSE 14th Annual Great.Lakes Regional Conference (GLRC14) has been rescheduled for April 11-14, 2021.

A hybrid (virtual + in-person) event is being planned, with in-person activities to be held at the Westin Book Cadillac Conference Hotel, downtown Detroit, Michigan. If an in-person event is not possible due to the pandemic an all-virtual conference will be conducted.

As always the GLRC will feature peer-reviewed technical presentations, panels, tutorials, workshops, keynote speakers, and the 5th Annual GLRC Systems Engineering Professional Development Day (SE-PDD) 8 hour/8 PDU Livestreamed program. A notable addition to the GLRC technical program this coming year is a full Student Track. The conference theme is Mobility Systems: Land, Sea, Air and Space.

"Call for Submissions" for the GLRC14 has been re-opened with a new deadline for submitting abstracts set at November 30, 2020. Please see: https://www.incose.org/docs/default-source/glrc14/flyer_glrc14_call_for_v2_18july2020.pdf to learn more and initiate your abstract submission.

COVID-19 Presenter Policy - Due to the uncertainties associated with COVID-19, and to ensure the safety of presenters, provisions for presenting remotely will be provided whether or not in-person conference activities are held.

Like us on Facebook

If you are on Facebook, search for Cleveland-Northern Ohio INCOSE Chapter and "like" us.



2020 Chapter Officers:

President:

Tim Schuler

Vice-President:

Secretary:

Dennis Rohn

Treasurer:

Marian Cronin

At-Large Director:

Sastry Kasibhatla