



The NorthCoast Interfacer

President's Corner



Having recently celebrated Thanksgiving, I am reminded of all of the things I am thankful for. One of those are my fellow Chapter Board of Directors members, who have helped to restart a number of activities within the chapter and begin others.

This time of year, is also when the weather begins changing. Fall weather, which is often comfortable with blue skies, gives way to cold and rain (and a little snow), with winter weather right around the corner.

Some people like the change to winter, while others cannot wait for summer to return. This gets me thinking about changes in our lives. In the last newsletter, I talked about a major change in my life – retiring, after working for 40 years.

Like the weather, there are some changes we look forward to and are positive, while there are others we dread. And there are some we can control, while others are out of our control. And isn't it much better when we focus on controlling positive changes, rather than worrying about negative ones that we can't control.

Getting involved in the Cleveland-Northern Ohio Chapter can be a way to help make positive change. Right now, we have members involved in three different project areas all making positive changes: a SySTEAM Initiative, which is intended to encourage underrepresented youth to consider a career in systems engineering; a Community Resilience effort to help communities become more resilient; and an Embedded Systems Certification Working Group working to identify knowledge on top of basic systems engineering that is needed to be a good embedded systems engineer.

If any of these project areas interest you, feel free to reach out to the points of contact, or the Chapter Board of Directors can put you in touch with them. Or is there some other systems engineering related activity that you are interested in that can effect positive change. Bring it to the attention of the Board, and perhaps we can find a way to help you make it happen.

As usual, if you have any suggestions for chapter meeting topics, feel free to reach out to us.

I would like to challenge each of you to stay curious and participate in our chapter meetings or these project, invite colleagues to attend with you, and encourage them to join INCOSE.

- Dennis Rohn
2023 C-NO Chapter President

Welcome to New Chapter Members

Welcome to new Chapter members since our last Newsletter! The Board of Directors hopes the Chapter can aid you in your professional development and looks forward to getting to know you.

- Vincent Lieu
- Simon Owens
- Yeshwanth Chandrashekar Reddy
- Todd Fine
- Scott Ewonus
- David Jones
- Nick Mazzino



To all members, I would encourage you to invite co-workers and other systems engineers you know to join INCOSE and become active in the Chapter.

- Dennis Rohn
Cleveland-Northern Ohio Chapter Membership Chair

Report on the October Chapter Meeting

Site Selection Process

Throughout 2023, the C-NO Chapter Events Committee (Carl Dister, Bill Klinger, and Marian Cronin) chose Chapter Meeting Sites that lie beyond our usual Cleveland-area stomping ground, in the hope of better serving Chapter Members who reside in farther corners of Northeast Ohio.

We sought to:

- highlight the rich cultural heritage of diverse ethnic groups whose diligent community efforts contributed to the character and strengths of the region
- gather at historical venues we can experience together, and
- share useful information on Systems Engineering topics.

With those objectives in mind, Carl Dister, Bill Klinger, and Ed Livernois toured the city of Lorain on August 4, visiting six candidate sites. At the end of the day, after meeting key contacts, we concluded that Lorain would be a fine destination for our fourth Chapter outing of the year.

Lorain, Ohio

Lorain is the third-largest city in Greater Cleveland. Located on Lake Erie at the mouth of the Black River, about 25 miles west of Cleveland, Lorain's population was 65,211, as of the 2020 census.

Industrial Past

Lorain's economy once flourished from three heavy industries, built mostly around steel:

- **American Ship Building Company** Lorain Yard (1898-1984)
- **Ford Motor Company** Lorain Assembly Plant (1958-2005)
- **United States Steel Corporation** Lorain Tubular Operations (closed in 2020; 1,500 jobs lost)

Today, the city's economy is "deindustrialized." The poverty rate exceeds the U.S. average.

Demographics

During the first half of the twentieth century, steel companies in Lorain intentionally attracted immigrant workers from Mexico and Puerto Rico. Neighborhoods along East 30th Street and Vine Avenue grew to become one of the largest Latino communities in Ohio.

Chapter Meeting Timing

We chose the October 10 date for the meeting in Lorain, to timely celebrate **National Hispanic Heritage Month**.

Historic Venue: Lorain Historical Society's *Carnegie Center*

With a cornerstone laid on August 18, 1903, the masonry building at 329 W. 10th Street—funded by the Andrew Carnegie Library Foundation—served as Lorain's public library until 1957.



Photo courtesy Lorain Historical Society

Since 2013, the “old Carnegie Library” has been wonderfully repurposed as the home of the Lorain Historical Society. It houses administrative offices, a community meeting room, gift shop, historic display center, and an education center.

In August 2023, the National Park Service added the LHS Carnegie Center to the National Register of Historic Places.

Historical Presentation: Lorain and Latinos



Photo by Bill Klinger

The Executive Director of the Lorain Historical Society, Barbara Piscopo, gave a compelling, from-the-heart talk about the work of the Society: “Telling the whole story of all of Lorain’s people.” Barb focused on The Latino Lorain History Project, begun in 2019, which created the graphic display *Celebrating 100 Years of Latinos in Lorain*, based on personal oral histories.

Puerto Rican Buffet

We worked with Ramon Osorio (owner of **Mi Casa Sabor Latino**) to plan and cater a buffet of *authentic* Puerto Rican dishes.

Thanks to a generous subsidy approved by the C-NO Chapter Board of Directors, Chapter Members paid just \$10 each, for their meals. Further, we treated the hard-working LHS Staff to free dinners.

MENU

- **Steak & Onions (*Bistec Encebollado*)**
- **Fried Chicken (*Pollo Frito*)**

- ***Pasteles***

Resembling a Mexican tamale and classed as a type of dumpling, *pasteles* typify a cherished culinary legacy, reportedly originated by the indigenous Taíno people of *Borinquén* (Puerto Rico).

The labor-intensive process of assembling *pasteles* is a Puerto Rican family-bonding tradition, particularly around Christmastime. After multiple preparatory cooking steps, a soft, dough-like mass (*masa*) is formed by hand around a flavorful central filling, then wrapped in a banana leaf or plantain leaf, followed by parchment paper, tied with string. The resulting packet is boiled or steamed.

In **Mi Casa Sabor Latino *pasteles***, the *masa* consists of grated green banana, surrounding a filling of chopped pork and olives.

- **Pinto Beans (*Frijoles Pintos*)**
- **Spanish Rice (*Arroz con Gandules*)**
- **White Rice**
- **Vegetables**

Green banana, *yuca* (cassava) [a starchy root tuber], and *batata* [a white sweet potato]—boiled and steamed.

- **Cheese Flan (*Flan de Queso*)**

A milk-and-caramel custard, made with eggs and cream cheese.

Virtual Technical Panel: Systems Engineering Outsourcing Strategies

Carl Dister arranged and hosted a discussion of Systems Engineering job security, the sensible hiring of consultants, and outsourcing decision factors.

Panelists:

- Ravi Gopalkrishna (Cyient)
- Maxwell Pierce (Triple Crown)
- Darian Muresan (Stevens Institute of Technology).

Each panelist was prepared to present a distinct “position” on outsourcing. Unfortunately, during the session, Max Pierce was called away on a pressing matter and could not present.

Ravi Gopalkrishna (Senior Delivery Director at Cyient in Bengaluru, Karnataka, India) presented on the excellence in Systems Engineering available in India today. Carl remarked: “I recall 20 years ago, India was still catching up to best practice in the U.S., regarding Systems Engineering, but today they are at the state of the art in the practice. Ravi has many years’ experience helping global companies augment their engineering staffs with expertise from India.” *Position:* Don’t exclude India for Systems Engineering in the modern day; they have advanced to be world class in this area.

<https://www.linkedin.com/in/ravig-pmp/>

ravig.pmp@gmail.com

Darian Muresan (Teaching Professor at the Stevens Institute) is also Chief Technology Officer at Computer Vision Company (Hoboken, New Jersey). He helps engineers keep current with the most important technologies. *Position:* Systems Engineering is evolving. AI needs to be factored in. Also, students are showing a passion for actually building things, not just highly conceptual thoughts. Therefore, as SE advances in the U.S. (and the world), we must not lose sense of the hands-on nature that attracts so many of us to the field of engineering. “Make something work with your hands too!”

<https://www.linkedin.com/in/darian-Muresan/>

dmuresan@stevens.edu

Acknowledgements

Many thanks to Carl Dister and Ed Livernois for spending all day with me on August 4, scoping out suitable venues for our Chapter Meeting in Lorain.

Victor Leandry, the Executive Director of El Centro de Servicios Sociales, Inc., kindly took time to engage with Carl, Ed, and me, in person, on August 4. During our 85-minute discussion, Victor enlightened us about complex, interconnected matters of immigration, industry, families, healthcare, and ethnic & cultural history in Northeast Ohio. Later, Victor connected us with Ramon Osorio, regarding our food-catering needs.

Barb Piscopo graciously facilitated our low-cost use of the Carnegie Center meeting space.

Brian Hallett smoothly handled the event funding.

Ed Livernois contributed a range of beverages to the buffet.

- Bill Klinger

Events Committee Member

C-NO Chapter Partners with INCOSE, NSBE, and Vitamix to Promote SySTEAM

Over an eight-month period during 2023, C NO Chapter Members led an initiative to explore opportunities for promoting **Systems, Science, Technology, Engineering, Arts, and Mathematics (SySTEAM)** in Northeast Ohio and beyond.

Our efforts led to a collaborative partnership that delivered an engaging, interactive event for local high-school students on December 9, 2023.

Stakeholder Organizations and Contributors

Between April and July, Carl Dister established collaborative connections among these organizations and people:

- **International Council on Systems Engineering (INCOSE)**
 - **INCOSE Cleveland - Northern Ohio Chapter**

Dennis W. Rohn (President); Carl J. Dister (Past President); Bill Klinger (Past President)

- **INCOSE SySTEAM Initiative**

Caitlyn Singam (Program Director)

- **National Society of Black Engineers (NSBE)**

Atija Harley (Manager, Pre-College Programs); Sonja Dorsey [NSBE Staffer]

Greater Cleveland NSBE Jr. Chapter

Ramona Lowery-Ferrell (Advisor); Angela Jones (Co-Advisor)

- **Vita-Mix Corporation**

Carl J. Dister (Senior Manager, Systems Management, Engineering); and seven Vitamix Subject Matter Experts who volunteered to support the NSBE Jr. Cleveland event.

Origin of the Local Initiative

Carl Dister and Bill Klinger had long sought to spur the C NO Chapter to conduct Systems Thinking Projects that benefit “social good” in our region. On March 27, 2023, Carl suggested that we reach out to the **Greater Cleveland NSBE Jr. Chapter**, regarding STEM (and, ideally, SySTEAM) education.

Carl and Bill attended the season-ending NSBE Jr. Cleveland Session held on April 8 in Avon, Ohio. There, they met NSBE Jr. Students and observed their interactions (during a year-end recap, an award ceremony, and at play). In-person discussions with Angela Jones and Ramona Lowery-Ferrell opened the door to C NO Chapter collaboration with NSBE Jr. Cleveland.

INCOSE SySTEAM Initiative

Since 2021, INCOSE has strengthened and broadened their original STEM activities, under the leadership of Caitlyn Singam (Program Director for INCOSE’s SySTEAM Initiative). Motto: “Improving education for all students, everywhere.”

INCOSE SySTEAM Mini-Conference

Bill attended both days (July 27-28) of the online conference organized and conducted by Caitlyn Singam, which attracted more than 200 registered attendees across 21 Time Zones. Main Topic: “The intersection between *system* STEM/STEAM education and systems competencies.”

Exploration and Planning

Carl Dister scheduled and hosted monthly Webex meetings that brought together local- and national-level leaders of NSBE and INCOSE—along with interested Vitamix personnel—to define the scope and nature of potential SySTEAM activities and events.

Caitlyn Singam graciously took time to attend each meeting, bringing her SySTEAM vision and thoughtful guidance to our discussions.

Carl aimed high—originally proposing a multi-NSBE Jr. Chapter *national* “blender competition,” to be held during NSBE’s 50th Annual Convention (in Atlanta, Georgia, March 20-24, 2024).

On July 26, Ramona Lowery-Ferrell suggested: “Maybe first do a one-day event at a local school—an all-day workshop.”

By August 23, the group focused on planning a compact, two-hour event that would fit into the NSBE Jr. Cleveland calendar of monthly sessions.

NSBE Jr. Cleveland: November Session (as a Benchmark Reference)

Dennis Rohn and Bill Klinger sat in on the entire two-hour Session of November 11, to better understand how NSBE Jr. Sessions typically proceed. (Carl Dister planned to be with us. Sadly, at the last minute, he had to attend a funeral instead.)

After the Session, Bill initiated a discussion with Angela and Ramona by asking, “What objectives are most important for the NSBE Jr. Students?” Their answers equipped Bill to inform the Vitamix folks about the importance of tailoring content and activities to suit the preferences of the NSBE Jr. Advisors and the needs of the NSBE Jr. Students. Moreover, the Vitamix-INCOSE Team would have just 90 minutes for their presentations and activities during the December NSBE Jr. Session—not the two hours originally assumed.

Event Venue: CWRU Sears think[box]

“The largest open-access innovation center and makerspace in the United States.”

Also on November 11, Bill toured all seven floors of the Richey Mixon Building (on the campus of Case Western Reserve University), to become more familiar with the amazing **Sears think[box]** facilities, equipment, and services.

That tour provided insights for staging the Vitamix-INCOSE NSBE Jr. Event and, perhaps, future INCOSE C NO Chapter Meetings.

Bill later communicated with three helpful Sears think[box] staffers, to arrange access to the building on a day (December 9) when the facility was scheduled to be closed.

Similarly, Bill reported on logistics for legal parking in both Permit-Only and Public Parking Lots.

Vitamix-INCOSE NSBE Jr. Event (December 9, 2023)

The Vita-Mix Corporation supplied breakfast for the K-to-8 and high-school students who gathered in the first-floor meeting space of **Sears think[box]** around 9 am, Saturday morning.

Once all the students had introduced themselves and recited the *NSBE Jr. Mission Statement*, Carl Dister started the event, tailored for the ~24 high-school-age NSBE Jr. Students present.



The Vitamix-INCOSE Team (from left to right): Ashley Gowens, Carl Dister, Dennis Rohn, Catherine Vermeersch, Adam Wilson, and Mark Guinto



Carl Dister kicks off the event.



Dennis Rohn engages students in Q&A.

Six members of the Vitamix-INCOSSE Team gave slide presentations covering seven topics, in 40 minutes or so:

- Ashley Gowens: **Introduction to Vitamix**
- Dennis Rohn: **Systems Engineering**
- Carl Dister [for Bill Bailey]: **Types of Electric Motors**
- Catherine Vermeersch: **Blades and Blending**
- Carl Dister [for Guy Kettavong]: **Industrial Design**
- Mark Guinto: **Intellectual Property**
- Adam Wilson: **Culinary Arts**

The intent was to expose the students to SySTEAM Concepts, as applied in the design and manufacture of Vitamix blenders.

Chef Adam Wilson explained how various SySTEAM Principles come together to create high-performance Vitamix blenders. He then enlisted the students in three successive hands-on activities—making distinct mixes in the machines: a frozen dessert, a hot soup, and a fruit smoothie. That 50-minute exercise completed the event at 11:03 am.



At left: A cheaply made, knock-off blender has been cut in half, for inspection of the internal parts.

To vividly demonstrate fundamental scientific principles pertinent to their blender products, Vitamix furnished a quantity of simple electric-motor kits that the students could take home and assemble. Quite a few students were immediately captivated by the “Hand Boilers” that illustrate the effects of vapor-liquid equilibrium, activated by the heat of one’s hand.



A simple electric motor sits to the left of a blender carafe.



A so-called “Hand Boiler.”

Acknowledgements

Many thanks to the Vitamix folks (not already named above) who participated in our Planning Meetings: Alisha Foley, Alison Hines, Patricia Neumann, and Hanna Steinker.

Thanks go to the Vita-Mix Corporation for generously sponsoring the event, funding the breakfast, and kindly supplying the “educational toys.”

I am personally grateful to the **Sears think[box]** staffers who expertly supported our access to and use of the facility: Ainsley Buckner, Elton Fernando, and Jimmy Salgado Juarez.

Dennis Rohn skillfully cropped and edited the photos (all taken by me, Bill Klinger), to suit this article.

- Bill Klinger
Events Committee Member

The INCOSE Systems Engineering Journal



One of the INCOSE member benefits, is the opportunity to read articles in the INCOSE Systems Engineering Journal. It is an international scholarly journal and a primary source of multidisciplinary information for the systems engineering and management of products and services, and processes of all types. The issues can be accessed via: https://www.incose.org/2023_redesign/publications/se-journal.

The following articles can be found in the September 2023 issue.

- REGULAR ARTICLES
 - Adapting a strategic foresight framework to reuse integration
 - New observing strategies testbed: A digital prototyping platform for distributed space missions
 - The impact of system representation choices on architecting insights
 - Model-based diagnosis with FTTell: Diagnosing early pediatric failure to thrive
 - Component-based specification, design and verification of adaptive systems
 - Technical debt in the engineering of complex systems
 - Design teams and industry life cycles: The interplay of innovation and complexity
 - Incremental IoT for industrial maintenance using the legacy culture
 - Modeling, simulation, and trade-off analysis for multirobot, multioperator surveillance
- REVIEW ARTICLES
 - Failure probability assessment of emergency safety barriers integrating an extension of event tree analysis and Fuzzy type-2 analytic hierarchy process
 - Activating supply chain business models' value potentials through Systems Engineering
 - Technical debt in systems engineering—A systematic literature review

C-NO Chapter 2024 Election Results

Following the December 19 to December 29 Balloting Period, I am pleased to announce the new cohort of C NO Chapter Officers:

- **President:** Dennis Rohn
- **Vice President:** Amber Waid
- **Treasurer:** Brian Hallett
- **Secretary:** Sam Ciccone
- **Director At-Large:** Joel Knapp
- **Director At-Large:** Anna Sanford



Their term will run until the end of the first Chapter Meeting in 2025.

Many thanks to everyone who voted!

- Bill Klinger

Nominations & Elections Committee Chair (2024)

Volunteer Opportunities



Interested in becoming more involved in CNO Chapter affairs but have limited time? Like to learn more about how the chapter and INCOSE operates? The board is looking for interested parties to assist with meeting organization, newsletter publication, and other tasks that don't require a long-term commitment. Volunteer to organize a meeting or event, or contribute to the newsletter. Contact the board for more details.

International Workshop 2024



There is still time to register and make plans to attend the 2024 International Workshop (IW2024), being held in Torrance, California from January 27 to 30. There are a number of plenary sessions and business meetings, but the bulk of the workshop consists of various working groups meeting together to discuss aspects of their group and work on projects. Even if you are not a member of a working group, they all welcome new people stopping by to check them out.

Systems Engineers at all levels and from all backgrounds are encouraged to engage in working sessions, and contribute their knowledge and experience to take the discipline forward. IW2024 facilitates a moment and a place where attendees

can build networks, perform activities, and produce outcomes beyond their typical network and focus area. Accomplishing these goals is greatly enabled by in person attendance, with virtual participation offered for selected sessions.

Information on IW2024 can be found at <https://www.incose.org/iw2024/when-where>.

Welcome Center Cafes



Do you ever wish you knew a little bit more about INCOSE? Whether you are a new member or have been a member for several years, you might want to check out the New Member Welcome Center Cafes. This is a program with a new featured topic each month to introduce our new members to various communities, initiatives, and individuals that make INCOSE thrive.

Details can be found at: <https://www.incose.org/engage-with-incose/new-member-welcome-center>. If you want to see past cafes, they can be found in the New Member Welcome Center Cafe Archive (<https://www.incose.org/engage-with-incose/new-member-welcome-center/new-member-welcome-cafe-archive>).

Like us on Facebook

If you are on Facebook, search for [Cleveland-Northern Ohio INCOSE Chapter](#) and “like” us.



2023 Chapter Officers:

President:

Dennis Rohn

Vice-President:

Sastry Kasibhatla

Secretary:

Amber Waid

Treasurer:

Brian Hallett

At-Large Director:

Sam Ciccone