The Integrator
North Star Chapter of INCOSE Newsletter

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Chapter News

The President's Corner …

Greetings members and friends of the North Star Chapter!
As the Holiday Season approaches, the end of 2019 nears as well. It has been a great year for the Chapter, and I am grateful for the opportunity to have served as President in such fortunate circumstances. The Chapter is growing, INCOSE is growing, and the value of Systems Engineering continues to gain recognition by an increasing number of organizations. In short, it is a great time to be a systems engineer and a member of INCOSE.

Some things to feel good about for 2019

- LinkedIn group started with roughly 70 members and is up to 110.
- Chapter Membership started at 171 and we are ending the year at 180
- The Cyber Security Working Group is building momentum and presented the Fall Tutorial
- We have the A/V and PA equipment for remote hosting of meetings and holding our own conferences
- We are establishing a relationship with Minnesota State University

The Chapter provided support and participation in GLRC-13

- The Chapter is working to help rejuvenate the Heartland Chapter
- The Chapter engaged the CAB representatives to better meet the needs of the CAB members
- Submitted a nomination for Dave Walden as an INCOSE Fellow
- The Chapter awarded 26 INCOSE pens to presenters
- The Soft Skills Working Group has been officially started
- Assisted with the Health Care Working Group conference
- We accumulated enough Circle Award points to submit the Chapter for Platinum recognition

For October, the Chapter had many significant events.

First, the Chapter officers held a "Voice of the CAB Member" dinner meeting to collect input from the CAB companies. INCOSE would like Chapters to reach out to CAB companies to find ways to better meet the needs of their members. It was an excellent discussion, and the Chapter collected several pages of notes. The ideas from this meeting helped to set the direction for the Chapter in 2020.

Second, the Chapter held the fall ambassador meeting. The ambassador program is an important part of the Chapter, and the mechanism for outreach into the organizations that have members in INCOSE. Developing our ambassadors is an initiative in 2020.

Third, the Chapter held a member appreciation and recruiting event at REM5 VR Lab in St. Louis Park. This event was great fun, and several attendees stated that this was one of the top events put on by the Chapter. The Chapter reserved 6 VR stations for 2 hours and everyone rotated through the various games available. Lots of discussions, and lots of food was consumed, by the folks waiting their turn.

Fourth, the Chapter meeting for October was a panel discussion on the future of Systems Engineering. Eileen Arnold, Paul Frenz, Esteban Solorzano, and Bill Farmer shared their perspectives on the direction of Systems Engineering and entertained several questions from the attendees. The conclusion is that the next several years will be an excellent time to be a Systems Engineer. Also, this was the Chapter's first live-stream with remote attendance.

November had an equally substantial impact.
First, the Cyber Security Working Group presented the Fall Tutorial on Cyber Security. This tutorial has received many compliments from the attendees. One, from the defense industry, noted that they thought their systems were 100% secure, but were able to uncover a new attack surface due to the material presented in the tutorial. The activity that walked-through the events of a cyber-attack was the highlight of the day and clarified the realities that surround Cyber Security.

Second, the Cyber Security Working Group held their fall meeting in December. The group is working on clarifying the direction of the group, providing a clear definition of the mission, and aligning with the structure of other INCOSE working groups by utilizing the INCOSE Charter for working groups.

Third, the November Chapter meeting was at the University of Minnesota with the main presentation given by the marching band director, Besty McCann. Besty is the first female marching band director in the Big Ten. She captivated an audience of 25 engineers by talking about leadership and building diversity into an organization. After Besty's delightful presentation, the group was able to walk on to the TCF Stadium field to explore how things look from that the perspective of players, and the band.

For December, we take a month to reflect on the year, plan the next year, and transition to a new leadership team. Our annual Christmas and Winter Holiday celebration is the only formal Chapter activity during this time. This year's attendance was lower than in the past, but all in attendance had a great time. Behind the scenes, the leadership team is collecting the data for the Circle Awards, and process of planning and budgeting for 2020 begins.

In closing, I would like to thank everyone for their support and participation in INCOSE and the North Star Chapter. This has been a fantastic year of growth, surprises, and accomplishments. All of them due to the contribution, dedication, and kindness of the people that choose to participate. Again, I am grateful for the opportunity to serve as the Chapter's President and look forward to the great things that we will accomplish in 2020.

Remember, the North Star Chapter is your chapter. If you have a request, a suggestion, or would like to become more involved, contact me, or any Chapter officer.

Sean McCoy
2019 President, INCOSE North Star Chapter
sean.mccoy.csep@gmail.com

MEET the North Star Chapter Officers for 2020!

President for 2020 - Roz Dolid

Roz was born and raised in Minneapolis, has BSME and MSME degrees and a PMP®. She has managed engineering projects for at MTS Systems Corp, North Star Imaging Inc, and DIGI International where she is currently the Engineering Services Manager. Roz is excited to tackle the position of President of the INCOSE North Star Chapter to continue to build on the successes of 2019 and expand the initiatives for more diversity.

President-Elect for 2020 - Sean McCoy

Sean is the Chief Architect at Trane. He received his CSEP in 2016 and has over 35 years of experience designing and building software systems. Sean has been an active member of INCOSE since 2011. He spent several years developing Trane's Requirements Management, Process Automation, and Test Management systems in PTC Integrity. In his spare time, Sean likes to play guitar and can often be seen at Rock Camp Experience events.

Treasurer for 2020 - Mike Keyes

Michael is a Senior Test Engineer at Phillips-Medisize. He is an active member of the INCOSE North Star Chapter and a past president. In his spare time, he likes reading, wood working, saber fencing and spending time with the family. His most recent free time endeavor is as an assistant soccer coach for his son's team.

Co-Directors of Academia for 2020

Udhay Dayalan

Udhay works as a Systems Engineer at Trane. Udhay has a Master's degree in Software Engineering from University of Minnesota and currently pursuing his PhD in Computer Science at the University of Minnesota. He received his CSEP in 2018. Udhay has been an active member of INCOSE since 2016. In his spare time, Udhay likes to learn and develop proof of concepts on trending technologies.

Dan Stone

Dan has spent more than a decade as an R&D engineer in the medical device industry. He has worked in multiple roles as a systems engineer, a process engineer, and a human factors / user experience engineer. Dan has been active in INCOSE for a number of years now, most recently serving on the North Star Chapter leadership team as the Director of Academia for the past three years and as a company ambassador to the chapter. he will continue to build on the relationships he has established, look to continue to increase involvement of both engineering students and early career engineers in INCOSE, and continue to seek new avenues to increase INCOSE's exposure in academia.

Welcome New Chapter Members!

The International Council on Systems Engineering (INCOSE) is a not-for-profit membership organization founded in 1990 to develop and spread the interdisciplinary principles and practices that enable successful systems. We have grown to more than 17,000 members meeting in over 70 local chapters in over 35 countries which translates to boundless opportunities to network, learn and have fun.

As members we represent a broad spectrum – from student to senior practitioner, from technical engineer to program and corporate management, from science and engineering to business development. We work together to advance our technical knowledge, exchange ideas with colleagues, and collaborate to advance systems engineering. There are many exciting challenges ahead and we are glad you are joining us!

MATTHEW ROOTES, Senior System Engineer at Medtronic. Matthew is an experienced Engineer with a demonstrated history of working in the medical device industry. Skilled in Verification and Validation (V&V), Medical Devices, Testing, and SolidWorks. He is a strong engineering professional with a Bachelor's degree focused in Mechanical Engineering from Minnesota State University, Mankato. Find Matthew Rootes on LinkedIn.

ROSANNA CHAMBLISS, Sr Manager- Mechanical Engineering at Northrop Grumman Corporation. Rosanna is the Senior manager for structural, material and mechanical engineering group. She specializes in process engineering, project management, problem solving, six sigma, engineering, new product development, and documentation. Find Rosanna Chambliss on LinkedIn.

JACK MONDRY, Sr. Systems Engineer at Monteris Medical. Jack has a broad range of experience in the medical device industry ranging from deep technical analysis to multi-disciplinary project leadership. He has held roles in all stages of the product life cycle with an emphasis on upfront R&D work. His current R&D work is in the neuro critical care arena with experience in pre-clinical studies, regulatory submissions, clinical trial support, and transfer to commercialization/manufacturing.

Jack is a lifelong learner and actively seek new challenges to overcome. He is recognized as a leader and am often looked to for astute and timely decision making. Thanks for checking out the Jack Mondry profile on LinkedIn, he looks forward to networking!.

WILLIAM SMITH, Lead Software Engineer at General Dynamics Mission Systems.

RAGHU CHEJARLA, Sr Firmware Reliability Engineer, Six Sigma DRM Green Belt at Medtronic. Raghu is an experienced Senior Reliability Engineer with a demonstrated history of working in the medical device and automotive industry. He is skilled in Engineering Management, Root Cause Analysis, Lean Manufacturing, Risk Management, DFMEA and certified 6Sigma green belt. Raghu is a strong engineering professional with a Master's Degree focused in Electrical Engineering from Bradley University. Find Raghu Chejarla on LinkedIn.

DAVID HANSEN, Director of Engineering at Minnetronix Medical. David is passionate about the support and development of talented individuals who are productively applying engineering for a greater societal benefit. Find David Hansen on LinkedIn.

JENNIFER GIBBS, Principal Systems Engineer at Boston Scientific. Find, Jennifer Gibbs on LinkedIn.

October 19th Membership Networking Event at REM5 Virtual Reality Laboratory

We Played, Explored, Learned & Created in VR ... We Welcomed the future.

Virtual reality has come a long way since the View-Master.REM5's mission is to bring high-end, virtual reality technology to the local community. Housed in over 6,000 square feet of amazing industrial modern space in St. Louis Park, REM5 offers a state-of-the-art virtual reality experience for all ages, experience levels, and interests. The REM5 approach makes premium VR accessible, comfortable and social … EAT, DRINK & VR is our motto. Virtual reality isn't just for techies, it's for everyone.

November 1st Fall Tutorial: Cyber Security- A Practical Guide for a Systems Engineer

Tired of the fear mongering related to all of the bad things than can happen with a security attack? Bored with the humorous anecdotes about all the places salacious files have been found? Confused by the hype and esoteric terminology that even confuses expert practitioners? While Cyber Security has developed into a dedicated field in its own right, the amount of noise and misinformation remains too high.

Gone, are the days that we could address security features after a system was essentially complete. In today's complex and integrated Systems of Systems, security features are now primary requirements. Securing data, encrypting data, preventing malicious use and unauthorized access are critical to System Architecture and System Function.

This tutorial was tailored to the needs of a Systems Engineer. The buzzwords are transformed into practical concepts that can be applied immediately to organizations and product development efforts.

The presenters were Mangaya Sivagnanam and Glenn Gasmen. Mangaya Sivagnanam is a security researcher, speaker, writer, coach and currently working as Principal Cybersecurity Architect at Trane | Ingersoll Rand, with extensive experience in secure web/enterprise and embedded applications framework design, analysis, development, and deployment - based on client/server applications and commercial Industrial Control Systems. Mangaya has expertise and experience in innovation, security architecture for the web-apps, SCADA, Industrial Control Systems, Internet of Things, Mobile, Cloud Computing, Big Data Security, Smart Connected Buildings and Smart Cities. She has wide-ranging experience with Heterogeneous System's Software Design (Secure SDLC), DPIA, Threat Modeling, Attack Modeling, Security and Risk Analysis, Threat Intelligence, Penetration Testing. She is also responsible for coordinating and managing the Incident Response Process and Preparedness for the advanced Building Automation Systems and Solutions.

Glenn Gasmen is a product development and engineering management professional with more than 25 years of experience across telecommunications, test and measurement, IT consulting, industrial control systems and building automation systems. He thrives on using his background in electrical and electronics engineering, organizational behavior and project management in growing engineering teams, helping engineering teams launch new products and leading new strategic initiatives.

Where We Have Been . . .

October 10 Meeting: A Panel Discussion on the Future of Systems Engineering

What will be the driving forces to shape the direction of Systems Engineering? Will it be the evolution of tools and technology? Will it be the never-ending drive for meeting the needs of business? Will it be the pursuit of Agile methods? Will it coalesce into a single discipline to be applied to multiple industries, or will it specialize into industry-specific applications? Will the pursuit of diversity and equity in the work-place put Systems Engineering on a new path? Will the new generation of Engineers adapt and modify Systems Engineering into something exciting and new?

The participants got involved in a discussion on this subject with a panel of the North Star Chapter's members. From past Chapter-Presidents, to Systems Engineering Managers, to practicing Systems Engineers, to members of Academia, this panel presented a diverse set of perspectives. The Chapter members only added to the diversity.

November 14th Meeting: Music to your ears! - Successfully Building a Diverse Organization

This event was based on Practical Experience in Managing the University of Minnesota Marching Band and included a guided tour of the TCF Bank Stadium and Facility, the home of the Minnesota Vikings football team.

The Message: A college marching band is strikingly similar to a corporation: a collection of teams (or instrument sections), all with their own roles, specialties, and cultures, must excel in their individual areas in order for the organization as a whole to succeed and thrive. Utilizing replicable methods, our speaker, Betsy McCann, has created a culture in the Marching Band that allows individual members and teams to discover and contribute their best to the established culture of the larger organization. In speaking to groups across the country, Betsy shows how managing culture can be done in other organizations to increase productivity, results, and employee satisfaction.

The Tour: Built in 2009, TCF Bank Stadium was designed to be a state-of-the-art facility that not only serves sports fans but meets the needs of the University. The largest tenant in the stadium is the University of Minnesota Marching Band. The Band's 20,000 square foot facility, housed in the stadium, has been used as a model for other Universities across the country as they design new facilities for their campuses. INCOSE members were able to tour this facility then step out onto the field of TCF Bank Stadium.

Our Speaker: Betsy McCann is the Assistant Director of Bands and Director of Marching and Athletic Bands at the University of Minnesota. In this position, she directs the "Pride of Minnesota" Marching Band, conducts the University Band, teaches undergraduate conducting, and manages the comprehensive Athletic Bands program. Betsy is the first woman to head a Big Ten Marching Band and Athletic Bands program. She has guided the program to great success on and off the field, including a recent internationally renowned performance in the Super Bowl LII Halftime Show. Betsy earned degrees from the University of Minnesota and Northwestern University and is an active guest conductor, clinician, and speaker. We learned some useful and practically applicable rules from her.

December 7 Winter Social: Christmas and Holiday Celebration at Wildfire Restaurant

It was time to wrap-up 2019 and finish the year with the NSC annual Christmas and Holiday Social event. This year was a dinner at Wildfire Restaurant in Eden Prairie.

Socializing was followed by dinner and wrapping things up with a brief recap of 2019. We had a very nice private room and fun was had by all.

INCOSE Publications: Keeping up with Technology…

Technical Publications

Technical Publications include Handbooks and Guidebooks that provide formal INCOSE technical information relative to topics within Systems Engineering; and, provide task guidance, advanced methods, lessons learned, cookbook techniques, and criteria. INCOSE Technical Products are developed within INCOSE and must be processed, reviewed, and approved in accordance with the Technical Product Review and Approval Process.

INCOSE Technical Products

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A Complexity Primer for Systems Engineers

Guide to Writing Requirements

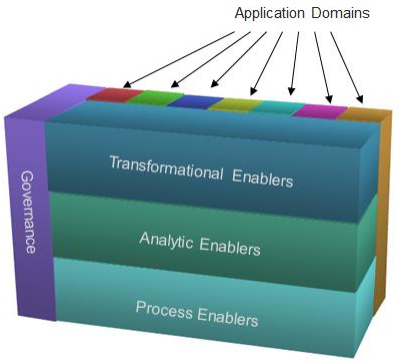
PM's Guide to SE Measurement for Project Success

[SE Competencies Framework 2010-0205]

[SE Leading Indicators Guide]

[Technical Measurements Guide]

Keep your skill set current and keep up with best practices by joining a Working Group TODAY!



INCOSE working groups are a great place to meet individuals who are looking to overcome similar challenges. These groups often span multiple regions and industries, so we can really look at these topics in a broad, informed way. In the North Star Chapter, we have several members Chair/working in different groups like the Measurement, SE in Very Small Enterprises (VSE), Handbook as well as others. There are many topics to choose from. Finding the groups and joining is easy!
To join any working group:

1. Login to your account at INCOSE.ORG
2. Click on the “Profile Home” link under your login at the top of the page.
3. Scroll down to **My Committees/Working Groups** on the lower left-hand side of the page and click on the link **Browse / Join a Working Group**
4. This will result in a list of Working Groups under the header Committees. (The terms are interchangeable)
5. Scroll down until you see find a committee that you are interested in. Click the link and then on the right click on the (view) link.
6. This will result in a roster of current WG members.
7. Scroll down to the bottom of the list and under “Committee Tasks” click on "Join this Committee"

Working groups are a great way to learn more about a subject, grow your network, and share your knowledge about a subject.

Learn more about what we can do. Click here for the *INCOSE Members Newsletter*

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