

INCOSE Midwest Gateway Chapter 2019-Q1 Newsletter



<https://www.incose.org/midwest-gateway/>

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- 4/25 MGC Social, 5-7PM, Sports Café, Bridgeton
- 5/16 Speaker Series: Scaled Agile Framework, Location TBD
- incose-mgc.org/events

If your company is posting a systems engineering position, or if you're looking for one, please contact Kirk at kirk.kittell@incose-mgc.org and we'll use our chapter resources to help you find what you're looking for.

President's Message

Hi all. I'd like to extend a special thanks to our INCOSE members from Leonardo DRS and Saint Louis University, our focus organizations for the first quarter of 2019. You all came out in force to our Career Lifecycle event in February to represent. That's what I like to see. Here in the St. Louis area there is a diversity of technically outstanding organizations and—since technical excellence often manifests itself in complex systems—systems engineering excellence. But it often goes under the radar. That's why we shine the spotlight every quarter on some of our local organizations so you can see what they're doing. If you didn't meet someone from DRS or SLU at one of our events, or you don't know what products they make or courses they offer, ask me and I'll introduce you. It's my duty as a systems engineer to connect you, and it's your duty as a systems engineer to understand the environment in which you operate. Besides: it's more interesting to know what's going on.

In this second quarter, we'll be focusing on bioMerieux and Missouri S&T. Come out to one of our events (<http://incose-mgc.org/events>) and learn more about them. If you work at bioMerieux or go to school at Missouri S&T, use this opportunity to promote yourself and your team. For the rest of you, use this opportunity to learn more about these two organizations, what they do, and how they do it—it will benefit you and your career.

—Kirk Kittell, 2019 MGC President
kirk.kittell@incose-mgc.org

PS: I'm looking for a focus company in the Metro East for Q3. If you know any great systems engineers or companies doing great systems engineering there, get in touch.

In the News – MGC Highlights

2018 Holiday Party – Members, some accompanied by family, helped our chapter celebrate the holidays at the Sports Café, in Bridgeton. The evening's reception, greeting and networking period allowed everyone to share good conversation. John Thompson, MGC President, kicked off the evening by welcoming the attendees and summarizing 2018 accomplishments. He recognized chapter volunteers, and celebrated the candidates who successfully completed the MGC-sponsored SEP certification training and achieved their systems engineering certification credential. Dinner, emceed games and prizes were awarded.

MGC New Year Social Mixer – On January 24, the MGC sponsored a happy hour at the Sports Café. Ten members plus guests were able to attend. A key objective of MGC social events is offering members an opportunity to meet outside of professional environments and strengthen our relationship networks with each other. Our next planned happy hour is April 25th, 5:00 – 7:00 at Sports Café, Bridgeton, MO. Hope to see you there!

2019 IW Highlights – In January, six MGC members attended the INCOSE International Workshop conference in Torrance, CA. This conference is the key INCOSE-sponsored Working Group (WG) gathering intended for SEs to engage and collaborate with 47 WGs addressing topics from Agile to Very Small Entities. A selection of attendee comments:



2019
Annual **INCOSE**
international workshop
Torrance, CA, USA
January 26 - 29, 2019

Mike McCarthy (attended Systems and SW Interface Working Group): The WG purpose is to understand, clarify and work to resolve issues with the systems-software interface that challenge our ability to engineer today's and tomorrow's systems. These interfaces include physical, logical, data and human aspects. I think there is potential for meaningful future projects of interest to MGC members. Past products include a webinar on "What Systems Engineers need to know about software" and a paper presented at IS2018. Future projects include a second webinar, a paper for IS2019, several INSIGHT articles and updating the SEBOK article on software engineering. The group meets monthly by telecon.

Richard Pascual (attended MBSE 101, MBSE Patterns WG and Requirements WG): MBSE 101 hosted by Elyse Fosse from JPL, she used MagicDraw, Tom Sawyer for display software, and Open MBSE; Requirements WG was enlightening; used term 'chilled' vs. 'frozen' requirements

Kirk Kittell (attended several WGs): I attended meetings for several different working groups to collect a variety of working group information to bring back to the chapter and to look for potential partnerships for chapter events. The best working group meeting I attended was for the PM-SE Integration WG (project management-systems engineering). In 2017 INCOSE, along with PMI and MIT, published a book: Integrating Program Management and Systems Engineering: Methods, Tools, and Organizational Systems for Improving Performance. Current initiatives INCOSE-MGC members could participate in are the comparison of PMBOK and SEBOK content and establishing consistencies between various product breakdown structures. Attending also prompted me to contact the PMI Metro St. Louis chapter about a joint meeting this year.

2019 Engineers Week – National Engineers Week was celebrated February 17–23, 2019.

Engineers Week focuses on increasing awareness, understanding and appreciation of engineers' contributions to society. For INCOSE, this year's theme was Engineers: Invent Amazing. At Boeing, our MGC organization hosted a booth at the Engineers Week Engineering Opportunity Fair. The event highlights engineering and engineering organizations and opportunities for those interested in engineering. The MGC booth was staffed by Kirk Kittell, John Thompson and Rob Simons who met with many engineers and provided information on the role of INCOSE in advancing the state of systems engineering and our MGC goal of supporting engineering development among our members.



MGC SE Career Panel Event – Kirk Kittell “What comes to mind when you think of systems engineering?” On February 28, the MGC sponsored a Systems Engineering Career Lifecycle panel. We had a variety of systems engineers from various stages of their career talk answer lightning-round questions from the audience. The event was intended to provide greater insight on systems engineering careers through the perspective of panelists at different stages of their careers. Our panelists were Shaun Mathews (grad student at SLU), Kara Heimburger (DRS), Matt Ingram (Mastercard), and Mary Malast (DRS), with a cameo appearance by Lou Pape (Boeing). Thank you all for your participation and willingness to sit up in front of the audience and offer your perspectives. And, in the spirit of fair play, the panelists enlisted the audience to offer their experiences. (This is why you have to read the fine print on your tickets.) Secretly, this is why we hosted the event. Systems engineering is often billed as something that integrates different disciplines or different products. And it is. But the kind of thinking that can do this sort of integration is also suited for another thing: cross-generational integration. There are no standards or procedures for doing it, but it's something an organization or engineer must do in order to be successful and sustainable. That's why we had a curious audience asking such questions as:

- If you could go back and change something in your career, what would you change?
- Who is your engineering role model?
- What is the difference between a good and a great systems engineer?



From Mary Malast:

My favorite question, and one that really got me thinking, was about my workplace failure. It should have been easy to think of at least a dozen examples, but I had a hard time recalling one then. What made the question hard was that I support teams. I don't think in terms of my individual successes or failures generally, although I certainly make individual mistakes. Most decisions of importance are made by my team, both the good and the bad ones.

From Kara Heimburger:

My favorite question was "Is Systems Engineering more of a managerial or technical role" because it really makes you question the balance of both within the work place. Many people probably lean more one way than another, but it is important to see the merit in both roles. As a Systems position requires the familiarity of various engineering disciplines, a strong understanding helps bridge technical connections amongst the people involved. This results in a Systems Engineer's responsibility to relay these connections to the Program Manager or the customer since they have an overarching understanding.

From Shaun Mathews:

One of the questions that had got me thinking was "Is System Engineering a technical or a managerial job?". The answers given by the panel members were fantastic and it actually sums up what this field of engineering actually is (especially for a fresher like me).

On a lighter note, I have one follow-up question from the event. When I was cleaning up after the event, I found a notepad with a question that was never asked during the event, which is a shame because it is a profound question. So let me ask you. Send me your answers at kirk.kittell@incose-mgc.org and we'll post them in the next newsletter

"If you use systems engineering analysis, should you drink beer or wine?"

Something to think about.

Career and Professional Development Speaking Event – On March 27, the MGC hosted a Speaker Series event and welcomed Cheryl Roth and Bryan Ard from the Saint Louis University Workforce Center.

The SLU Workforce Center provides technical training, certificates and nationally-recognized certifications to technical audiences across many disciplines. Cheryl and Bryan addressed the topic of Systems Engineering Career and Professional Development, and provided an introduction to their



facility, professional development program offerings and multi-mode delivery options. Bryan delivered a presentation on 'Why Python' focused on applications to technical areas of interest to systems engineers, and as an introduction to the Python programming and training curriculum available to MGC members. The SLU Workforce Center offers a broad variety of topics to choose from and is far less expensive than many degree program courses. The time commitment to complete courses is much shorter and courses are generally pass/fail with the exception of certifications that mandate specific attendance, testing and scoring threshold requirements. Earned credits document skill training and support requirements needed to maintain your INCOSE Systems Engineering Professional (SEP) certification. Some companies reimburse employees; for those that don't your INCOSE MGC may be able to negotiate a reduced fee with SLU if we have enough participants for a class or certificate program. Please contact any MGC board member with any questions or help needed in getting started.

Membership Committee New and Returning Members – John Thompson, 2019 Membership Director

We are pleased to announce the following new and returning members in 2019. What makes our chapter great are the experiences and diversity of our membership. Current members, please be sure to introduce yourself to them at our next Midwest Gateway Chapter event!

New members since Jan 1, 2019:

- Alnuaimi, Mohanad DRS Technologies, Inc.
- Aly, Yahia Lockheed Martin Corporation
- Cobbs, Andre Embry Riddle Aeronautical University*
- Smith, Christopher Boeing Company
- Tesch, Eric Embry-Riddle Aeronautical University*

Note: * denotes student membership

Member renewals since Jan 1, 2019:

- McCarthy, Michael Insight Global
- Pascual, Richard Boeing Company,
- Potter, Christopher DRS Technologies, Inc.
- Pulliam, Michael DRS Technologies Land Systems
- Schieferdecker, Beverly Boeing Company,
- Strohmeier, James J. DRS Technologies, Inc.
- Wechsler, David J. DRS Technologies, Inc.

Membership Corner Q&A with Mohanad Alnuaimi, Systems Engineer, Leonardo DRS

Q. Hi Mohanad! Where are you from?

A. I am a West Virginian Mountaineer!

Q. How about a little background?

A. I started my position as a system Engineer with DRS in December 2018. Before that, I was teaching control theory course at West Virginia University (WVU). I am about to finish my PhD. in Aerospace Engineering from WVU. I have a Master's degree in Aerospace Engineering from WVU as well, with an emphasis in control systems for mechanical and aerodynamics models, artificial intelligence techniques and navigation and path planning for UAVs.



Q. What you like about Systems Engineering?

A. Systems Engineering will make you understand the big picture of how a variety of systems integrate to identify inefficiencies and propose recommendations and improvements to solve the issues.

Q. Why did you join INCOSE?

A. INCOSE is a preferred organization by DRS; other colleagues encouraged me to join to get the advantages of networking during regular meetings and learn more about systems engineering. The first day I started my position as a system engineer it was the right time to join.

Q. How would you like MGC to be better (improve) for systems engineers?

A. More activities to encourage more folks to join MGC.

New Member Introduction – Welcome Richard Pascual, Systems Engineer, Boeing Company

My name is Richard Pascual and I have worked within many engineering areas at the Boeing Company for over 25 years. Academically, my background is in biology (BA Biology) and electrical engineering (BSEE, MSEE).



I began [working] at Boeing as an electrical power system engineer on the International Space Station (ISS) where I experienced my first exposure to systems engineering. My involvement on Future Combat Systems split my time as a systems engineer with field & integration engineering duties at White Sands Missile Range in El Paso. With past experience as an instrumentation engineer on C17 and C130 at Edwards Air Force Base, I was hired to be a systems engineering advocate for the Instrumentation & Data Systems team in the Midwest Flight Test Operations group.

In my current role, I promote systems engineering principles wherever I can find an opportunity. Originally, I faced resistance to the increased up-front effort to incorporate systems engineering, but was highly encouraged to continue by Boeing SMEs like Bob Scheurer, Rick Neupert and Mitch Galatioto. Today, I have been able to perform processes such as requirements development, traceability, configuration management and verification & validation for programs such as LVBD (Large Volume Bus Data), FECU (Flutter Exciter Control Unit) and dCABeDAU (Distributed Control and Acquisition Bus Ethernet Data Acquisition Unit).

My interest in INCOSE started a few years ago, but I did not understand its influence until I found myself referring constantly to the INCOSE SE Handbook. All facets of Systems

Engineering disciplines are defined and explained in this reference book. I have joined the Midwest Gateway Chapter of INCOSE to get firsthand accounts of their experiences and look forward to continue advocating systems engineering with their help.

Opportunities for Members – Inputs and Volunteers Needed

Our chapter has set aggressive goals to grow our member value, increase visibility and grow membership across our region

- **Chapter secretary:** Our 2019 Secretary position is open for a candidate who will sit on the MGC Board of Directors (BoD) and be responsible for organizing BoD activities, leading MGC correspondence with INCOSE headquarters and other external agencies, supporting required documentation production, and providing guidance to adjacent MGC Committees. This position is an outstanding opportunity for those in the early stages of their SE careers who wish to expand their SE network and grow their SE knowledge. Please contact any BoD member for more information.
- **Metro East programs:** Several MGC members are exploring growth opportunities in the Metro East. Those interested please contact Rob Simons (rob.simons@incose-mgc.org) or Mike McCarthy (mike.mccarthy@incose-mgc.org).
- **Program development for chapter workshops:** The chapter is hosting workshops on Scaled Agile Framework (SAFe), cybersecurity, and MBSE later this year. We need help developing the events, creating the materials, and providing feedback.

Guest Column – Career and Professional Development (CPD)

What is CPD? Generally speaking, CPD is the acquisition and documentation of training, new knowledge capture and applied skills for personal and professional benefit. CPD is an enabler for improving your personal brand and represents an investment in yourself.

What's the Benefit? It should be clear that updating skills, acquiring new knowledge and demonstrating expertise is critically important for systems engineers. CPD is an opportunity to quickly obtain and apply improved skills in the workplace without the substantial financial and time investments associated with formal degree programs. Analysis and modeling, cyber security, and agile development applications are areas that are rapidly growing in importance. CPD can get you up to speed in these areas quickly and your CPD accomplishments drive benefits to you and your organization, right away.

Why Should You Care? CPD is career-enhancing in your current organization and portable if considering opportunities elsewhere. New and updated credentials are evidence of competencies that become critically important in a competitive labor market where demand for technical talent is high. As systems engineers, CPD supports our efforts to address complexity and the increasing depth, breadth and connectedness of our organizations and systems of interest.

How to apply CPD? CPD credentials are a powerful addition to your personal portfolio. What is the best method to apply CPD? The best method is what works best for you. Given that, here are guidelines to consider:

1. First, **CPD is an investment in yourself, so own your career**. YOU hold primary responsibility for your personal and professional development. No one else.
2. Second, **define goals that CPD can help you achieve**. Articulate them with language that motivates you to be an implacable foe of impediments.
3. Third, **construct a plan with achievable interim objectives** that when met, continuously moves you towards your goals.
4. Fourth, **find resources to enable your plan**. Many employees have employer-provided training opportunities. Seek them out and apply them to best help you achieve your interim objectives. Consider working with a career mentor.
5. Fifth, **be relentless**, hold a 'can-do' attitude and never give up. Carry out your plan and trust that continuously achieving plan objectives helps you reach your goal. If this stage becomes discouraging, see #1.

Your CPD accomplishments increase your accessibility to choices and options that otherwise may have never been available. Consider CPD as a key enabler for your personal and professional development plans and invest in yourself.

Note: If you would like to submit a candidate guest column (up to 1 page) for consideration in future newsletters please contact Rob Simons (rob.simons@incose-mgc.org).

Upcoming Events

- INCOSE 29th International Symposium, 20-25 July 2019, Orlando FL (<http://www.incose.org/symp2019>)
- Spirit of STL Airshow and STEM Expo, 7-8 September 2019 Chesterfield, MO (<http://spirit-airshow.com/>)
- INCOSE Western States Regional Conference (WSRC) , 13-16 September 2019, Los Angeles, CA (<https://www.incose.org/wsrc2019>)
- INCOSE Great Lakes Regional Conference (GLRC), 21-25 October 2019, Cleveland, OH (<https://www.incose.org/GLRC13>)