INCOSE WMA

A SYSTEMS ENGINEERING ORGANIZATION

The Offical News Letter of the Washingon Metropolitian Area (WMA) chapter of the International Council on Systems Engineering (INCOSE)

President's Message

This is our first official 2017 Newsletter, so allow me to offer a belated welcome to the New Year! Our thanks to the Washington Metro Area (WMA) retiring Board for their work and leadership this past year. Your WMA chapter had, by all estimation, a superior 2016, and we are looking forward to an equally exciting and successful 2017. It promises to bring us new knowledge and work with topics like Model Based Systems Engineering (MBSE,) Systems Engineering (SE) and Security integration, SE and Cloud computing, and Department of Defense (DoD0 Digital Engineering.

Starting off the year, 25+ WMA members recently attended the annual INCOSE WORKSHOP 2017 (International Workshop [IA] 2017) in Torrance, CA, where we interfaced with members of other chapters as we worked/discussed and created the new issues and topics for Systems Engineering. I encourage all of you to look at the variety of workshops available on the INCOSE.ORG website. Workshops are the lifeblood of INCOSE; they foster growth, adjustment and direction for the organization. Anyone can join a workshop; most of the actual work is done virtually. It is free, fun, and an opportunity to both learn and contribute. I am fond of saying (though a few chapters may disagree!) that WMA pretty much owns the knowledge about Government SE. As the largest United States INCOSE chapter, (2nd in the World) WMA members are well regarded for both our chapter success and the unique knowledge we bring to most discussions. So, check out the working group opportunities.

We are working on some exciting opportunities and events this year, and all members are invited to be involved. Aside from our monthly meetings (which are often streamed to remote sites), we also help put on Science, Technology, Engineering and Mathematics (STEM) events, SE tutorials, and again this year, we are sponsoring ASEP/CSEP testing. In particular, we want all WMA members to encourage recent college SE graduates to take the test. It's an excellent opportunity. They can get their first certification (ASEP), and then they can aquire thier CSEP after 5 years is a paper exercise. We are also looking at some additional meeting and information sharing technologies, but those are works in progress right now. Check the **www.incosewma.org** website for additional details.

Mark your calendar for the INCOSE International Symposium 2018 (IS 2018). It will be held in D.C. during the month of July 2018! More details are available on the INCOSE website, but having the event here doesn't happen very often. We will be looking for volunteers to help.

Finally, welcome to the new George Washington Student INCOSE Chapter, which WMA will sponsor. WMA also sponsors the very successful and accomplished George Mason Student Chapter. I'm sure both of these Chapters would welcome any alumni support.

Hoping for a great 2017, please contact the WMA board if you have any questions or suggestions about WMA. Thank you for your continued membership and involvement.

Sincerely,
William (Bill) Scheible
WMA President

Chapter Happenings

Save-the-Date: Graduate Education Event – April 5, 2017

On behalf of the INCOSE WMA chapter, we would like to invite you to join us on April 5th to a very unique event. In the spirit of continuing education INCOSE WMA is hosting its first ever Graduate Education Event. This month we will be hosting speakers from universities like WPI, GMU, RMU and GWU to come share some insight into their program and answer any questions you may have.

Please check **http://www.incosewma.org/category/events/** for more info and registration details.

WMA February meeting featured Professor Ken Harmon

The WMA February meeting featured Professor Ken Harmon, ISE Extended Campus Program and Director, Engineering Administration Graduate Program at Virginia Tech .   He works at the Virginia Tech Northern Virginia Campus in Falls Church, VA (**http://ise.vt.edu/academics/extended/syseng.html**).

Ken had a distinguished career in industry for over 20 years before joining the Virginia Tech community. He spoke about the history of Virginia Tech and Systems Engineering going back many years to its humble beginnings as a graduate program in 1971, and its growth into multi-discipline, multi-course program of today. Ken then discussed his thoughts on the future of Systems Engineering, and lead the meeting in a good question and answer session about the next 45 years of evolution in Systems Engineering.

INCOSE WMA Agile Systems Engineering and Systems Architecture Working Group

INCOSE WMA would like to invite you to join INCOSE WMA **Agile Systems Engineering and Systems Architecture Working Group**.

The purpose of the working group is to conduct research and analysis in areas of Agile Systems Engineering and Systems Architecture with the goal of adding to the Systems Engineering Body of Knowledge. We are looking for 10-15 individuals to set up a monthly recurring IPT.

- Potential objectives over the life of the working group include the development of research, white papers, and even an eventual primer for Agile Systems Engineering and Systems Architecture.

Agile Systems Engineering: In today's world there is increasing demand for more adaptive, responsive, evolving and agile systems. Agile systems engineering principles and methods have been proven to create solutions and environments that enables continuous improvement, reduce risk, improve transparency, enhance efficiency by reducing time-to-deploy operational capability, increase collaboration, and facilitates rapid adaptation of new business needs.

Systems Architecture: Systems Architecture or a System Architecture is an increasingly important component in the expansion of methods and tools for Systems Engineering. Its most prominent practitioners define systems architecture in two interrelated ways. One is that Systems Architecture is a conceptual model defining the structure, behavior, and relationships between components of a system that formally describes the reasoning, characteristics, and organization of the system. The other is that a Systems Architecture develops a set of internal and external views (targeting different audiences and purposes), some at a very high level, while others decomposed to a selected component, which provides representations and models for the working characteristics of the system.

Chairs: Shakila Khan (**skhan@mitre.org**) & Daniel Canales (**Daniel.Canales@vencore.com**)
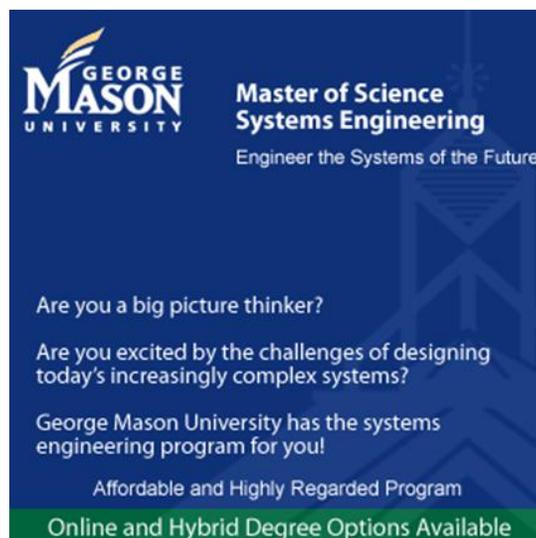

SIX CHIX   BY RINA PICCOLO

INCOSE WMA New Members

Congratulations to our Members that have joined in the months of November and December.

Welcome aboard!

First Name	Last Name	First Name	Last Name
Kristen	Andrieu	Vivek	Kumar
Kalen	Bauman	Jason	Lee
Miriam	Boussouf	Rick	McClure
Ameet	Brar	Alexander	Morris
Aaron	Brune	John	Organek
Sharon	Cohen	Thomas	Palmer
James	Cooper	Don	Pettit
David	Cui	Handie	Podo
Ralph	Dommes	Christopher	Polacco
Trang	Escobar	Prakash C	Rao
Amy	Gau	Aujchariya	Rueangvivatanakij
Tracee	Gilbert	Russell	Salley
Evan	Graupmann	Tadeusz	Scott
Rebecca	Graupmann	Steven	Shaw
Keith	Gregory	John	Shortle
Anita	Hill	Mike	Silag
Eric	Ho	James	Smith
Robert	Hoffman	Albert Benjamin	Spencer
Mark	Jacyna	Rebecca	Stroh
Dara	Kreal	Chung	Wu
John	Krieger		

INCOSE WMA New Member Spotlights

Dr. Judith Dahmann was recently elected an International Council on Systems Engineering (INCOSE) Fellow

Dr. Judith Dahmann was recently elected an International Council on Systems Engineering (INCOSE) Fellow, a high honor received by only 79 people worldwide with distinctions in systems engineering. Her election is effective immediately and will be formally announced at the organization's 27th international symposium held in Adelaide, Australia, this July.

INCOSE is the premier professional association for systems engineers. Its mission is to address complex societal and technical challenges by enabling, promoting, and advancing systems engineering and systems approaches. The group was established in 1991 and has more than 11,000 members worldwide.

A 40+ year MITRE career

Dr. Dahmann is a senior principal engineer and a division system of systems (SoS) capability lead in MITRE's Systems Engineering Technical Center. Among her areas of focus:
- applying system-of-systems engineering (SoSE) to produce work program impact
- pushing the envelope in advancing the state of the practice
- developing learning paths and practical resources, such as methods, best practices and tools
- doing external outreach to project MITRE's technical thought leadership in SoSE to our sponsors and the broader professional SE community

She joined MITRE more than 40 years ago and has actively contributed ever since. Early in her career, she applied evidence-based approaches to analyze federal programs to improve criminal justice systems; assessed simulations for military exercises and training; and tested distributed military systems and systems of systems.

While on MITRE assignment with the DoD as the Defense Modeling and Simulation Chief Scientist, Dr. Dahmann led the development of a general purpose distributed system architecture for simulation. The work formed the intellectual foundation for IEEE standard 1516, which prescribes the framework and rules for modeling and simulation of high-level architectures.

"Mastering and pushing the state of the art"

Dr. Dahmann is well known for advancing the discipline of SoSE. She formed and co-chairs the INCOSE SoS Working Group and the National Defense Industrial Association Systems of Systems Engineering Committee. She led the development of the Department of Defense Guide for Systems Engineering of Systems of Systems.

In addition, Dr. Dahmann led the development of The SoS Implementers' View (Wave Model), an agile, evolutionary life cycle approach to SoSE. The approach was recognized with a best paper award at the 2011 IEEE International Systems Conference. It is widely considered a leading practice and has been adopted as guidance to SoSE implementation by the DoD.

Dr. Dahmann also led an international team of systems engineers to develop Recommended Practices - Systems of Systems Considerations in the Engineering of Systems. This collection of experiences from across The Technical Cooperation Program (TTCP) participants ensured that critical SoS issues are addressed early and throughout system development. The guidance was recognized with a TTCP Principal's award in 2015. It has also been accepted as the basis for a new ISO standard being developed by an international working group, which Dahmann co-leads.

Dr. Dahmann is widely sought out as an instructor and featured speaker. She has lectured or given keynote speeches at:

- The Cornell University Ezra's Round Table/Systems Engineering Seminar
- Complex Adaptive Systems
- IEEE SoSE and the Complex Systems Design & Management Conferences
- The Johns Hopkins University
- An ongoing NATO Science and Technology Lecture Series on SoS

"Judith's career epitomizes mastering and pushing the state of the art in systems engineering, not just in theory, but also in practice for some of nation's most complex challenges," said Rich Byrne, senior vice president for programs and technology in the Center for Connected Government. "Her recognition as an INCOSE Fellow could not be more well deserved!"

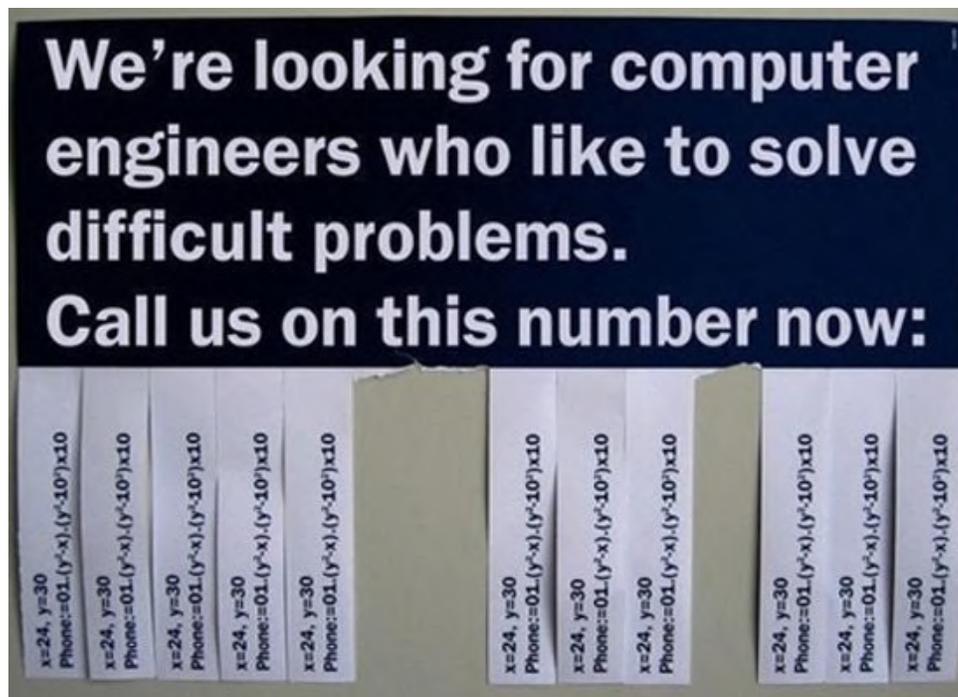## Caroline Abramson: A Strong Female Presence in STEM

When you think of engineers, most will think of a male engineers. However, women like Caroline Abramson have started to break that mold. Not only is she president of the student chapter of INCOSE (International Council on Systems Engineering), but she also has a job in this field, while perusing her Masters and her Bachelor in Systems Engineering BS/MS program. Talk about a girl boss!

Though Caroline does not view herself separate from the guys in her class or field, it is not unknown that men engineers outnumber women engineers almost 12:1, according to National Society of Professional Engineers. In recent years however, the numbers slowly start to creep up. I got the chance to sit down with Caroline and get her personal views from a vantage point of a female in a man's world.

When asked what it is to work in a man-dominated field, she answered that she's never left like an outsider or that she did not belong. "All of the guys I have met through school and through work have been respectful and have completely viewed me as an equal." Perhaps due to progressive mindsets, women have found more courage to enter fields like science, engineering, and finance in which have been previously associated with mostly run by men.

For more information please read the article here:
http://www.hercampus.com/school/george-mason/caroline-abramson-strong-female-presence-stem

INCOSE Technical Leadership Institute

INCOSE Technical Leadership Institute is a development program for active INCOSE members seeking to improve their leadership skills in open, collaborative environment.

Purpose:

The purpose of the Institute is to accelerate the development of systems engineering leaders who will exemplify the best of INCOSE and SE profession.

Program Overview:

The technical leadership institute is two-year program where new cohort is formed annually. There are four events per year: two face-to-face and two webcast. There are individual projects work between the events. Each cohort mentors the one following. The candidate for the cohort must be nominated by an INCOSE Chapter leader by submitting an application package and be recommended by their home organization.

The Benefits:

• Individual members will become more capable leaders within their organizations
• INCOSE will have a growing pool of capable leaders from which to draw on, filling leadership positions
• INCOSE's international reputation will be enhanced by helping to develop systems engineering leaders of the highest caliber

INCOSE Technical Leadership Institute is accepting nominations for their new cohort that is going to kick-off summer 2017. If you have a candidate you would like to nominate, please reach out to INCOSE WMA chapter BOD **bodall@incosewma.org**

Found on the Web!

"When compared to typical systems engineering endeavors, the application of model-based systems engineering delivers a 55% reduction of the total development cost. The most mature form of MBSE is model-based product line engineering (PLE). When compared to typical systems engineering endeavors, the application of model-based product-line engineering delivers a 41.6% reduction of the total development cost."

Systems Engineering Body of Knowledge Course - IEEE Smart Tech [6 Videos]

This 4-hour course covers practical applications of systems engineering processes and methods as documented in SEBoK (the guide to the systems engineering body of knowledge) and 15288 (the ISO/IEC/IEEE standard for system engineering processes). Examples and case studies are used to illustrate processes, methods, and techniques for developing purposefully-engineered systems. Taught by Richard E. Fairley, Principal Associate of Software and Systems Engineering Associates (S2EA). Included Videos

You can purchase this **here**

• IEEE Member US $39.99
• Society Member US $39.99
• IEEE Student Member US $39.99
• Non-IEEE Member US $59.99

Volunteer Opportunities

Monthly Meetings

Our mission is to serve the systems engineering community in Washington, DC and its suburbs. INCOSE is an international professional organization dedicated to advancing the practice of Systems Engineering.

For more details and to Register go to the INCOSE WMA web site at: www.incosewma.org

NEXT MEETING IS TBD

2017 Tutorial Request

Looking to build your Systems Engineering eminence or looking for PDUs for your SEP certification, or just love to teach! Then you are in luck. INCOSE WMA is looking for presenters for the 2017 season. We are looking for candidates to provide tutorials on any subject but we are targeting the subject areas related to:

- Brewing System
- ATM's
- Dreamliner/ Cruise Ships
- Underwater Amphibious Vehicles (AUVs)
- Aeriel Unmanned Vehicles (AUVs)
- Smart Home Systems
- Border Protection Systems
- Recycling Systems
- Security Systems

Candidates should email: tutorials@incosewma.org

STEM

Interested in STEM? Join the INCOSE STEM Committee. We are charged with advocating STEM programming across the Washington Metro Area. Click here: **https://groups.google.com/forum/#!forum/incose-wma-stem-wg** and hit "Apply for Membership

Our vision:

Science, Technology, Engineering, and Mathematics (STEM) are at the cornerstone of being a consummate systems engineer and are vital to our future. In a world that is becoming increasingly complex, it is often through practicing STEM professionals we are able to move the needle on invention and innovation for the better good of all society. All young people should be able to think critically and reason deeply so that they have the opportunity to become scientist, innovators, educators, and researchers solving current and to-be discovered global challenges. INCOSE's mission is to "share, promote and advance the best of systems engineering from across the globe for the benefit of humanity and the planet." The best way to share, promote, and advance the SE practice is through the enablement of our future leaders, equipping them today with the skills and ability to tackle our toughest global problems of tomorrow. INCOSE WMA will be standing up a STEM working group whose purpose is to address the very issues identified above and instill the strategic long term 'systems' thinking in our young leaders. Please join our Google group for more information.

Upcoming Systems Engineering Events

Complexity-Based Analytics and Policies for Social Good (CAPS)
April 12-14, 2017, U. of MD, Washington, DC

Symposium on M&S of Complexity in Intelligent, Adaptive and Autonomous Systems
April 23-26, Virginia Beach, VA

Spring Simulation Multi-Conference
April 23-26, 2017, Virginia Beach, VA

IEEE International Systems Conference (SysCon) - Includes an INCOSE Special Track
April 24-27, 2017, Montreal, Quebec, Canada

MODSIMWORLD: Modeling and Simulation in the Age of Data
April 25-27, 2017, Virginia Beach, VA

SATURN (SEI Architecture Technology User Network Conference)
May 1-4, 2017, Denver CO

IEEE System of Systems Engineering (SoSE) Conference
June 18-21, 2017, Waikoloa, HI

International Conference on Naturalistic Decision Making
June 20-23, 2017, University of Bath, UK

INCOSE International Symposium 2017 - Unlocking Innovation through Systems Engineering
July 17-20, 2017 in Adelaide, Australia

NDIA Systems Engineering Conference - Paper deadline TBD: contact Ms. Tina M. Fletcher, tfletcher@ndia.org, (703)247-2558
October 23-26, 2017, Springfield VA

INCOSE International Workshop 2018
January 20-23, 2018 in Jacksonville, FL

INCOSE International Symposium 2018 - Papers probably due November 2017
July 7-12, 2018, in Washington DC

Upcoming Journal Issues and Webinars

SERC Talks: Can Graphical Models Provide a Sufficient Basis for General Intelligence? With Dr. Paul S. Rosenbloom, Institute for Creative Technologies, U. So. CA
April 5, 2017

SERC Talks: What are Cyber-Social Learning Systems and How Will We Form Them? With Dr. Kevin Sullivan, U. VA
June 7, 2017

CrossTalk Theme Calendar - (CrossTalk Article Coordinator)
- Sept/Oct 2017: Software Release Management (due April 10, 2017)
- Nov/Dec 2017: The Software Engineering Profession (due June 10, 2017)

Cheasapeake Chapter Upcoming Events

Soft Skills Leadership Workshop - 22 April 2017

Ms. Teresa P J Armstrong Leadership & Professional Development Workshop Professional Derailment: Improve "Soft Skills" to Support Your Career Goals April 22, 2017 (Saturday), 8:00am – 3:00pm Johns Hopkins University Applied Physics Laboratory – Kossiakoff Center Presentation: The challenges and complexity we face in our professional lives and our organizations can […]

Read the full article →

3rd Annual WISE and Wine Networking Event - 2 May 19, 2017 6:00pm – 8:00pm

May 19, 2017 6:00pm – 8:00pm Johns Hopkins University Applied Physics Laboratory The Chesapeake Chapter Women in Systems Engineering (WISE) will host the 3rd Annual WISE and Wine Networking Event. Ms. Courtney Wright, INCOSE Certification Program Manager, will be our guest speaker. Ms. Wright will address the benefits of INCOSE SEP Certification and will share […]

Read the full article →

SEP Certification Exam May 20, 2017 at JHU/APL

Open for Members and Non-Members Chesapeake Chapter and Washington Metropolitan Area Chapter Sponsor Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland Map and Directions The Chesapeake Chapter in collaboration with the Washington Metro Area Chapter are pleased to offer a Systems Engineering Professional (SEP) Certification Exam at Johns Hopkins […]

Read the full article →

Certification Training International Offers SEP Course Sept 25th-29th

We are pleased to announced Certification Training International (CTI) will be offering an Associate Systems Engineering Professional (ASEP) and Certified Systems Engineering Professional (CSEP) training course. The 5-day course will be held at Johns Hopkins University Applied Physics Lab, Kossiakoff Center, September 25th through 29th (Monday through Friday), 7:30am to 3:30pm. Chesapeake Chapter members receive […]

Read the full article →

Get Connected

LinkedIn Groups
INCOSE's Certification Program Office oversees three groups on LinkedIn:
INCOSE SEPs, the Official Interest Group is open to all
INCOSE SEP, the Official Group for Systems Engineering Professionals is limited to those individuals who are already ASEPs, CSEPs, or ESEPs.
INCOSE ESEP, the Official Group is limited to those individuals who are already ESEPs.

Official Twitter Account for INCOSE WMA: https:twitter.com/incosewma

Official Facebook: https://www.facebook.com/incosewma/

Contact Us
General Inquiries - info@incosewma.org

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George Washington University - Student Chapter
Alyson Fintzy - ittlefintz@gwmail.gwu.edu

As an INCOSE founding chapter and home to many of the Federal Departments and Independent Agencies acquiring systems for the US Government as well as many leading high-technology, commercial firms that consider systems engineering a competitive advantage, the Washington Metropolitan Area (WMA) Chapter has been a leader in the systems engineering community.

We are the largest INCOSE chapter with over 800 members. We are very active and strive to serve our membership by providing a variety of services and training opportunities. We have monthly meetings in the North ern Virginia area where we enjoy presentations on a variety of issues of interest to our membership.