INCOSE Chesapeake Chapter
P.O. Box 535
Laurel, MD 20725-0535

E-Newsletter

March 2018

President's Point of View

Grace Crowder, PhD, ASEP, President

In March, the Officers and Directors of the Chesapeake Chapter of the International Council on Systems Engineering, known as CC, are reviewing the Operating Plan for CC in preparation for submitting it to INCOSE by April 15. Inputs to this process include at least: the INCOSE Principles and Values, the INCOSE Strategic Objectives, the CC's Constitution and Bylaws, the CC's Strategic Plan, the CC's Operating Plans from previous years, and the CC's member survey from previous years.

All resources are readily available at *www.incose.org* or at *www.incose-cc.org*, depending on the source of the document or data. In addition, the Chapter Leadership Team is interested in hearing your thoughts and inputs on the Operating Plan (or any other topic). You are invited to offer input to any member of the Board for inclusion in discussions.

The INCOSE Chesapeake Chapter has been a platinum, gold, silver, or bronze circle award winning chapter for many years. This means CC has a record of sustained excellence in meeting the goals as set forward and evaluated through the Chapter Circle Award Program. Circle awards are based on the points accumulated by a Chapter based on evidence submitted to INCOSE in each of ten areas of achievement.

In 2017, the achievement levels were as follows: Platinum for 12,000 or more points, Gold for 8,000 – 11,999 points, Silver for 5,000 – 7,999, and Bronze for 3,000 – 4,999. For each area of achievement, there is a point cap. In addition, for Gold or Platinum circle award status there is a minimum number of points that must be earned in each category.

The areas are:
   A. Officer training (500 points is the cap, with a minimum of 300 required in this category for Gold or Platinum)
   B. Chapter Planning (1,000 points is the cap, with a minimum of 600 required for Gold or Platinum)
   C. Event Results (3,000 cap, 1,000 min)
   D. Communications Results (2,000 cap, 1,000 min)
   E. Membership Results (2,000 cap, 500 min)

In Vol. 9 Issue 3

This is the monthly newsletter for INCOSE Chesapeake, a local Chapter of INCOSE International. We are a not-for-profit organization dedicated to providing a forum for professionals practicing the art and science of Systems Engineering in the Northern & Central Maryland & Southern Pennsylvania area.

F. Technical Results (1,500 cap, 500 min)
G. Outreach and Collaboration Results (2,000 cap, 500 min)
H. INCOSE Support Results (1,500, cap, 500 min)
I. Operations and Local Recognition Results (1,500 cap, 500 min)
J. Subjective (1,000 cap, no min)

Total possible points: 16,000

Officer training reviews the current resources available to officers, and helps build alignment among the leadership team. All officers are expected to take the training provided on the Keys to Effective Chapter wiki at least once a year, *keys-to-effective-ch.wikispaces.com*. The process of **Chapter Planning** is essential and, to be most effective, must be a joint effort of the Chapter Leadership Team. The plan should be straightforward and periodically updated. The template provided on the Keys to Effective Chapters wiki, or equivalent, is recommended.

A step-by-step planning workbook is available on the Wiki. Evidence submitted for the Chapter Planning area includes the Chapter's Membership Survey results (during the first half of the year), the Strategic Plan, and the Operational Plan with the budget for the year. Planning documents are prepared and delivered in the first quarter of the year (by April 15).

The remainder of the year, and the remainder of the evidence for Chapter Awards areas, is based on executing to our Chapter Operating Plan. This is why good planning, a systems engineering core competency, is critical to our success.

Mark your calendar for the monthly dinner meeting and lecture – every third Wednesday from 6-8PM at APL. Mike Pafford, Past-president, delivered a lecture on Lean Startup Method (LSM) and Agile Scrum for Collaborative Initial Project Planning on February 21.
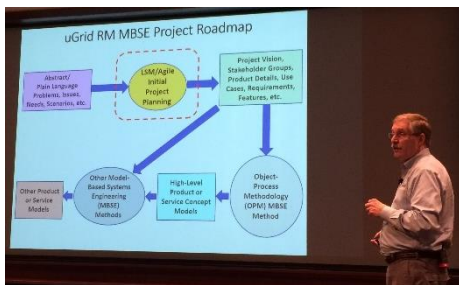
On March 21, Michael Mangieri, from Business Transformation Institute, INC. will speak on *The Engineering of High Power Amateur Rockets*. For April, we have semi-retired environmental scientist, Bob Watson, speaking on *Human-Induced Climate Change*. We hope to see you at all of these upcoming membership dinner meetings and talks!

In addition, on the second Wednesday of every month, from 6-8, the Board of Directors meets to review progress and move forward with activities identified in the Operating Plan. Any interested INCOSE member is welcome to attend the BOD meeting held in the conference room immediately on your right when entering Building 1 on the Applied Physics Laboratory of the Johns Hopkins University. If you have a topic for the agenda, please email the President and the Secretary for consideration.

The Chesapeake Chapter is always looking for volunteers to speak at our upcoming meetings! Please contact our Programs Director at programs@incose-cc.org if you would like the opportunity to speak or can recommend someone.

INCOSE SEP

Announcements and Events

Networking, Dinner, and Lectures
Chapter Meetings are held at the Johns Hopkins University Applied Physics Lab, Building 1, on the third Wednesday of each month unless otherwise noted. The meeting starts at 6pm (Early Registration Dinner $20 for Members, $25 Non-Members, $5 extra at the door, no charge for students) and the no-fee Lecture starts at 7pm.

Board of Directors Meetings
Monthly Board of Directors (BOD) Meetings are held at the Johns Hopkins University Applied Physics Lab in Building 1, Barton Conference Room on the second Wednesday of every month beginning at 6pm and ending at 8pm.

Upcoming Events
Please register for the below events at *www.incose-cc.org/registration* unless otherwise noted.

- **21 March, Monthly Dinner Meeting, "*The Engineering of High Power Amateur Rockets*"**, Senior Principal Process Engineer at Business Transformation Institute, Inc. This presentation will discuss topics specifically focused on the engineering, design, and production of High Power amateur rockets.

- **24 March, Baltimore Science Fair 2018,** Towson University. Volunteers are needed, please contact *chilliard001@yahoo.com* for more details.

- **26 March, reStart Job Fair,** Sheraton Columbia Town Center - 10207 Wincopin Circle, Columbia, MD 21044, visit *www.restartevents.com* for more information.

- **27 March, Lean Startup Method (LSM) for Collaborative Initial Project Planning,** Mike Pafford (Past President), Goddard Space Flight Center (GSFC) Systems Engineering Seminar Series, Greenbelt, MD

- **18 April, Monthly Dinner Meeting**

- **19-20 April, 2018 INCOSE Systems Engineering in Healthcare Conference,** Minneapolis/St Paul, MN

- **03 May, SE in Aerospace and Oil & Gas Conference,** INCOSE Texas Gulf Coast Chapter, Houston, TX

- **08-09 May, Annual Conference on Systems Engineering (CSER 2018),** UVa, Charlottesville, VA

- **16 May, Monthly Dinner Meeting**

- **20 June, Monthly Dinner Meeting**

- **07-12 July, INCOSE IS 2018,** Washington, DC

Special Interest

INCOSE Central Webinar: "INCOSE – State of the Nation"
By Mike Pafford

On February 21st, the INCOSE President, Garry Roedler, and President-Elect, Kerry Lunney, both gave insights on the current state of INCOSE, as well as INCOSE plans, during an online webinar.

The webinar was the second annual report by the President and President-Elect to INCOSE members on progress toward INCOSE Strategic Objectives, as well as the path forward identified by the INCOSE SE Vision 2025 document.

The report was based on reports and discussions from the INCOSE International Workshop 2018, held recently in Jacksonville, Florida. Garry Roedler is a Lockheed Martin Senior Engineering Fellow, and Kerry Lunney is a Thales Engineering Director and Chief Engineer.

Kerry Lunney spoke first on INCOSE Notable Achievements – 2017 to IW2018. She divided the list of achievements according to an Operational Focus and Strategic Focus.

Operational Focus (OF) -
• Chapter Governance & Financial Model (CGFM)
• Sanctions
• Policy Updates – TechOps & CGFM
• IT Evolution
• INCOSE Store
• On-Going Operational Streamlining
• Certification Paper Exam Offerings
• Technical Leadership Institute (TLI) Graduation
• IS Events
• We Are INCOSE!

Strategic Focus (SF) –
• Establishment of Value Streams
• Membership Growth
• Strong Working Groups
• Early Alliance Activities Kick-Off
• Professional Development Kick-Off
• Certification Competency Framework Trial
• Impactful Products Program
• Value Proposition Project

Garry Roedler spoke on, "Looking Forward: Priorities for 2018 and Beyond".

He told webinar attendees that although INCOSE has made great progress in its influence and leadership in systems engineering, it is still evolving organizationally.

He said further work is needed to unify and integrate. He stressed INCOSE In-Reach and Integration; a Global INCOSE. He also emphasized INCOSE Outreach; greater collaboration with industry on targeted objectives.
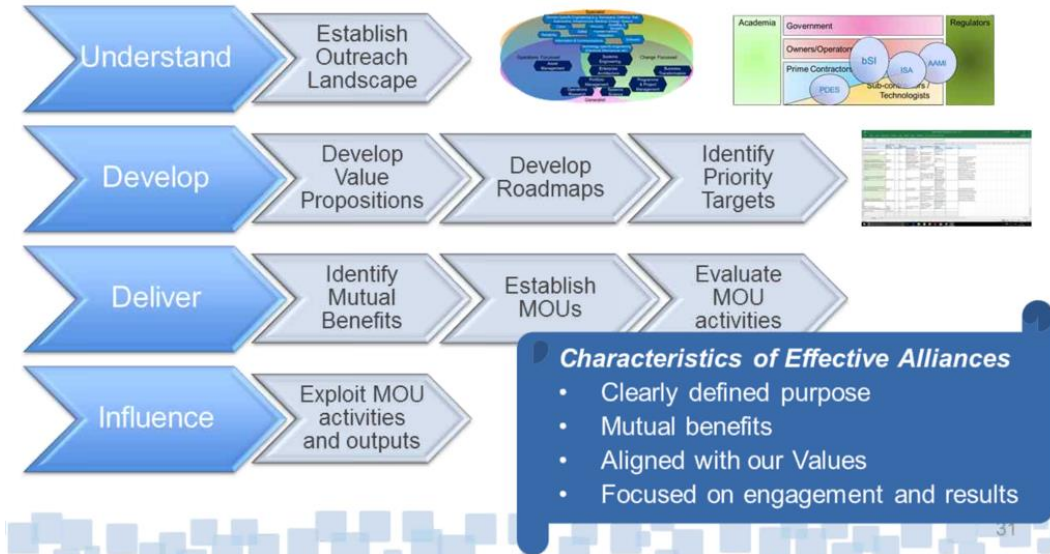
Garry went on to give a 2018 update on the continuing INCOSE focus on Professional Development and Competency (PD&C).

Garry also detailed other important INCOSE initiatives including Systems Engineering of the Future; Infrastructure Improvement (e.g., integrating teams and organizations across boundaries, adding efficiency and effectiveness to INCOSE business and technical operations, etc.); INCOSE Information Technology Vision; and Membership Retention.

He wrapped up his remarks by encouraging everyone to continue to do their part as INCOSE moves forward.

Moving Forward

- Needs to leverage INCOSE strengths
  - Our ability to look at our organization from a holistic system view
  - Our energetic, talented, and passionate membership
  - Our ability to embrace diversity
    - Domains
    - Cultures
    - Perspectives
    - Nationalities
  - Our ability to work collaboratively with others
  - Our understanding of applying a systems approach
- Need to work as a united set of stakeholders
  - Build on strengths and continue to evolve

Focus on our membership, our discipline, and our leadership role

Members of INCOSE can find the full set of slides used for this webinar in the INCOSE CONNECT Webinars Library (Webinar ID: Webinar 109 Roedler_Lunney 21February 2018 INCOSE State of the Nation).

Object Management Group and International Council on Systems Engineering (INCOSE) Partner to Advance Standards for CubeSats

INCOSE CubeSat Reference Model to be Submitted for OMG Standardization

NEEDHAM, Mass. and SAN DIEGO (PRWEB) March 12, 2018

The Object Management Group® (OMG®), an international, open membership, not-for-profit technology standards consortium, signed a memorandum of understanding (MOU) with the International Council on Systems Engineering (INCOSE), the largest organization in the world dedicated to systems engineering.

The MOU between OMG and INCOSE formalizes the working relationship between the two parties as they develop and distribute the INCOSE CubeSat Reference Model (CRM) to advance standards for CubeSats.

A 1U CubeSat is 10x10x10 centimeters with a mass of about 1.3 kilograms. CubeSat units can be joined to form a larger satellite such as 2U, 3U and 6U. Their small payload makes standalone launch cost-prohibitive but allows CubeSats to join launches from other organizations at a significantly reduced cost. The Nanosatellite and CubeSat Database reports that CubeSat launches tripled from 2016 to 2017 to nearly 300 launches.

The number of CubeSats and the number of organizations developing CubeSats have increased dramatically. However, there is no common reference model to design a CubeSat, thereby limiting interoperability, slowing development times and forcing constant research to remain current on the latest innovations.
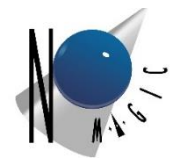
The CRM provides the logical architecture of a CubeSat space and ground system. The CRM logical components are intended to be used as a starting point for a mission-specific CubeSat logical architecture, followed by the physical architecture and the CubeSat development. The CRM is also sufficiently flexible to accommodate different logical architectures.

William Hoffman, president and COO of OMG and Garry Roedler, president of INCOSE, signed the MOU. Under the terms, the INCOSE CRM will go through the OMG standardization process. In addition, OMG will issue a request for proposals regarding the CubeSat Reference Model.

OMG CRM status, progress and deadlines can be found at *www.omgwiki.org/space/doku.php*. "Both OMG and INCOSE share a mutual commitment to support and accelerate knowledge growth in the systems engineering arena," said Hoffman. "Developed by INCOSE using the OMG Systems Modeling Language™ (SysML®), the CRM is already in a model form, providing a fill-in-the-package framework and identifies subsystems to consider and other agencies to coordinate prior to launch. Space-mission procuring organizations will use the CRM to capture mission requirements in a standard format that is readily accessible and understandable by vendors and developers."

"Today's announcement reinforces our joint cooperation with OMG to deliver a CubeSat Reference Model that applies a model-based systems engineering (MBSE) method and will be reusable and extensible to a variety of specific space missions and payloads," said Roedler.

Learn more about CRM through INCOSE's Space Systems Working Group or join OMG to influence the CRM and other related technology standards like SysML.

About the International Council on Systems Engineering. The International Council on Systems Engineering (INCOSE) is a not-for-profit membership organization that promotes international collaboration in systems engineering practice, education and research. INCOSE's mission is to "address complex societal and technical challenges by enabling, promoting and advancing systems engineering and systems approaches." Founded in 1990, INCOSE has more than 70 chapters and over 16,500 members worldwide. For additional information about INCOSE, call 1-858-541-1752 or visit *www.incose.org*. Become a member today.

About OMG. The Object Management Group (OMG) is an international, open membership, not-for profit computer industry standards consortium with representation from government, industry and academia. OMG Task Forces develop enterprise integration standards for a wide range of technologies and an even wider range of industries. OMG modeling standards enable powerful visual design, execution and maintenance of software and other processes. Visit *www.omg.org* for more information.

Note to editors: Object Management Group and OMG are registered trademarks of the Object Management Group. For a listing of all OMG trademarks, visit *www.omg.org/legal/tm_list.htm*. All other trademarks are the property of their respective owners.

End of March Job Fair

reStart, *www.restartevents.com*, is hosting another local job fair event on the 28th of March, 2018.

March 26th, 2018
Sheraton Columbia Town Center - 10207 Wincopin Circle, Columbia, MD 21044
Panel Discussion: 10am - 11am
Hiring Event: 11am - 3pm
Networking Happy Hour: 3pm - 4pm

NOTE: Professional resume development and recruiting services available at this event as well.
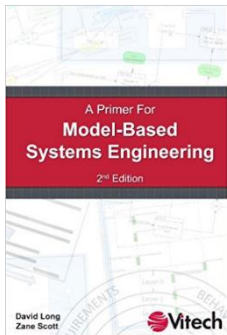
Stop by the Chesapeake Chapter's booth when you visit. You can earn PDUs if you decide to staff the booth.

Book Report
By Mike Pafford, Past President

A Primer For Model-Based Systems Engineering; 2nd Edition
By David Long and Zane Scott; 2011; Paperback; 107 pages

This very useful and easy to use desk reference was written by INCOSE members (and Vitech Corp senior principles) David Long (INCOSE Past President) and Zane Scott (current INCOSE Corporate Advisory Board Chair).

The purpose of the short book is to explain the basic concepts behind model-based systems engineering (MBSE). Subjects covered include an introduction/review of Systems, Systems Engineering, Models, and MBSE.

In this Second Edition, the authors changed from a topical organization of subject material to a "building blocks" perspective, developed through answering questions about the primary subject areas. In the book's Summary, the authors recognize that there is no one definition for MBSE.

In the Afterword of the book however, they remind systems engineering beginning and experienced practitioners, that since models use a clear and common language to

describe problems-and solutions-the architecting and design processes can accommodate expert inputs from a diverse set of contributors.

This book can be purchased from the following vendors:
Vitech Corporation: https://tinyurl.com/ybhgxbwx
Amazon: https://tinyurl.com/y7q4ll8x

Membership Arena
By Mark Kaczmarek, ASEP, Membership Director

INCOSE membership is over 13,000 world-wide. Over 100 corporate members, 70+ Global chapters in over 30 countries. The Chesapeake Chapter of INCOSE serves the systems engineering community in Baltimore and its surrounding areas. Our Chapter is very active and prides itself in the many endeavors it has undertaken. An organization such as ours relies on the willingness of its membership to put as much effort into it as they receive in return.

Chesapeake Chapter's membership Includes:
- Current membership = 322
- Certification = 167 ~52%
  - ASEPs = 48
  - CSEPs = 88
  - ESEPs = 31

Learn more about the *benefits of joining INCOSE* and consider being part of this thriving organization and fill out an *INCOSE Membership Application* today!

The Chesapeake Chapter proudly welcomes our new members:

February 2018
- *Anderson, Tara*, JHU/APL
- *Patel, Shiv*, University of Maryland

January 2018
- *Bendig, Shawn*
- *LeBoeuf, Richard*
- *McGowan, Ray*, Johns Hopkins University
- *Mohtashamian, Aydin*, L3 Technologies
- *Rivera, Rodel*, SPAWAR
- *Zavala, Yashira*

November 2017
- *Good, Michael*, Vencore
- *Greco, Christopher*, Edwards Performance Solutions
- *MacLean, John*, Legato LLC

October 2017
- *Barclay, Melanie*, WGS Systems
- *Beach, Ryan*, WGS Systems
- *Dillon, Martin*, WGS Systems
- *Dodson, Carl*, WGS Systems
- *Forster, Daniel*, NAVAIR
- *Kane, Ronald*
- *Oliver, Everett*, JHU/APL
- *Thomas, Jeremy*, WGS Systems
- *Underwood, Kelli*, Space Telescope Science Institute

September 2017
- *Ellis, John*, Leidos
- *Ha, Bao*, Northrop Grumman
- *Gentry, Bradley*, Odyssey Consulting, Inc.

August 2017
- *Abernathy, Mark*, Space Telescope Science Institute
- *Dorsman, Theo*, Northrop Grumman
- *Luke, Robert*, WGS Systems
- *Parsons, Christopher*, Northrop Grumman
- *Phan, Nam*, Booz Allen Hamilton
- *Rowe, Roger*, Northrop Grumman

July 2017
- *Alston, Felix, Dynane*
- *Hiteshew, Brian, Northrop Grumman*

June 2017
- *Adams, Mark*, SAIC
- *James, Corrie*, JHU/APL
- *Martin, Robin*
- *Stephenson, Tenee*, ASEP, JHU/APL

May 2017
- *Hanni, Robert*, University of Maryland
- *Kight, Steven*
- *Land, Peter*, DOD, Systems Security Concepts

April 2017
- *Abbott, Steve*, DOD
- *Dougan, Thomas*, Northrop Grumman
- *Evans, Paul*, Student
- *Glennan, Andrew*, Northrop Grumman
- *Marshall, James*, Northrop Grumman
- *Paulov, Michael,* AASKI Technology, Inc
- *Pierce, Cliff*, Johns Hopkins University

- *Shields, Rebecca*, Student at University of Maryland, Baltimore County

Congratulations to Newly Certified SEPs since August 2017:

- *Barclay, Melanie, ASEP* – WGS Systems LLC
- *Beach, Ryan, ASEP* - WGS Systems LLC
- *Biemer, Steven, CSEP* – JHU/APL
- *Cheresnowsky, Harry, CSEP* – Cyber Pack Ventures
- *Davilia-Andino, Arturo, ASEP* – University of Maryland
- *Dillon, Martin, ASEP* - WGS Systems LLC
- *Dodson, Carl, ASEP* - WGS Systems LLC
- *Dorsman, Theo, ASEP* - Northrop Grumman
- *Fox, Joel, ASEP* – DE ISO
- *Glennan, Andrew, ASEP* - Northrop Grumman
- *Ha, Bao, ASEP* - Northrop Grumman
- *Handy, Kristen, CSEP* - Booz Allen Hamilton
- *Hanni, Robert, ASEP* - University of Maryland
- *Luke, Robert, ASEP* - WGS Systems LLC
- *Marshall, James, ASEP* - Northrop Grumman
- *Miller, Kim, ASEP* - Northrop Grumman
- *Parsons, Christopher, ASEP* - Northrop Grumman
- *Partenheimer, Janice, ESEP* – Engility
- *Randall, Rick, CSEP* – The Mitre Corp
- *Scott, Zane, ASEP* – Vitech Corporation
- *Thomas, Jeremy, ASEP* - WGS Systems LLC
- *Williams, Michael, ASEP* - University of Maryland
- *Stephenson, Tenee*, *ASEP* - JHU/APL
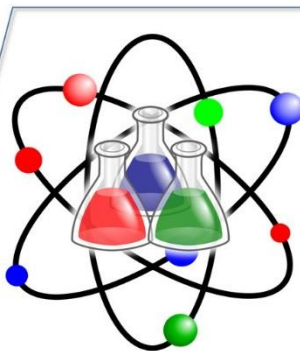
Science Fair Judges Needed

March 24

Baltimore Science Fair 2018
Towson University

Contact chilliard001@yahoo.com for more details.