# INCOSE Chesapeake Chapter
## International Council on Systems Engineering

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

# E-Newsletter

**April 2017**

## President's Point of View

**Mike Pafford**
**President**

This month I'd like to pass along some information about a successful 'Systems Engineering Experiment' I conducted in March. My Hypothesis was, "I can sneak systems engineering processes into a Middle School/High School (MS/HS) Science, Technology, Engineering, and Math (STEM) event—without the participants even realizing they're doing real systems engineering".

The Chapter supported no less than three STEM-related events in Maryland and Virginia in March. The events on the 4th and 25th were Maryland Science & Engineering Fairs the Chapter had successfully supported over the past several years, and were well-planned far in advance. As in the past, the Chapter was invited to have teams of volunteer judges assess many STEM-related presentations and projects at each event. Both events were well-attended, and the Chapter judging teams once again gave out awards to several deserving MS/HS students.

The third event was actually a MS/HS STEM—with 'the Arts' integrated—or, STEAM Conference being held at a Middle School in Virginia. A member of the Chapter Women in Systems Engineering (WISE) Special Interest Group (SIG) had received an email invitation to the Conference. The invitation was made available to the full Chapter—and I saw an opportunity to test my hypothesis. I had been looking for a way to add additional systems engineering value to STEM events, along with the volunteer judging teams that Systems Engineers are known for. I wanted to see if there might be a way to interactively introduce actual systems engineering processes to STEM event participants. I thought I could leverage something I learned at the INCOSE International Workshop 2017 (IW17) to do this.

While at the IW17, I attended four daily sessions of a "Systems Thinking Roundtable" facilitated by Dr. Susan Gabriele as part of her Systems Thinking research and work with Dr. James Martin and the INCOSE Systems Science Working Group.

Each morning Dr. Gabriele and her colleagues led 20-30 participants (it varied each day) in a Systems Thinking "Structured Brainstorming" session using a scripted Roundtable Guide handout. Each of the sessions, by design, lasted exactly 60 minutes, during which time every person was allotted 1-2 minutes (on a timer) to give remarks about the day's chosen subject. The sessions resembled the Structured Brainstorming and Feedback sessions that we Systems Engineers routinely use in the earliest Needs, Problems, and

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.

## INCOSE

Requirements Elicitation phases of Systems Analysis and Requirements Engineering. No Science, Technology, or Math involved, however, some genuine Systems Engineering analysis.

When I received the notice about the Virginia STEAM event, and after I gave the Roundtable idea some more thought, I contacted the STEAM conference coordinator and gave her my thoughts. She seemed very excited about the idea, and immediately sent me the Sponsor and Presenter information. I talked to the Chapter Board of Directors, and they all immediately agreed to the Chapter being a Corporate Sponsor for the event. I next reached out for additional Chapter volunteers to be event Presenters. A WISE member, Michelle Douglass-Butler, stepped forward right away.



*Dr. Susan Gabriele (left at the head of the table)*
*Leads an IW17 Systems Thinking Roundtable session*

The two of us then got back in contact with Dr. Gabriele. She was also excited about introducing the idea to the STEAM event, as the bulk of her research and work has been in the education arena. Through a series of INCOSE WebEx collaborative online meetings, Michelle and I worked with Dr. Gabriele, who led us in tailoring her IW17 Roundtable Guide into two separate Guides for the expected sets of STEAM conference participants; Adults involved in STEAM (i.e., Teachers and Parents) and Students involved in STEAM-related studies or projects. The results of our coordination were a two-sided Adults Guide handout that I used to lead two Adult 45-minute Systems Thinking Structured Brainstorming sessions, using the methods I learned from Dr. Gabriele at IW17, and a Student Guide handout that Michelle used to lead three 30-minute Student sessions, using the methods Dr. Gabriele employs in her educational settings. Each Guide handout had on one side a Script for leading a single session, always with different participants, and on the other side a Script for using the Guide handout with the same participants who meet on a regular recurring basis.

At the beginning of each session Michelle and I let everyone know that we were from an international systems engineering organization, and that we were going to introduce them to an actual process used routinely by practicing Systems Engineers during the initial analysis phase of many engineering projects. We both stuck to our scripts, using our smartphone timer apps to make sure every person got the same allotted time to give their insights on the subject areas we chose. My Adult sessions question was, "How do you think the idea of STEAM is going, now that it's been around in use for a while"? The kind of question we practicing Systems Engineers might ask at a Stakeholders Feedback Session during the early stages of a product or service improvement project.

Each session was well-attended, with lots of good thoughtful insights. The two main areas of feedback I received were, "Before, I didn't know what Systems Engineers did. Now I know a lot more", and, "Thanks for this useful Adult Guide Handout. Now, how can I get a copy of the Student Guide, too?" Feedback from the conference coordinator was also very positive.

Now that this Systems Engineering 'experiment' has been successful, the plan is to offer these Adult and Student Systems Thinking Roundtable sessions at other STEM/STEAM-related events, to interactively introduce Students, Parents, and Teachers to systems engineering processes.

## Programs Update

Last month the dinner presentation was by Mr. Jim Armstrong, ESEP, Industry Professor at Stevens Institute, on the results of his research of systems engineers on how they obtained their technical experiences, "Developing Systems Engineering Expertise: Actions You Can Take". I was among others in our chapter interviewed by Jim to support his research. The presentation is available via youtu.be/lt0E9OaqNwI or Search for "INCOSE Chesapeake".

**Gundars Osvalds**
**ESEP**
**Programs Director**

Once an engineer achieves technical skills they must also have other skills to support their interaction with the world around them. This month there will be a presentation on, "Introduction to "Soft Skills" Leadership & Professional Derailment: Lessons for staying on the track", and a workshop, "Leadership & Professional Derailment: Improve "Soft Skills" to Support Your Career Goals".

Soft Skills include: Communications, Creativity, Adaptability, Collab-oration, and Leadership; some of the high-level categories that one can acquire while working on programs, projects, tasks, and while obtaining training to enhance one's value to the organization that one supports. Over the last 20 years Ms. Teresa Armstrong has presented this subject at various national conferences including the Women of Color (WOC), Black Engineer of the Year Awards (BEYA), and National Society of Black Engineers (NSBE). Her current and past consulting/coaching clients include AHC Inc., Maryland Paving, Northrop Grumman Corporation, Marriott International, and the USO. The Soft Skills concepts, acquisition, and execution will be covered following the Chapter dinner and Networking meeting on April 19, and in more detail at the workshop on Saturday April 22. Sign up for these events at incose-cc.org.

*Teresa Armstrong*

SEPTEMBER – We have two training courses planned for this fall. One is a week long trainig on the appliction of SysML modeling language to the updated DoDAF 2 architecture models with the use of UPDM 2. This course will be given by a senior trainer from No Magic on their Magic Draw modeling tool. Over 40 models will be described and you will have time to try them yourself under professional guidance. I understand that some have aleady or soon will be trying out the tool without the advantage of trainng other than some help for your coworkwers. I found that it is best to try the tool on your own for a few months before one attends formal training. The reason is: you gain a overall understanding of the basic functions, not having to take valuble trainig time, once you take formal training you can take full advantage of it and you will be better prepared to ask questions.

We also have a week long repeat of the "CSEP Certification Training Course" to support those aspiring to became certified and are ready to prepare for the ASEP and CSEP Certification Exam. More details are provided in the *Upcoming Events* and on our website incose-cc.org.

The Chesapeake Chapter of INCOSE is proud to recognize the following organizations for sponsoring our endeavors to expanding the understanding and appreciation of Systems Engineering in the local area.

## Announcements and Events

### Networking, Dinner, and Lectures
Chapter Meetings are held at the Johns Hopkins University Applied Physics Lab on the third Wednesday of each month unless otherwise noted. The Meeting starts at 6pm (Dinner $20 for Members, $25 Non-Members, $5 extra at the door), and the Free Lecture starts at 7pm. Please complete your Registration at *incose-cc.org/registration.*

### Board of Directors Meetings
Monthly Board of Directors (BOD) Meetings are held at JHU/APL in Building 1, Barton Conference Room the second Wednesday of every month beginning at 6pm and ending at 8pm.

### Communications Committee Meetings
Communications Meetings are held the first Wednesday of every month beginning at 6:30pm and ending at 7:30pm. Please contact the Communications Director for more details: communications@incose-cc.org.

### Upcoming Events

- **19 April, Wednesday 6-8 pm, Introduction to "Soft Skills" Leadership & Professional Derailment: Lessons for staying on the track -** The challenges and complexity we face in our professional lives and our organizations can be compounded by the lack of self-awareness and the reality that "soft skills" matter. A "derailer" is a weakness that requires improvement if we are to realize our potential. The presenter will explore four categories of "derailers" that leaders and professionals risk in their career journey. Walk away with an action plan of how you will integrate "soft skills" into your professional career tool kit. This action plan can be further filled out by attending the follow-on Workshop. The Meeting starts at 6pm (Dinner $20 for INCOSE Members, $25 Non-Members, $5 extra at the door), and the Free Lecture starts at 7pm. Please complete your Registration at *incose-cc.org/registration.*

- **22 April, Saturday 8 am-3 pm, Workshop - Leadership & Professional Derailment: Improve "Soft Skills" to Support Your Career Goals,** The challenges and complexity we face in our professional lives and our organizations can be compounded by the lack of self-awareness and the reality that "soft skills" matter. During this session participants will focus on strategies to avoid trips and traps related to "derailers" that leaders and professionals risk in their career journey. This workshop will provide an understanding and awareness of soft skills and how they are woven throughout your career. Gain practical insights, strategies, tools, and techniques for learning or improving a particular soft skills area you need. Continental Breakfast and Lunch is included, $100 for INCOSE Members, $125 for Non-Members. Please complete your Registration at *incose-cc.org/registration.*

- **24 – 27 April, 11th Annual IEEE International Systems Conference,** Montréal, Québec, INCOSE Track. Details at: *incose.org/newsevents/currentevents*

- **30 April, Deadline to Apply for INCOSE Chesapeake Chapter Science Technology Engineering and Math (STEM) Scholarships.** Details coming soon to the Chapter Website, incose-cc.org.

- **5 May, INCOSE Texas Gulf Coast Chapter Systems Engineering Conference,** Houston, TX. Details at: *incose.org/ChaptersGroups/_Chapters/ChapterSites/texas-gulf-coast/chapter-events/conferences/tgcc-2017-conference*

- **13 May, TUTORIAL, Design Thinking - Learn the Tools and Methods of Design Thinking That Will Turn Your Organization, Into an Innovation Powerhouse,** JHU/APL Kossiakoff Center, 8am-3pm, Creating a culture of innovation sounds great, but how do you start? Focusing on our experience in making substantive change in the DoD and government environments, we've leveraged the design thinking methodology to inject innovation into our organization. Join us for a workshop stepping through the core components of a design thinking approach. You'll learn about ethnographic interviewing, analogous research, brainstorming methods and low fidelity prototyping to rapidly bring a concept into the physical world. More importantly you will practice these activities – this is a hands-on session with the intent of providing participants with takeaway knowledge and tools.  Fee for all day including Continental Breakfast and Lunch is for INCOSE Members $100, $125 for non-INCOSE members. More details and registration: *incose-cc.org/registration.*

- **16 – 18 May, INCOSE Healthcare Working Group Conference: "Agile Methods for the Development of Healthcare Systems 2017"**, Chicago, IL. Visit the Conference Website for more details:   *incose.org/ChaptersGroups/WorkingGroups/Application/healthcare/ agile-healthcare-conference-2017*

- **17 May, Monthly Dinner Meeting, "A Systems View of Whole-Enterprise Enterprise Architecture", Marc Gewertz,** There is much confusion across business, government and non-profit organizations as to exactly what the differences are between the business practices of Enterprise Architecture, Business Architecture, and IT Architecture, as there is much overlap of interests and many differences in terminology between architects, managers and executives, especially when their activities are coupled with external organizations, customers and stakeholders with different interests and needs, a common working environment in today's marketplace. Through the lens of a systems perspective of an enterprise in a start-up environment, the basic and fundamental capabilities are systematically differentiated and defined, including the roles and responsibilities for architecting and managing each capability.

- **19 May, INCOSE Chesapeake Chapter Women in Systems Engineering (WISE), 3rd Annual WISE and Wine Networking Event, Free to all attendees,** JHU/APL Kossiakoff Center, 6pm-8pm.   More details and registration: *incose-cc.org/registration.*

- **20 May, INCOSE Systems Engineering Professional (SEP) Certification Exam:** Hosted by Chesapeake and Washington Metropolitan Area (WMA) Chapters at the Kossiakoff Center, JHU/APL, Kossiakoff Center, Laurel, MD, Saturday, 9:30am - 11:30am. Please arrive by 9:00am.  Volunteers are needed. More details and instructions on how to register for this exam are available at: *incose-cc.org/registration*

- **5-9 June, 7:30 AM to 3:30 PM, No Magic Training, "Applying UPDM 2 with Magic Draw", at JHU/APL, Kossiakoff Center, Laurel MD. Click on for:  Course Description,. Register at:** *incose-cc.org/registration*

- **21 June, Monthly Dinner Meeting, Zen and the Art of Systems Thinking, Paul B Martin, ESEP, CTT+,** We will look at the context of the Systems Thinking paradigm by exploring its history and philosophy. Explaining how this new mode of thought allows engineers to understand the workings of the world better. Starting with early
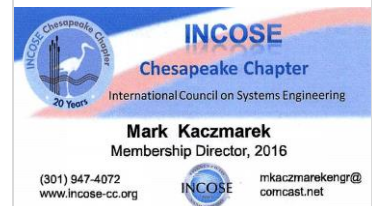
ancient ideas and literature on systems, moving onto modern systems scientists (Bertalanffy, Wiener, Churchman, Forrester, etc.), and ending with INCOSE's SE Handbook and the SEBoK explanations of the Concepts, Principles and Patterns of Systems Thinking.

The road this talk will take is long and winding but it will illustrate the rich heritage that Systems Thinking brings to the table. And the fact that this is a new way to view the world with new eyes. To be able to see the world beyond its abstract categories and definitions and to start to appreciate the wonder of a system's "wholeness."

- **17 – 20 July, INCOSE International Symposium (IS 2017):** Each year, INCOSE hosts the International Symposium as its flagship event for Systems Engineers world-wide. Keynote Speakers on topics reflecting not just Systems Engineering relevancy, but also issues with global currency are presented during this annual gathering. Panels, papers and presentations fill four days of opportunities. INCOSE's most prestigious awards are bestowed during IS. Industry, government, and academic exhibitors fill the Exhibit Hall to share information about new developments. Students display award-winning engineering projects. Mentors and mentees are introduced to each other. Social activities – formal and informal – bring people together in a highly energized and productive atmosphere. Visit the IS 2017 Website for more details: *incose.org/symp2017/home/when-where*

- **19 July, Monthly Dinner Meeting, "Future Directions For SysML V2", Mr. Sanford (Sandy) Friedenthal.** SysML v1 was adopted in 2006, and has been a key enabler of model-based systems engineering (MBSE). Since that time, much as been learned about applying MBSE with SysML. This presentation describes the directions and approach for the next generation of SysML (v2) to provide capabilities that address the limitations of SysML v1, and enable the evolving practice of MBSE.

- **18 August, INCOSE Chesapeake Chapter 8th Annual SEP Gala.**

- **20 September, Monthly Dinner Meeting, "*Digital Engineering: MBSE Approach for DoD*", Ms. Philomena Zimmerman,** Deputy Director, Engineering Tools and Environments, Research and Engineering, Office of the Secretary of Defense, United States Department of Defense , Through the ODASD (SE), the DoD is establishing model-based methods, processes and tools for use in acquisition and acquisition related activities. The use of models as a technical means of communication within the systems engineering discipline is understood; but the full potential of the models to support activities in other disciplines is not yet realized. Part of overcoming this realization lies in understanding the basic language and artifact representations as they are; and another part lies in projecting/executing a path forward to keep a loosely coupled community which can take advantage of other's successes and failures.

- **18-22 September, 8 AM to 5 PM, No Magic Training, "Applying UPDM 2 with Magic Draw", at JHU/APL, Building 200, E100, Laurel MD. Click on for: Course Description, Register at:** *incose-cc.org/registration*

- **25-29 September, (Monday through Friday), CSEP Certification Training Course,** JHU/APL MP3 Room E183, 8:00AM to 5PM. Register at www.certificationtraining-int.com/. Chesapeake Chapter Members receive a 10% discount.

- **18 October, Maryland Traffic Engineering, use of Agile by the Maryland State Highway Administration (SHA)**

- **6 December**, **INCOSE Chesapeake Chapter Holiday Party and Awards Ceremony**

## Systems Engineering Professional (SEP) Certification Exam

The Chesapeake and WMA Chapters are pleased to offer the Systems Engineering Professional Certification Exam at the Johns Hopkins University Applied Physics Laboratory, Kossiakoff Center in Laurel Maryland. INCOSE Certification Program Manager, Ms. Courtney Wright, will be present to administer this exam. This Exam is offered at no cost to registrants and will be held on Saturday, May 20th from 9:30am - 11:30am Please arrive by 9:00am. The test is open to INCOSE members and non-members. Visit *incose-cc.org* for more information and to pre-register for the exam. NOTE: After passing the exam, you must submit your complete CSEP application package along with the required fees, references and join INCOSE to complete your application for Certification. ESEP volunteers are needed to proctor this exam and chapter volunteers are needed to support set-up and sign-in. Please contact programs@incose-cc.org to volunteer today!



Fundraiser Raffle for
Chesapeake Chapter Scholarship Fund

PRIZE
INCOSE SEP Certification Course
Sept. 25-29, 2017
8AM-5PM at JHU/APL
Value: $2,898.00

Tickets: $5 each or $20/5 Tickets

Drawing at SEP Gala August 18

(Need not be present to win)

Donation By
CERTIFICATION
TRAINING INTERNATIONAL
A PPI Company

See Any Chapter Board Member for Details or Visit our Website

## Communications Corner

### In the Spotlight Craig Tyler, ESEP, Secretary



**Myra Parsons Gross, ESEP
Communications Director**

Craig Tyler is the current INCOSE Chesapeake Chapter's Secretary. He is a Systems Engineering Sr. Manager with Vencore. He has over 30 years of technical and management experience supporting federal agencies and is certified as an INCOSE ESEP, PMI PMP, and SAFe® Agilist. Craig earned a bachelor's degree in Aerospace Engineering from The Pennsylvania State University and master's degrees in Engineering Management from The George Washington University and Information Systems from Johns Hopkins University.

Craig took the "old school" approach in becoming a Systems Engineer by working in a number of different positions in each of the NASA operations and engineering teams before becoming a Lead Systems Engineer. Earning an Engineering Management degree

was a great next step, reinforcing systems engineering processes as well as providing the management and business process needed to be an effective program or technical lead.

Craig's engineering assignments have provided him with a well-rounded exposure to many engineering disciplines and business processes, allowing him to see the "big picture" of systems engineering, decision making, and customer support. He has a passion for learning and sharing best practices gained in supporting Intelligence Community, DoD, NASA, NOAA, and commercial programs.

*Craig Tyler, ESEP*

Craig Tyler's term as Chesapeake Chapter Secretary will end this year. Duties include recording meeting minutes, data management, and planning and preparing for our chapter events. If you are interested in learning more about the chapter and serving the local systems engineering community, consider running for one of the Chapter positions.

## Special Interests

### Supporting our Youth - STEM Outreach

Every year the Chapter supports local students and promotes the Science Technology Engineering and Math (STEM). The Anne Arundel County Public School (AACPS) Science Fair and the Baltimore Science Fair, both geared toward Middle and High School students are standing events the Chapter supports and offers momentary awards for students based on defined selection criteria. The Chapter supported both science Fairs in March along with the Science, Technology, Engineering, the Arts, and Math (STEAM) workshop for middle school students in Prince William County, Manassas, and Manassas Park, Virginia.

### Scholarship Application

**Chesapeake Chapter Presents
Science, Technology, Engineering and Math (STEM) Scholarships
Application Deadline - April 30, 2017**

$5,000.00 for Chapter Member or Immediate Family Member

$1,000.00 Open Scholarship

Students enrolled in STEM related courses at any college.

Download and complete the Application Package, and email the package (including unofficial transcripts and resume) to: president@incose-cc.org
*Awards announced in June*

See Any Chapter Board Member for Details or Visit our Website

## AACPS Science and Engineering Fair
*Contributed By: Don Gantzer*

For the fifth year, we had a team of volunteers judging this year's Anne Arundel County [Maryland] Public Schools (AACPS) Science and Engineering (S&E) Fair on March 4th at North County HS. Our volunteers were Christie Best, Clinton Hilliard, John Lewis, Asia Morgan, CSEP, Thomas Platt, and I. Thanks also to Chapter Board support – Mike Pafford, Craig Tyler, ESEP, Tony Gigioli, CSEP, and Ellie Gianni, ESEP.

There were over 325 projects from 8th through 12th grades. Our selection of projects to evaluate was narrowed down to ~15. Categories that we focused on were Computer Science, Engineering: Materials and Bioengineering, and Electrical and Mechanical, Energy & Transportation, Environmental Management, Mathematical Sciences, and Physics & Astronomy. We also focused on projects presented by Grades 9+. It has been our experience that even down selecting to a smaller number; it remains a challenge due to the limited time.

To perform our evaluation, we essentially used the criteria for Engineering as provided to the students by the school system and included:
- Research Problem – 10%,
- Design & Methodology – 15%
- Execution [Construction & Testing] – 20%
- Creativity – 20%,
- Poster – 10%
- Interview – 25%

As usual we were impressed with what many of the students accomplished. All Award Winners received an INCOSE Chesapeake Chapter *Certificate*, *Medal*, and the Top 3 received *Award Checks*.

The winners were awarded first, second and third place checks and included:
- 1st Place: Andrew Karam, "AnTech 2.0 Quadcopter, an Autonomous Object", $150
- 2nd Place: Ava Lusby, "Understanding Acoustic Landmine Detection", $125
- 3rd Place: Alayna D'Avino, "Wi-Fi Cannon – Building a Super Range Extender", $100.



*Don Gantzer (left) With 2017 AACPS S&E Fair Awardees*

- Honorable Mention, Christian Hardy, "Cleaning Oil Using Magnetic Nanoparticles"

- Honorable Mention, David Kravets, "Engineering a Novel Material"

At the Awards Ceremony on March 9th, our selected award winners also received awards from other organizations.

Other Systems Engineering related organizations judging were: American Defense Spectrum Organization, Harris Corporation, Anne Arundel Community College, Armed Forces Communications & Electronics Association, Defense Spectrum Organization, Rockwell Collins Information Management Services, Naval Science, AIAA – Mid-Atlantic, Intel, NASA, Society of Woman Engineers, and Yale Science & Engineering Associates.

**STEM/STEAM Event**
*Contributed By: Mike Pafford and Michelle Douglass-Butler, CSEP*

In its 27th year, the SUCCESS Conference is an annual event held each Spring where students in grades 5-12 who live in and/or attend Public Schools in Prince William County, Manassas, and Manassas Park, Virginia, are treated to a day of workshops with professionals working in the Science, Technology, Engineering, the Arts, and Math (STEAM) related career fields.

Girls + **Math** + *Science* = SUCCESS !

STEAM ~ STEM + the Arts ~
Career Conference for Students & the Adults in Their Lives

March 18, 2017
Marsteller Middle School: Bristow, Virginia

Presented by:
AAUW
Woodbridge Branch, *American Association of University Women;*
SPARK, *The Education Foundation for Prince William County Public Schools*
SPARK

The goals of the 2017 "SUCCESS! Conference" were:
- To increase students' awareness of the importance of and interest in the STEM subjects of Science, Technology, Engineering, & Mathematics, plus the Arts-which enhance STEM;

- To provide students with opportunities to meet women working in both traditional and non-traditional STEAM career fields;

- To nurture an awareness of the many career opportunities which involve Mathematics, Science, Engineering, the Arts, and Technology;

- To provide students with an awareness of women's important roles in history-locally, nationally, and globally;

- To provide parents, educators, and community leaders with an awareness of the importance of the above goals; and,

- To offer support and strategies to adults to assist in empowering their children's and students' aspirations and goals.

The INCOSE Chesapeake Chapter supported this important STEAM event in two ways:

- A check for $200.00; making it one of the event's "Corporate Sponsors", and
- Chapter members gave presentations for the event.

During the half-day event, the Michelle and Mike each facilitated a series of systems engineering "Systems Thinking Roundtable" sessions. Mike led two 45-minute sessions for Adults (Parents & Educators), while Michelle led three 30-minute sessions for Students. Both sets of Roundtable sessions were conducted using scripted "Systems Thinking Roundtable Guides" developed by Dr. James Martin and Dr. Susan Gabriele as part of their collaborative research and work for the INCOSE Systems Science Working Group. Michelle and Mike held several INCOSE WebEx meetings with Dr. Gabriele, who advised them on how to tailor the Guides for this specific STEAM event.

All five of the sessions were well-attended; with many participants saying how much it helped them better understand systems engineering roles. The plan is to make these Adult and Student "Systems Thinking Roundtable Guides" available to other INCOSE members to offer at future STEM/STEAM related events.

## Baltimore Science Fair
*Contributed By: Charlie Welch and George Anderson*

We had a wonderful time at the Baltimore Science Fair held at Towson University on March 25th. We judged many presentations and projects, then selected some for awards and certificates. All the judges had a great time working together. Thanks very much to everyone for their time. We're all looking forward to getting back together next year. Lesson Learned: The more volunteer judges on the team, the better we'll be able to do a good job of interviewing the many high school and middle school projects. This year It took the Chapter judging team almost the entire seven hours to interview and judge just the high school projects. We did not have time to interview nearly as many of the middle school projects as we would have liked. More volunteer judges next year will allow for maybe two teams of three judges to cover each division.

The Chapter gave out several awards:

- 1st Place: $150 to Amy Zhang for her presentation on, "Self-Folding Motile Encapsulating Microdevices For Use in Single-Cell Analysis".
- 2nd Place: $125 to Sabahat Fatim, "Catching the Sun with Transparent Solar Cells"
- 3rd Place: $100 to Robert Blanchard, "Effects of Geometrical Constraints on the Mechanical Properties of Engineered Microtissues"

Honorable Mention:

- Regina Hong, "An Active-control Mechanical Architecture for Blended Wing Body Aircraft".
- Alida Schott, "Deciphering the Sedimentary Record of Galle Crater, Mars".
- Danny Hemani, "Don't Waste the Medical Waste: Reducing Improperly Classified Hazardous Waste in a Medical Facility".
- Sashita Subburaj, "The Effect of Different Materials and Designs of a Thermal Protective System on the Time That the Screw Stays Attached to the Dowel Rod".

- Jayshree Srinivasan and Rishika Kokatam, joint project.
- Bryan Nichols, "The Color Nullifier".

The Chapter is proud to support our local students, and we look forward to supporting future STEM/STEAM related activities.  We courage your ideas and your support.



*Chesapeake Chapter 2017 Baltimore Science Fair Judges (left to right) Chuck Struchen, Charlie Welch, Clinton Hilliard, George Anderson, ESEP, Judge not pictured: Tom Platt*

### Membership Arena

**Mark Kaczmarek**
**Membership Director**

INCOSE membership is well over 12,000 world-wide.  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 = 326
- Certification = 140
    - ASEPs = 22
    - CSEPs = 88
    - ESEPs = 29

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:**

March 2017
- *Brooks, Dr. Nykia* -  Johns Hopkins University
- *Cohoon, Tanya* - Student, University of Maryland, University College
- *Green-Brown, Malaika* - Cyberoo, Inc.
- *Hudgins, Emily* - ASRC Federal
- *Mastalerz, Anthony* - Raytheon IIS/CSM

February 2017
- *Bjorkgren, William* -  Sotera Defense Solutions, Inc.
- *Knizhnik, Jessica* - Student
- *Thomas, Kyle* - MetaTech Consulting, Inc.
- *Walsh, Alexander* - Student, Penn State University

January 2017
- *Azan B, CSEP* (Associate Director)
- *Morgenstern Robert* - National Aeronautics and Space Administration (NASA)
- *Topping Gary* -  Smiths Detection

December 2016
- *Bjorling Terra* - ASRC Federal
- *Cates, Noble, CSEP* – Vencore (Associate Director)
- *Raub Francesca,* Capella University

November 2016
- *Lancaster, Jay*
- *Michealson, Kirk* - Tackle Solutions, LLC
- *Baker, Robert* - Colorado State University Systems Engineering Programs

**Congratulations to Newly Certified SEPs since August 2016:**
- *Butziger, Peter*, *ESEP* - Vencore
- *Dougherty, Joseph, ASEP*
- *Flanigan, David, CSEP* - JHU/APL
- *Gianni, Benjamin, ASEP* - Loyola University Maryland
- *Gigioli, Tony*, *CSEP* - Booz Allen Hamilton (Chesapeake Chapter Treasurer)
- *Harvey, Lance, ESEP* - Jacobs
- *Hershey, Robin*, *ESEP* - BCT, LLC
- *Jackson, Dustin, CSEP* - Leidos
- *Lantz, Gary, CSEP* - The Boeing Company
- *Morgan, Asia*, *CSEP*
- *Polacek, George*, *ESEP*
- *Sathi, Ram, CSEP* - Northrop Grumman Corporation
- *Starkey, James, CSEP*
- *Wright, Linnea, CSEP* – Booz Allen Hamilton, Inc.

Keep up with the latest news and events. Find out about our new Board of Directors. Explore our extensive library of previous lectures from our Monthly Dinner Meetings. Learn of the Benefits of Joining INCOSE. Check out Systems Engineering education in the local area. All this and more awaits you at our Chapter Website
http://www.incose-cc.org
For any comments or suggestions about this newsletter please e-mail our communications team
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- Past President: EleanoraAnn "Ellie" Gianni, ESEP
- President-Elect: Dr. Grace Crowder
- Treasurer: Tony Gigioli, CSEP
- Secretary: Craig Tyler, ESEP
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- Communications: Myra Parsons Gross, ESEP
- Membership Committee: Mark Kaczmarek

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