



INCOSE Chesapeake Chapter

International Council on Systems Engineering

E-Newsletter

May 2012

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16 May 2012 (6:00 – 8:00 pm)

Engineering Challenges and Scientific Capabilities of the James Webb Space Telescope



Speaker: Dr. John C. Mather, Nobel Laureate, Senior Astrophysicist NASA Goddard

Presentation: The JWST is planned for launch in 2018 as the successor to the Hubble Space Telescope. It extends the scientific discoveries of the HST into the infrared band, covering 0.6 to 28 μm, with extraordinary sensitivity to reach far closer to the Big Bang, to look inside dust clouds where stars and planets are forming today, and to observe exoplanetary atmospheres through the transit technique. The 6.5 m telescope mirror is made of 18 beryllium hexagons, all of which are now polished,

gold-coated, and tested. Using algorithms developed for the Hubble repair, the JWST will be focused after launch to achieve diffraction-limited performance at 2 μm. The telescope is protected by a 5-layer deployable sunshield the size of a tennis court, to enable it to cool to about 40 K, to reduce its thermal emissions. I will outline the new concepts and technologies needed for the mission and the scientific observations that are likely with the new observatory.

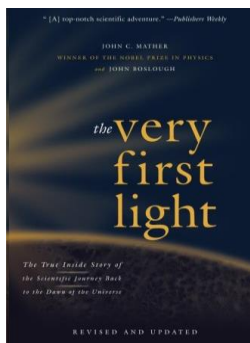
Location: [Applied Physics Laboratory, Johns Hopkins University](#); 11100 Johns Hopkins Rd Laurel MD 20723 (Main Entrance – Lobby 1)

Meal: Pan Seared Tilapia Filet; Mango avocado Salsa and Cilantro rice with garden salad dressing, rolls and butter, dessert, coffee and iced tea.

[>>Download the Meeting Flyer Here<<](#)

Reservations: Purchase a ticket to this event by Credit card via PayPal, go to our [Registration Page](#)

Presentation ONLY: FREE at 7pm in Parsons Auditorium But please [register](#) for Lecture Only Option: There could be a big turnout for this event, for planning purposes



Come out for a chance to win the door prize "The Very First Light": By John Boslough and John Mather

In Vol.3 Issue 05

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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.



Mark your Calendars with these upcoming events:

INCOSE WMA presents **SEDC 2012**
Systems Engineering Conference: May 14-16

May 14-16, 2012: 1st Annual Systems Engineering in Washington DC (SEDC 2012)

please RSVP via our registration webpage even if you don't plan on joining us for dinner.

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2 June 2012 (8:00 am – 4:30 pm)

[Agile Project Management and Systems Engineering:](#)

for Administrative, Technical, and Key Project Contributors

Dr. Suzette Johnson and Dr. David F. Rico

Presentation: Agile is now used by over 80% of world-wide technology-intensive projects. This includes the U.S. DoD, Fortune 500 financial firms, global telecommunications industry, and Silicon Valley staples such as Google, Facebook, Yahoo, Amazon, Microsoft, etc. Agile project management and systems engineering is a highly-disciplined paradigm for developing high-risk, time-sensitive, technology intensive systems. It is a flexible and lightweight alternative to historical scope-driven paradigms such as the PMBoK and SEBoK, while simultaneously satisfying stringent quality and reliability performance objectives. A major goal of this seminar is to provide key decision-makers with the skills to plan, lead, and contribute to contemporary projects.



Baltimore Chapter
Project Management Institute®

*This is a Joint Seminar with
PMI Baltimore*

[Download the Flyer](#) or go to the [website post for more](#) information on the instructors, location and cost. **(Limited Seating – Please register early)**

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Presidents POV

A Systems Engineering Perspective from the Dentist Chair

Wednesday, June 20, 2012 The Role of Distributed Power Systems in the U.S. Electricity Sector

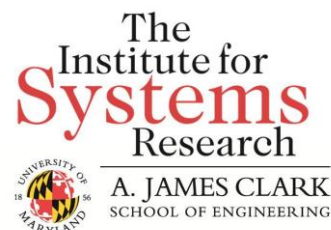
Bradley Schoener, Ph.D; MITRE Corporation

July 9 -12, 2012: [22nd Annual INCOSE International Symposium](#) in Rome

The Chesapeake Chapter is always looking for volunteers to speak at our upcoming meetings! Please contact our 2012 Programs Director, [Mr. Erik DeVito](#), if you would like the opportunity to speak or can recommend someone.

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:

Booz | Allen | Hamilton



serco
Bringing service to life



As I sat in the dentist chair this morning reflecting on how my dentist was going to lighten my wallet by \$500 (my cost) to replace a crown on one of my teeth, my Systems Engineering instinct kicked in. I said, “Wait a minute! My dentist is coming to me with a solution in hand. What are the requirements? Has he looked at the alternatives?” Suddenly, I was challenged to look at this dentist appointment as a systems engineering problem. First, let’s start with an Analysis of Alternatives. What are my options and what is the cost of each option? The dentist had told me that a cavity had developed on the face of the base of the tooth along the margin of the crown. Was there an option to repair the cavity without replacing the crown? Apparently the crown had been installed in 2002 and the cavity had already been patched once in 2009. Hmm, what is the life expectancy of the crown, of the cavity patch? Why couldn’t he patch the cavity again from the outside without removing the crown? Apparently that’s what the dentist did in 2009 and it didn’t last since the patch was on the face of the tooth near the gum line. Ok, well, let’s patch it again since the cost of fixing would be far less than the cost of a new system. The dentist informed me that the decay had probably spread underneath the crown to areas not visible to the eye and that the metal from the crown was blocking the x-ray from allowing him to see to what extent the decay had spread. If you simply patched the cavity, there was a risk (another systems engineering term) and a high probability that the decay had spread beneath the crown. Ok, I wasn’t giving up yet. I could feel my wallet lifting in my pocket. There has to be another alternative. What is it? Ok, I got it! I asked the dentist why he couldn’t remove the existing crown, fix the cavity and put the original crown back in place. Oh, he said, the cement they use is so permanent that he couldn’t remove the crown. The only way to get the existing crown off would be to drill and cut it off – basically to remove the legacy system. It wouldn’t be salvageable. Ok, one, two, three, my alternatives had been quickly analyzed by the Subject Matter Expert (my dentist) and deemed infeasible. Oh well, as I walked out of the dentist office, it looked like I would be re-allocating some of the line items in my budget. So, the next time you’re engaged in one of the mundane and routine activities of everyday life, I challenge you to look at it from a systems engineering perspective! Regards, *Dr. Don York, CC President,*

don.york@incose.org

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Announcements

Two new Working Groups have been started

Now is the time to get involved!

1) Future of Energy working group

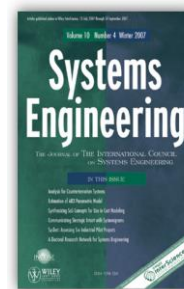



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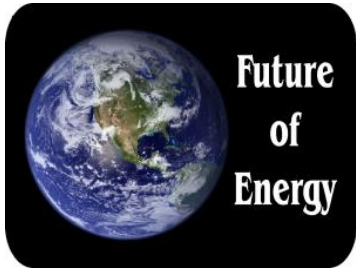
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Dr. Alex Pavlak is setting up a Future of Energy (FoE) working group. A paper to he will be presenting at IS2012 in Rome this July describes the task, a classic concept definition phase. The proposed effort is unique in two respects. First it will focus on whole systems, the delivery of energy that is cheap safe sustainable and secure. Second it will focus on the destination, the long term goal. Given what

is known today, what would post fossil fuel energy systems look like. The product will be technically feasible alternatives. Through publications and lectures, the FoE working group will raise public awareness of these factual constraints on social value choices. If you are interested in participating, please email Dr. Pavalak at alex@pavlak.net.

2) Systems Engineering – Project Management (SE – PM) Working Group

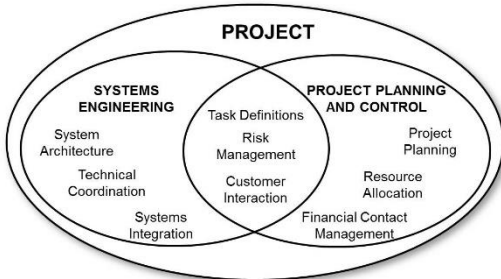


Figure 5-1 SE/Project Planning and Control Overlap
From Kosiakoff and Sweet (2003), *Systems Engineering: Principles and Practice* Page 91

Dave Fadeley, ESEP, is forming a Systems Engineering - Project Management (SE - PM) Working Group with the intent of working with PMI Baltimore chapter members in order to enhance overall program success through the improved integration of practices between the two

communities. At the international level, INCOSE and PMI have jointly released a statement "[PMI and INCOSE Align to Help Organizations Improve Program Success](#)" in September 2011 outlining the partnership and have also produced a white paper, "[Toward a New Mindset: Bridging the Gap between Program Management and Systems Engineering](#)". If you are interested in participating, please send Mr. Fadeley an email at dbfadeley@verizon.net.

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Feature Article from our Blog

INSIGHT into the state of Systems Engineering Professionalization

By Erik Devito

and download papers of interest. Registration on the Wiley site is required. Instructions for accessing the SE Journal can be found in [INCOSE Connect](#)

With Connect you can also download INSIGHT April 2012, Vol 15 - Issue 1 *Special Feature: Meet the INCOSE Authors*



Click on image above and Log-In today.

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Newest Chapter Members

- Hugh Arsenault *Jeffries Technology Solutions*
- Adura Adekunjo
- Warren Naylor *Northrop Grumman*
- Dana Trzeciak *Edgewood Chemical Biological Center (ECBC)*
- Bill Dolley *LSIPROS (SDVO SB)*
- Sidna Simpkins *SAIC*
- Edward Engbert *Army RDECOM HQ*
- Brian Dear *Analyst Warehouse, LLC*
- Casey Jackson *Analyst Warehouse, LLC*
- Damon Tull *Independent Technical Professional*
- Scott Shaw *SURVICE Engineering*
- Stanton Palmer *Six3 Systems - Enterprise Systems Division*

We welcome our latest new members. We look forward to



Not only was [last night our monthly INCOSE Chesapeake dinner lecture](#) at Johns Hopkins University Applied Physics Laboratory with Michael J. Kormos of PJM Interconnection but it was also when I was alerted by email that the most recent issue of INCOSE INSIGHT was available via INCOSE Connect. INSIGHT is always a treat to read. It's professional,

informative, and possesses a balanced scope with regard to the range of SE topics it typically covers. This issue, the first of four for Volume 15 was especially engaging and celebratory. It started with President John Thomas sharing his belief that the organization needs to shape the world's perception regarding the ever increasing value of both, Systems Engineering as a fundamental scientific discipline and Systems Engineer Professionals as skilled practitioners who can tackle the world's big problems.

[>>Read more at our blog>>](#)

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Did You Miss Last Month?

[Life after the Northeast Blackout of 2003](#)



*Mr Kormos talks to the
INCOSE Chesapeake
Chapter*

April 18th, 2012 was a historic day as IEEE Power & Energy Society – Baltimore Chapter and INCOSE Chesapeake Chapter joined forces for the first time to host a dinner/lecture at JHU/APL. The speaker, Mike Kormos, Senior Vice President – Operations of PJM Interconnection, held the 55 attendees spell bound as he explained the reasons and fall out the North East Blackout of August 14th 2003. Even though the blackout could have been prevented, several causes – training, tools, and trees – conspired that evening to bring about the cascading effect that resulted in 55 million people to lose power. Mr. Komos told the story by using the original slides from the February 2004, the U.S.-Canada Power System Outage Task Force. He did note that the PJM Interconnection systems at the time

were able to ride through the event with very minimum power outage; mainly because of their advance system planning that was in place.

[>>Check out the complete write-up on the event as well as Mr. Kormos' presentation.>>](#)

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seeing you at our meetings and tutorials.

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This Newsletter is to serve our members and is open to all for contributions. Do you have an interesting idea for an article? A review of a new book related to engineering? [Let us know](#). We'd love to hear about. It may wind up in a future issue of our Newsletter.

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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 [INCOSE Chesapeake Chapter Website](#).

For any comments or suggestions about this newsletter please e-mail our [President, Don York](#) or our [Communications Officer, Paul Martin](#). We value your feedback.

Board of Director Officers, 2012

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Thanks in advance.**

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