



March 2016 Newsletter

Newsletter Highlights:

- ✓ Regional Mini-Conference is April 9th -10th
- ✓ Survey results
- ✓ New INCOSE San Diego board
- ✓ A snapshot of the 2016 International Workshop

www.sdincose.org

From the President:

Warm greetings to all INCOSE members and friends. I'm very honored to serve as President of the San Diego Chapter of INCOSE for 2016. We are all aware of the great importance of our chosen field. The principles of systems engineering are increasingly relevant as civilization and technology progresses so rapidly, becoming more complex every day. Thus I feel privileged because the INCOSE mission is critical to society, and all the great people and institutions in our circle.

Our chapter provides ongoing technical education for practicing systems engineers and a host of networking opportunities. You may attend meetings, tutorials, or related conferences to gain technical knowledge and meet others. Much effort also supports STEM-related activities for young students in local schools to give back to the community.

This year we are making some adaptive changes ourselves in operations. These include new meeting logistics, a revamping of our web presence, forays into social media, and others. We solicit your input and continuous feedback on all these to help maximize our impact in the San Diego region.

We encourage everyone to become more active in our chapter and INCOSE at-large, and hope to see you at many stimulating events this year. In subsequent newsletters I will highlight more of our activities and some enduring concepts of systems engineering embodied in our INCOSE heritage.

-Ray Madachy

Survey Results

Thank you to all who participated in our 2015 Dec survey.

From the survey, we learned the following were our member's top interests: requirements definition, Model-Based Systems Engineering (MBSE), and architecture. These were closely followed by UAVs, medical instruments, complexity project estimation, Artificial Intelligence (AI) and machine learning, and Autonomous Systems.

Results were split on the location of our presentations – some members wanted a single location, while others preferred to move around. We recently met at ViaSat in Carlsbad, but due to an audio clarity issue we will meet exclusively at our Kearny Mesa location until this issue is worked out.

Upcoming Events

Membership meetings are open to all. They are held from 6:00-7:00pm at Giovanni's Restaurant in Kearny Mesa. The address is 9353 Clairemont Mesa Blvd, San Diego 92123.

There is an optional buffet between 5:00 and 6:00 (\$5 for members, \$10 for non-members). Reminder emails shall be sent.

- **March 16th** – “Design and Systems Thinking in a Constrained Environment.” Ellen Chang of LightSpeed Innovations shall present on Design Thinking at a basic level and how it relates to Systems Thinking and systems engineering processes.
- **May 18th** – “Risk Management.” Jim Gottfried will discuss risk management in systems engineering.

Regional Mini-Conference, Apr 9-10



Loyola Marymount University, Los Angeles

The 2016 INCOSE western regional mini-conference has almost arrived. Five western chapters – LA, San Francisco, Central Arizona, Southern Arizona, and San Diego – will be holding a two-day conference at Loyola Marymount University in Los Angeles. Please register [here](http://www.rmcl16.net).

- ⇒ **Date & Time:**
Sat April 9 and Sun April 10, 8am – 5pm both days.
- ⇒ **Cost:**
From \$70 for Sponsors/Exhibitors to \$165 non-INCOSE members. (Please see the website for details.)
- ⇒ **Address:**
Loyola Marymount University
1 LMU Drive
Los Angeles, CA 90045
- ⇒ **Website:** <http://www.rmcl16.net>

Mini-Conference Topics

- Autonomous Resiliency Research and Applications
- Decision Making
- Systems Architecting and Trade Space Analysis
- Human-Systems Engineering
- Role of Social Media
- Cybersecurity Systems Engineering/Cyber-Physical Systems
- Value-based, lean, agile S.E.
- Valuing Flexibility
- Model-Based S.E.
- Methodologies/Implementations/Processes
- Application of MBSE Across the Spectrum of S.E. Applications
- Complex Systems
- Big Data Analytics/Role of Analytics

San Diego Tutorials

The board is still investigating a Big Data tutorial for 2016, as well as a workshop for Systems Engineering in Agile. Please stay tuned as we research the various presenters and options that fit both their and our schedules.

2016 INCOSE San Diego Board

The new INCOSE San Diego board was seated in January, when we welcomed a new president, president-elect, and past-president in addition to other positions. Please see below for the full listing (new board members are in bold).

- Ray Madachy, President
- Richard Bryson, President-Elect
- Mark Halverson, Past-President
- Evelyn Fan Encarnacion, 1-year Director
- **Randy Woolley**, Secretary
- Jim Gottfried, Chapter Development
- Eric Villhauer, Technical Development
- **Andrew Bonica**, 2-year Director and Webmaster
- **Abbas Rostami**, Treasurer
- Greg Bulla, Administration

2016 INCOSE International Workshop Held

INCOSE held their 2016 International Workshop in Torrance, CA on Jan 31-Feb 2. Below is short description by Mark Halverson, Past-President of our chapter:

It is not often that the IW is held so close to home, so I wanted to take advantage of the opportunity this year. The opening joint session on Saturday morning featured an inspirational speech by the out-going president, David Long. He gave his view of the progress during the past few years as well as his insight for what will be happening in systems engineering in the future years. Then he installed the new international INCOSE board of directors.



The IW is very much a hands-on opportunity to get into the dealings of the various working groups, most of which are open to all. And you can only do one of them! I got down and dirty with Model-Based Systems Engineering Working Group, and then got down to the basic blocking and tackling of the Requirements Working Group. Since I have been working in the field of complex systems engineering for some years, I also attended the Complex Systems Engineering Working Group, which this year was addressing cyber security (Information Assurance) as a special case of complex systems engineering. A bunch of very smart people addressing a fascinating problem in an innovative way. I look forward to future developments from this group.

Since this represents INCOSE's 25th anniversary, I was interested in seeing that they have finally come up with a succinct and foolproof way to differentiate systems engineers from all of the other types of engineers. While talking to a group, ordinary engineers stare at their shoes, whereas systems engineers stare at everyone else's shoes. Well, that puts it in a nutshell, doesn't it?

New Members

INCOSE San Diego is pleased to announce the addition of 12 new members to our chapter since December. Please welcome the following individuals (bios are forthcoming):

- Vincent Balgos
- Elizabeth Bowe
- Constantine Firme
- Dr. David Jacobs
- John Laiche
- Dr. Gabriel Lengua
- Kelly Lennard
- Omar Madrigal
- Curtis McConnell
- Ryan Moriarty
- Mark O'Leary
- Anthony Russell

We hope to meet each and every one of you at the many upcoming INCOSE events!

Please Update your INCOSE Profile

The international INCOSE website is now complete and operational – hence, a good time to check your personal information and settings. Please log in [here](#) and ensure everything is up to date.

Systems Engineering Flexibility and Practical Application

Do you consider yourself a ‘by-the-book’ engineer, or do you prefer things a little more flexible? Although the best approach to systems engineering often depends on the schedule, team and risks involved, the following is a lesson from the INCOSE Systems Engineering handbook which discusses the value of practicality:

“An Allegorical Tale”

A senior systems engineer at a major U.S. company visited all of the divisions with the goal of increasing the use of good system engineering practices. His message included all the things that SE can/should do in commercializing products. His message also included a strong bias towards planning and documentation. Over a period of months he visited with Division Managers, Chief Engineers, Program Managers, and Senior Engineers. He returned completely depleted of his enthusiasm. The problem was that the message was totally rejected because it was interpreted as useless, non-value added work or way beyond anything the company could afford to do from a time and dollars perspective.

Sometime later, another senior systems engineer visited many of the same people with the same purpose but a different message. The message the second engineer delivered was that big gains could be made by focusing on the most important customer needs and using a select group of synergistic system engineering tools/practices to fill those needs. This time the message was well received.

The lesson: “Systems engineering is a multi-disciplinary effort that involves both the technical effort and technical project management aspects of a project. Organizations seeking to incorporate the benefits of processes outlined in ISO/IEC 15288:2008 will remember that application of those processes, and the enablers discussed in this handbook, requires vision and practical application of the principles.

Recent Presentations

Thanks to both Dr. Jo Ann Lane and Dr. David Jacobs for their excellent presentations at our January and February chapter meetings. If you missed the meetings, or would simply like to re-review the material, please see the following website links:

[“Incremental Commitment Spiral Model as Applied to Systems of Systems \(SoS\)”](#) – Dr. Jo Ann Lane

[“Evolving Systems Engineering Design from Single Function Products to Systems-of-Systems and Service Based Capabilities”](#) – Dr. David Jacobs

Congrats

Rick Steiner was recently elected as an INCOSE fellow. This award recognizes individuals for significant contribution to the art and practice of systems engineering in industry, government or academia. It is a high honor.

Please congratulate Rick the next time you meet him at one of our San Diego chapter events!

INCOSE San Diego Contacts

Questions or suggestions? Please feel free to contact us:

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