



# Dec 2016 Newsletter

## Newsletter Highlights:

- ✓ Our INCOSE heritage (Part 3, Final)
- ✓ Dec 14<sup>th</sup> Annual Holiday Event!
- ✓ In Memoriam: Jeff Grady, INCOSE Pioneer
- ✓ Images from USS Midway STEM Event

[www.sdincose.org](http://www.sdincose.org)

## From the President:

### *Our INCOSE Heritage (Part 3, Final)*

*My theme in this year's newsletters has been highlighting enduring concepts of systems engineering embodied in our INCOSE heritage. I have been describing lasting contributions from early pioneers in the 1994 inaugural issue of the Systems Engineering Journal.*

*In our September newsletter, I mentioned this month would focus on our local member [Jeff Grady](#) who served as the first journal editor, and wrote an important article in it "System Engineering Dichotomies." This digression was going to be solely about the dichotomies explained in his article and their implications.*

*But then the worst of news came: Jeff passed away. I was looking forward to engaging with him for his approval before this article was published, as it was important that I express his ideas accurately. Unfortunately, his untimely death presented a dichotomy itself. No matter how well one plans ahead, unknowns may still occur.*

*In 1994 before there was an INCOSE-approved definition of systems engineering he wrote "System engineering is currently an art form looking for a scientific basis." The insightful article was about dichotomies inherent when trying to define the discipline (see his article [here](#)). For example, there were disagreements on the degree of logical formality needed. He explained throughout how opposing world views of rigor and order vs. creativity are both useful in systems engineering, but neither is independently sufficient.*

*There exists tension between perspectives on systems engineering in several ways. One strongly-held view of systems engineering is a product-oriented view. Jeff pointed out there must also be a linked process view that includes the systems engineers who create the products. These different dimensions must be aligned for successful systems engineering.*

*Some would say that our profession is about being generalists across disciplines with no specific technical expertise. Yet we are specialized about integrating disparate disciplines holistically. Thus we are both generalists and specialists.*

*For these reasons and others, he concluded that systems engineering should be viewed with a wide-angle lens, as each view at ends of the spectrums are just extremes in a dichotomy.*

*Just as point designs are anathema to systems engineers, we should not fall into that same trap with respect to our views of the profession.*

*Systems engineering can't be defined in narrow terms so we should fit our preconceived notions into a broader context. It is evident that Jeff internalized this open-minded view as exhibited through his continuous learning and teaching of systems engineering in his life.*

*Jeff was a true pioneer of systems engineering and early founding member of INCOSE being member #9. He served our chapter as an extremely active member that educated and entertained us for many years. We will miss him sorely and are considering the establishment of a Jeff Grady Annual Service Award for the San Diego chapter.*

*Please see the accompanying article "In Memoriam Jeffrey O. Grady" by our Past President Mark Halverson for a broader view of his tremendous life and personality.*

- Ray Madachy

## Upcoming Events

**Membership meetings are open to all.** They are now held from 6:00-7:00pm at **Filippi's Restaurant in Kearny Mesa**. The address is 5353 Kearny Villa Road, SD 92123.

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

- **Dec 14<sup>th</sup> 2016** – Please join us for our **Annual Holiday Get-Together** at BJ's restaurant in the Hazard Center in Mission Valley, from 6-? pm. This event will be held on Wednesday to keep with our regular meeting day. This party is free to all, so bring a guest and introduce them to the chapter. BJ's address is 1370 Frazee Rd, 92108.



Click [here](#) to see the location on Google Maps.

- **Jan 18<sup>th</sup>, 2017** – Ray Madachy will present “System Total Ownership Costs (TOC), Affordability and Tradespace Analysis in the Context of MBSE.”
- **Feb 15<sup>th</sup>, 2017** – Randy Woolley will present “Using Systems Engineering for Transportation Research”.

## In Memoriam: Jeffrey O. Grady



On September 7 of this year, one of the founders of INCOSE and for many years a solid member of, as well as a constant contributor to, the San Diego Chapter of INCOSE passed away suddenly due to a confluence of medical difficulties. It was a shock to all of us here in San Diego, and we are still struggling to come to grips with the loss of this great

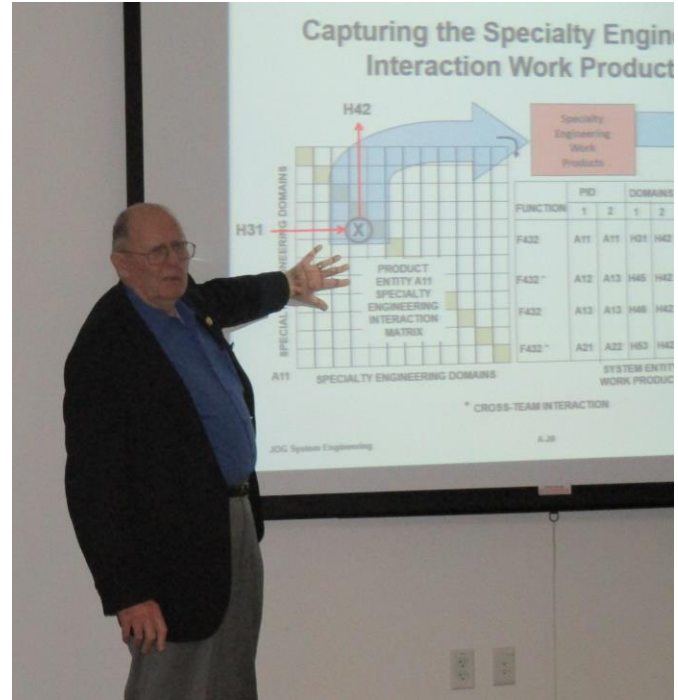
talent and dear friend.

Jeff joined the Marine Corps in 1954, and served in various capacities until being honorably discharged in 1964. He then worked for Librascope, Ryan Aeronautical, and General Dynamics before becoming an independent consultant. His duties took him to interesting places, and at times into war zones. One time he found his flight being tracked by Chinese fighter planes, and when in Vietnam while supporting the military he was shot at while riding a bicycle during the Tet Offensive. Those of us who knew him have fond memories of the many stories of Jeff's exploits, which he would tell with great animation after a bit of prodding (he was modest to a fault, and reluctant to talk of himself).

With Jeff's boundless curiosity, he never stopped learning and teaching. He graduated with a BS from SDSU and a MS from USC and embarked on a career of practice in systems engineering. Where the procedures and practices were inadequate or non-existent, Jeff invented what was needed in order to fill in the gaps and improve the quality of the engineering. For many of us he was our instructor at UCSD's extension, where he was key in starting up one of the first programs in systems engineering in the country. Jeff is the author of ten books on the subject of systems engineering – in fact, just before his death the publisher approved his most recent work for publication, which gave Jeff great satisfaction.

On October 13, several members of INCOSE attended his memorial service at the First Baptist Church of San Diego. Jeff's family members and friends spoke of their memories of him. In addition, I stood up and related my experiences with Jeff as a mentor and as a fellow systems engineer. It is with great sadness that I said goodbye to Jeff as he

transitioned from the San Diego Chapter of INCOSE to the Chapter Eternal. Bravo Zulu and Semper Fidelis my friend. I wish you fair winds and following seas.



Jeff presenting at INCOSE

## INCOSE San Diego STEM Awards

**Congratulations to all!** The San Diego chapter has awarded over \$11,000 of STEM funding to 12 schools in San Diego County. These funds shall be used to purchase various kits to assist in the teaching of physics, engineering, hazardous material science, robots, software coding, 3-D printing, medical science, and other STEM topics. Several schools will be standing up STEM labs, providing young students the opportunity to learn by experimentation. One school – North Terrace Community School in Oceanside – will even be teaching a novel subject concerning the relationship between art, math and science.

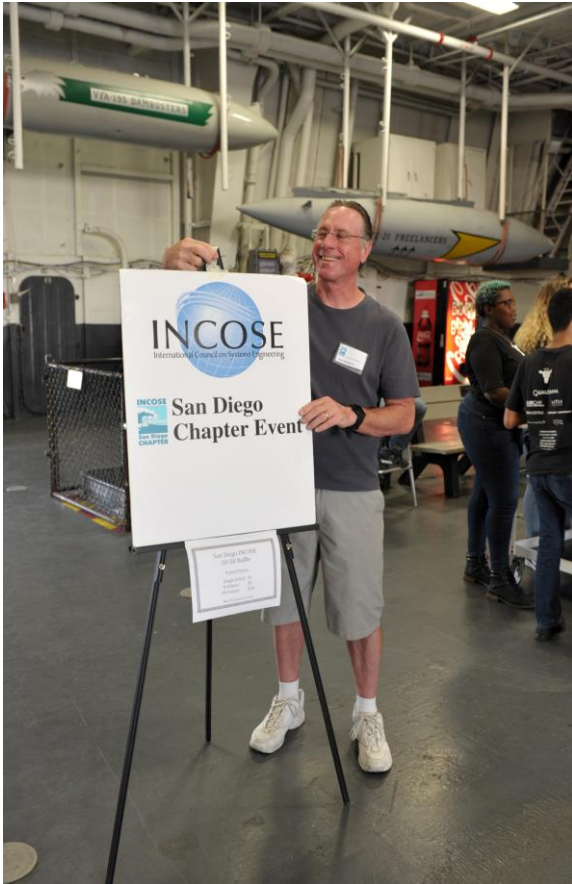
Please let us again thank our sponsors and members for their generous donations which made these awards possible! Year after year, people continue to come forward.

- Cubic Corporation
- SAIC
- ViaSat
- International Test and Evaluation Association, and
- individual SD INCOSE members

## Our Recent 5<sup>th</sup> Annual USS Midway Event

**Thank you** to everyone who made it to our September 5<sup>th</sup> annual USS Midway STEM fundraising event a success! It was a great event showcasing innovative programs and student groups from several of our STEM recipient schools, including Stuart Mesa Elementary (Oceanside) and Warren

Walker Middle School. The raffle collected \$258 for STEM. It was also a fun night aboard the incredible USS Midway – please see images below.



Ray Madachy setting up for the big event.



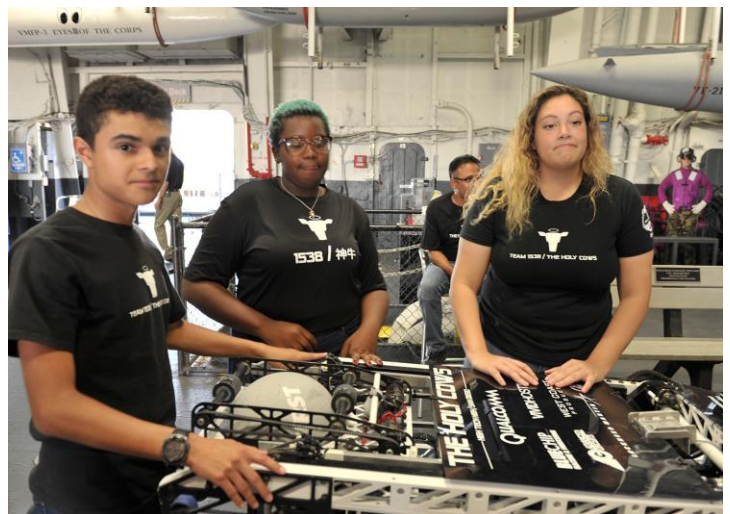
Enjoying the evening.



Jim Gottfried with raffle.



Our American Society of Quality (ASQ) event partners.



Students displaying their robot.



The new Battle of Midway exhibit.



Our own Mark Halverson in the information center.



The flight deck at night.

## Upcoming Big Data Tutorial in San Diego

On **December 14-15<sup>th</sup>, 2016**, the UCSD Super Computing Center will host a two-day conference on business applications of data. The event covers a wide range of data topics, from large-scale data system agility and performance,

to new ventures in data analytics, cyber-physical systems, machine learning and smart manufacturing. Please see their website [here](#).



INCOSE members will receive a 25% discount from the price of the conference. Please contact Eric Villhauer at [villhauer.eric@gmail.com](mailto:villhauer.eric@gmail.com) for information on obtaining this discount.

## Our Recent Fall INCOSE San Diego Mini Conference

This year's INCOSE San Diego mini-conference was held on Saturday, November 5<sup>th</sup>, 2016. It included speakers on subjects ranging from Agile systems engineering to UAVs. Thanks to all for attending, and we look forward to Mini-Conference 2017.



2017 INCOSE San Diego Mini-Conference attendees and presenters.

## New Members

INCOSE San Diego is pleased to announce the addition of eight new members to our chapter since Sept 2016. Please welcome the following individuals to INCOSE:

- Dan Remiker, SPAWAR
- Joseph Simonetti, Naval Post Graduate School
- Cynthia Tatalovich, ASEG
- Simon Wibowo, Qualcomm
- Eileen Yu, Technology Unlimited Group
- Dr. James Meng, UCSD
- David Engel, ViaSat
- SriKoundinya Punnamaraju, Illumina

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

# Time to Vote Again? Yes! For the INCOSE San Diego Board of Directors

Come January, the San Diego chapter of INCOSE will have a new board of directors for calendar year 2017. The official vote for this board will be held this month, December 2016, so please watch your email inbox for your ballot. You may select from the candidates on the ballot or write one or more in (instructions shall be provided). Thank you in advance for voting!

## *Did you know...?*

INCOSE San Diego is now accepting articles from members for presentation in the quarterly newsletter. Each newsletter will present one article, with the goal being to provide deeper understanding of specific S.E. topics for our readers. To apply to have your topic in the newsletter, please submit your proposed article (one page in length or less) to both the Chapter President ([madachy@gmail.com](mailto:madachy@gmail.com)) and the VP of Administration ([gbulla@yahoo.com](mailto:gbulla@yahoo.com)). Thank you.

## 2016 INCOSE San Diego Board Contacts

**Questions or suggestions?** Please feel free to contact any of the 2016 board members at the following email addresses:

Ray Madachy, President

[madachy@gmail.com](mailto:madachy@gmail.com)

Andrew Bonica, Website

[andrew.bonica@gmail.com](mailto:andrew.bonica@gmail.com)

Jim Gottfried, Ch. Development

[gottjim50@gmail.com](mailto:gottjim50@gmail.com)

Richard Bryson, President-Elect

[richard.bryson@ngc.com](mailto:richard.bryson@ngc.com)

Evelyn Encarnacion, 1-year Director

[evelynwfan@gmail.com](mailto:evelynwfan@gmail.com)

Mark Halverson, Past President

[mark.halverson@ngc.com](mailto:mark.halverson@ngc.com)

Abbas Rostami, Treasurer

[abbas.rostami@gmail.com](mailto:abbas.rostami@gmail.com)

Eric Villhauer, VP of Tech Development

[villhauer.eric@gmail.com](mailto:villhauer.eric@gmail.com)

Randy Woolley, Secretary

[woolleyh@cox.net](mailto:woolleyh@cox.net)

Greg Bulla, VP of Admin & Newsletter

[gbulla@yahoo.com](mailto:gbulla@yahoo.com)