Vol. 14, Issue 8, December 2016 Extra

NEWSLETTER

2004-14 2015

2008, 2012 President's Award for Most Outstanding Chapter

SPECIAL HOLIDAY EDITION!

So much happened this year we needed an extra edition!

Dr. Madni Honored by The Boeing Company

University of Southern California's (USC) Professor Azad Madni, Professor of Astronautics and Technical Director of the Systems and Engineering (SAE) Program, was honored by The Boeing Company during its 100th Anniversary celebration on August 6, 2016. The honor was bestowed upon Dr. Madni during a formal luncheon held at the Scriptorium of USC's University Club. This was the first time that The Boeing Company executives chose to honor a faculty member at a university with a Lifetime Accomplishment Award and Visionary Systems Engineering Leadership Award.

Vice Dean Jim Moore, who welcomed The Boeing Company executives and guests, described Professor Madni's impressive contributions to USC's flagship Systems Architecting and Engineering (SAE) Program, and the Viterbi School of Engineering.

Mr. Marcus Nance, Boeing's Director of Competitiveness and Integration spoke about Professor Madni's pioneering contributions to aerospace engineering research and education, and the impact of his contributions on Boeing's competitiveness in the aerospace market.

He said that Professor Madni is an "innovation integrator," in the spirit of Edison, with a unique ability to bring together advances from different disciplines in novel ways to solve difficult sociotechnical problems in education and engineering.

(See "Boeing Honors Dr. Madni," on page 4)

CSER 2017: It's Coming! March 23 — 25, 2017

The Conference on Systems Engineering Research (CSER) is only three months away and, for many of us, now is the time to start planning to attend. As with past CSER events, CSER 2017 will be another superb opportunity for the systems engineering professionals to:

- Look into the future of the profession – the challenges of the future and research into how to meet those challenges
- Learn the latest thinking and concepts in the science
- See advances in the application of the profession by sponsors from industry and academia
- Attend leading-edge tutorials
- Hone his or her skills
- Exchange experiences with fellow systems engineers, and
- Hear about the challenges, opportunities, and potential solutions facing our profession from top leaders in industry, government, and academia.

All this in the pleasant setting of The Crowne Plaza Redondo Beach and Marina, venue for CSER 2017. The theme for CSER 2017 is, "Disciplinary Convergence: Implications for Systems Engineering Research," and serves as a spring board for papers and discussions across the spectrum of challenges facing the discipline in both the world of academia and the world of the practitioner.

All in all, CSER 2017 is shaping up to be another excellent conference in keeping with past conferences hosted by the University of Southern California (USC) and the Los Angeles Chapter of INCOSE.

(See "CSER 2017," on page 2)

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National Defense Industrial Association

19th. Annual Systems Engineering Conference

By Doris Gebelein

Chapter member Doris Gebelein attended the NDIA Systems Engineering Conference in Springfield, Virginia the week of October 24, 2016. The following is her report.

It was an excellent opportunity to network with many individuals from different defense companies as well as with individuals from the Department of Defense (DoD). The conference was broken into two different parts: a day of panels, with the remainder of the days being separated into tracks. The six main tracks were:

1. Modeling and Simulation
2. Systems Engineering Effectiveness
3. Engineered Resilient Systems
4. Systems Security Engineering
5. Agile
6. Environment Safety and Occupational Health.

Towards the end of the week, a few additional tracks emerged:

- Program Management
- Better Buying Power
- Systems of Systems Engineering
- Net Centric Operations and Interoperability
- Education and Training, and
- Human System Integration.

The day of panels was a highlight to the conference. The first panel was a Systems Engineering Issues Panel that had executives from several different defense contractors. The second panel was a DoD Program Managers panel with program managers from the Navy, Army and Air Force. The third panel was a DoD Executive Panel with executives from the Navy, Air Force, NASA and the Office of Homeland Security. It was fascinating to hear the perspectives of the executives and to hear how the focus on systems engineering has truly improved their programs.

For the remainder of the week, I found myself attending mostly the Systems Engineering Effectiveness track with a few sessions in the Systems of Systems Engineering track. There were many exciting sessions that are applicable to my work as a defense contractor.

Some session highlights were:

Increasing Systems Engineering Effectiveness Through Operational Risk Considerations, given by Mr. Brian Gallagher

A Practical Framework for Effective Requirements Management Throughout the Life-Cycle by Mr. Oliver Hoehne, and

Special Session: DARPA Systems of Systems Programs.

These and the remainder of the sessions I attended were all very interesting and I was able to take back information I learned from them to my company.

Overall, this conference was a great one to attend and I look forward to attending it again in the future.

(CSER 2017, continued from page 1)

SPEAKERS:

CSER 2017 is honored to feature a stellar cadre of keynote speakers.

Dr. Yannis C. Yortsos has served as Dean of the USC Viterbi School of Engineering since June 2005. He is the Chester F. Dolley Professor of Chemical and Petroleum Engineering, and holds the Zohrab A. Kaprielian Dean's Chair in Engineering. Dr. Yortsos is well known for his work on fluid flow, transport and reaction processes in porous and fractured media with applications to the recovery of subsurface fluids and soil remediation. He has been actively involved in the peer review of the Yucca Mountain Project for the disposal of high-level radioactive waste.

Dr. Greg Hyslop is the Chief Technology Officer of The Boeing Company and senior vice-president of Boeing Engineering, Test & Technology. Dr. Hyslop oversees the development and implementation of the enterprise technology investment strategy, and his portfolio of responsibilities includes the companywide Boeing Engineering function; Boeing Research & Technology, the company's advanced central research and development organization; and Boeing Test & Evaluation, the team that verifies and validates Boeing's commercial and defense products.

Ms. Kristen J. Baldwin is the Principal Deputy to the Deputy Assistant Secretary of Defense for Systems Engineering (DASD(SE)). Ms. Baldwin acts on behalf of the DASD and is responsible for engineering and technical workforce, policy, and systems engineering planning for major defense acquisition programs. Her oversight includes concept engineering and analysis, design, development and manufacturing, and independent program review and assessment. She supports the DASD role of functional leader for more than 40,000 defense acquisition professionals in the Department of Defense (DoD) Engineering and Production, Quality, and Manufacturing workforce. She oversees the DoD strategy for Trusted Systems Design.

Dr. Paul D. Nielsen is Director and Chief Executive Officer of the Software Engineering Institute (SEI), a global leader in advancing software and cybersecurity to solve the nation's toughest problems through focused research, development, and transition to the broad software engineering community.

Attend the conference for networking and learning opportunities on the world stage.

The SEI is a key innovator in areas central to the U.S. Department of Defense and civilian government operation in the cyberspace domain, including software architecture, software product lines, interoperability, the integration of software-intensive systems, network and system resilience, and the increasing overlap of software and systems engineering. The SEI also provides direct support to more than 50 U.S. government entities in their efforts to efficiently and effectively acquire and sustain new software and systems.

(See "CSER Tutorials" on page 4)

Check out a Use-Case-Oriented Vision Statement!
https://www.youtube.com/watch?v=EQFYedsXg7M&feature=share

GameSIG

Reaching out to Students

By Phyllis Marbach

Now in its the sixth year, the IEEE GameSIG Intercollegiate Computer Game Showcase is providing southland university and high school game developers the chance to present their best student-developed video games for judging by an elite panel of video game professionals. More information about the competition can be found here: www.gamesigshowcase.org. In cooperation with IEEE, INCOSE-LA provided a four-hour workshop at Santa Ana College to teach how to engineer a high-quality game using systems engineering planning and design as well as agile practices.

Students from Santa Ana College, Chapman University, UC Irvine, UC Fullerton and Northwood High School gathered at Santa Ana College on Saturday November 19 for a Best Engineered Game workshop. William Fisher, President of Quicksilver Software, Inc. and IEEE-OC member, and Phyllis Marbach, INCOSE-LA Vice-president provided an Introduction to Systems Engineering and Agile Practices as applied to developing video games. Following the introduction, the students worked in teams to develop a concept for a Monster Whack game using the best practices. Several members of the GameSIG Working Group attended the workshop to coach the teams during the exercise including, Mark TenEyck, Shirley Tseng, Harvey Soldan, Michael Do, Connor Wynveen, Michael Fahy, and Varaz Shahmirian.

We owe a special thanks to Patricia Waterman, Professor of Art, 3D Modeling & Animation Certificate Program, Santa Ana College and Dr. James Hester, Head of Computer Science at Santa Ana College for attending and making their facilities available for the day. Thanks also go to Mark TenEyck and Dassault Systemes for providing lunch.

Coaches and mentors are available to work with teams, helping them apply the best practices taught. The teams will be working on the development of their games through May 2017. To arrange a workshop at another location please contact Phyllis at prmarbach@gmail.com.

Pictured above, left to right, are: Mark TenEyck, Shirley Tseng, Varaz Shahmirian, Phyllis Marbach, Michael Do, Connor Wynveen, William Fisher, Patricia Waterman, Dr. James Hester

(Boeing Honors Dr. Madni, continued from page 1)

The Boeing awards presented to Professor Madni were a Lifetime Contributions Award for being "a powerful force in our company, industry, and the nation, and dedication to excellence," and a Systems Engineering Leadership Award for "Vision, and Contributions to Industry and Academia."

Mr. Nance said that Professor Madni's research on model-based approaches for quantifying return-on-learning gave The Boeing Company a decisive edge in the marketplace. He spoke about how Azad's research in experiential design and elegant systems design, that combine engineering methods with entertainment and cinematic arts, are enhancing the upfront engineering process. He said this advance contributed directly to Boeing's strategic goals.

Mr. Nance called Azad "an internationally recognized leader in system science and engineering" and credited him with being "one of a handful of people currently leading the transformation in systems engineering." Mr. Nance thanked Azad for transforming Boeing's SAE Program at USC into the premier systems engineering program in the country. "This program has produced approximately a thousand topnotch Boeing engineers and is by far the most popular graduate program in The Boeing Company," he said. Marc Nance also recognized Azad's leadership on CSER, INCOSE, IEEE, and AIAA conferences in which he continues to bring academia and industry together with conference themes that address problems of national and global significance. He concluded his remarks by pointing to Azad's exemplary work ethic and enduring commitment to advancing engineering education and research in our nation.

Mr. Nance was followed by Dr. Allen Adler, Vice-president of Strategy and Integration, who has also worked with Dr. Madni. Dr. Adler spoke about Azad's research having had a major impact on Boeing. He gave specific examples of how Azad's cross-disciplinary research in systems engineering and learning was able to address Boeing's critical problems in complex systems engineering and workforce development. He said he looked forward to ongoing collaboration with Azad and his research team at USC.

Dr. Adler was followed by Dr. John Tracy, the Chief Technology Officer and Senior Vice-president of Boeing. Dr. Tracy said, "Today is my last day as CTO and SVP at Boeing. I am officially retiring, and I chose to spend my last day at Boeing at USC to honor Professor Madni." Dr. Tracy then described Azad's impact on Boeing and the engineering profession. He described Azad as a "legend" in aerospace systems engineering education and research.

During his acceptance speech, Madni thanked Nance, Adler and Tracy for their unwavering support of his program and research, saying that he looked forward to continuing the mutually rewarding partnership between Boeing and the USC Viterbi School of Engineering.

"I have had a long working relationship with Boeing in education, training, and collaborative research that have led to several joint publications," said Madni. "I've been doing research and educational courses for them for several years." The recognition event was attended by Boeing executives, Viterbi School Vice Deans and Department Chairs, Viterbi faculty members, and several of Dr. Madni's doctoral students.

(CSER Tutorials, continued from page 2)

Day-before-tutorials:

The University of Southern California and INCOSE-LA CSER team has arranged for four high-interest tutorials being conducted the day before CSER 2017 (March 22, 2017).

In the morning (from 8:00 a.m. to noon) there will be two tutorials: Cyber-Physical Systems and Data Analytics (running in parallel). In the afternoon (from 1:00 p.m. to 5:00 p.m.) there will be two additional tutorials: MBSE and Systems Thinking (also occurring in parallel).

Morning tutorials:

- ◊ Cyber-Physical Systems
  Conducted by Dr. Azad Madni, from USC, and Dr. Michael Sievers, from JPL
- ◊ Data Analytics
  Conducted by Dr. Courtney Paulson, from the University of Maryland

Afternoon tutorials:

- ◊ Model-Based Systems Engineering
  Conducted by Dr. Mark L. McKelvin, from USC and The Aerospace Corporation
- ◊ Systems Thinking
  Conducted by Dr. James Martin, from The Aerospace Corporation

The fee for one tutorial is $175.00. The fee for two tutorials is $300.00. Lunch and breaks during the tutorials are included.

Opportunities to Learn by Doing

CSER 2017 will be more than excellent papers, knowledgeable and erudite speakers, and a top-notch venue. The success of conferences and symposia such as this is tied to the sponsors who support the conference, and the INCOSE-LA team is well on their way to signing up a stellar group of sponsors, such as sponsored the CSER 2014 and the 2016 Regional Mini-Conference. There is always room for additional volunteers: developing electronic media and publicity, reviewing papers, supporting panels, working with the sponsors, registering participants, providing real-time coordination — even stuffing the swag bags. Interested in joining this stellar team? Please contact Phyllis Marbach at prmarbach@gmail.com.

The neighborhood around the Crowne Plaza

15th *Annual* Conference on Systems Engineering Research (CSER)

March 23 - 25, 2017, Crowne Plaza Hotel, Redondo Beach, CA

Disciplinary Convergence: Implications for Systems Engineering Research

***CSER 2017** offers researchers in academia, industry, and government a common forum to present, discuss, and influence systems engineering research. **CSER 2017** provides forward-looking research from around the globe, presented by renowned academicians. **CSER 2017** also includes perspectives from senior industry and government representatives. Now in its fifteenth year, **CSER** has become the preeminent event for researchers in systems engineering across the globe.*

CSER FEES	Through February 3, 2017	February 4 through March 9, 2017	March 10, 2017 and subsequent
INCOSE, SERC or USC Alumni	$575.00	$625.00	$675.00
Presenters	$575.00	$575.00	$575.00
Standard	$625.00	$675.00	$725.00
Student, Senior or Military	$225.00	$225.00	$225.00

March 22, 2017 -- Day-Before-Tutorials:

Morning tutorials, 8:00 a.m. to Noon

- Cyber-Physical Systems -- conducted by Dr. Azad Madni, from USC, and Dr. Michael Sievers, from JPL
- Data Analytics -- conducted by Dr. Courtney Paulson, from the University of Maryland

Afternoon tutorials, 1:00 p.m. to 5:00 p.m.

- Model-Based Systems Engineering -- conducted by Dr. Mark L. McKelvin, from USC and The Aerospace Corporation
- Systems Thinking -- conducted by Dr. James Martin, from The Aerospace Corporation

Fees:

One tutorial $175.00 Two tutorials $300.00

Lunch and breaks during the tutorials are included

Information Website

http://viterbi.usc.edu/sae/cser2017.htm

NOW OPEN! Registration Website

http://events.r20.constantcontact.com/register/event?oeidk=a07ed1pkmog0de9079e&llr=l4ihvgeab

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Feb. 6-9	Airframe Stress Analysis and Sizing
Feb. 15-17	Scaled Agile Framework (SAFe) and Six Thinking Hats™
Feb. 22-24	Multitarget/Multisensor Data Fusion Techniques for Target Detection, Classification, and State Estimation
March 6-8	Fundamentals of CCD and CMOS Imagers and Camera Systems
March 13-16	Global Positioning Systems (GPS): Principles and Applications

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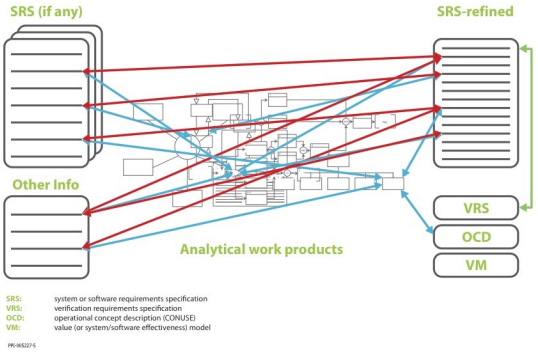

2017 COURSE DELIVERIES

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Las Vegas, NV	13 - 17 November

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2017 5-DAY COURSE SCHEDULE

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LAS VEGAS, NV	FEB 27 - MAR 3
CHICAGO, IL	MAR 13 - MAR 17
ALBUQUERQUE, NM	APR 24 - APR 28
DENVER, CO	MAY 8 - MAY 12
ORLANDO, FL	MAY 22 - MAY 26
BALTIMORE, MD	JUN 12 - JUN 16
LOS ANGELES, CA	JUN 26 - JUN 30
AUSTIN, TX	AUG 14 - AUG 18
DETROIT, MI	SEP 25 - SEP 29
LAS VEGAS, NV	OCT 30 - NOV 3
CHANTILLY, VA	NOV 13 - NOV 17

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INCOSE-LA Chapter NEWSLETTER
Vol. 14: 8, December 2016 Extra

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Forwarding Service Requested

The International Council on Systems Engineering (INCOSE) is a not-for-profit membership organization founded to develop and disseminate the interdisciplinary principles and practices that enable the realization of successful systems. INCOSE's mission is to share, promote, and advance the best of systems engineering from across the globe for the benefit of humanity and the planet.
The Los Angeles Chapter meets several times per year for speaker meetings and, in addition, sponsors tutorials, mini-conferences and other activities of interest to those in systems engineering or related fields.

UPCOMING EVENTS

For more details on Chapter-sponsored events and registration, go to incose-la.org

Town Hall Meeting
More than your usual town hall meeting!
Date: January 10, 2017, 5:30 p.m. to 8:30 p.m.
The Daily Grill at the Westin LAX
5400 East Century Boulevard, Los Angeles
Registration required:
http://events.constantcontact.com/register/event?llr=l4ihvgeab&oeidk=a07edert9514f463c15
Cost: FREE
valet parking not included

International Workshop
January 28 — 31, 2017
Torrance, California
Go to incose.org/IW2017/home for cost and other details

Chapter Soirée at the International Workshop
Speaker: America Sectors President Dr. Steve Dam
Tuesday, January 31, 2017
6:30 p.m. to 8:30 p.m.
Torrance, California

First Quarter Strategic Planning Meeting
February 11, 2017
California Institute of California
Pasadena, California

Conference on Systems Engineering Research (CSER 2017)
Date: March 23 — 25, 2017
Location: The Crowne Plaza Hotel in Redondo Beach
See article on page 1 for more details

For more information on these and other events of interest in the Los Angeles area, look for a Reflector Notice in your email, and check the Chapter website: incose-la.org
Also like us on facebook!