



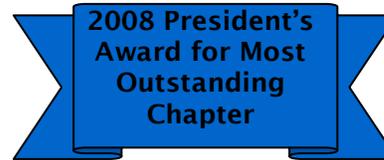
NEWSLETTER



2002, 2004-11



2003



UPCOMING EVENTS

For more details on Chapter-sponsored events and registration, go to <http://www.incose-la.org>

February Speaker Meeting and Tutorial: Error Prevention — Why Smart People Do Dumb Things and How to Avoid the Same Mistakes

Speaker: Jay Hopkins,
of the Error Prevention Institute
Article on page 3

Speaker Meeting Date and Time: Tuesday, February 12, 2012
5:30 p.m. – 7:45 p.m.

Where: Booz Allen Hamilton, LAX Office

Tutorial Date and Time: Saturday, February 16, 2012,
9:00 a.m. – 4:00 p.m.

Where: Booz Allen Hamilton, LAX Office

Conference on Systems Engineering Research

When: March 19 – 22, 2013

Where: The Georgia Tech Global Learning Center,
Atlanta, Georgia

Go to <http://cser13.gatech.edu> for additional details

Mini-Conference 2013 SATURDAY, MARCH 16, 2013

Another INCOSE-LA Tradition
An Opportunity to Learn, Network, and Share
(Without the Travel)

At the March Mini-Conference, three diverse tracks will provide opportunities for you to learn, network, and share what you know and don't know about systems thinking; recruiting, interviewing, and transitioning; and, at "SECamp," that "hot" subject you just have to talk about.

Track 1: Using Systems Thinking: Systems thinking is the process of understanding how things influence one another within a whole. It is a powerful perspective for understanding reality that emphasizes the relationships among a system's parts, rather than the parts themselves. When applied to a system within the context of its environment, systems thinking often uncovers emergent behavior and highlights potential unintended consequences. It does not matter if that system is one of laws, technology, procedures, policies, processes, society, or culture.

An important aspect of systems thinking is that it deals with the changes caused by the existence of a system. As systems engineers we are in the business of implementing change. The tools we have to understand the wider aspects of change wrought by a new system on the environment and vice versa have been somewhat limited. Combining systems thinking and systems engineering can help us implement more efficient and effective systems.

If you understand what has been said in the two previous paragraphs, share your understanding—**be a presenter**. If you have applied systems thinking, share your experience—**be a presenter**. If you have a problem which might be helped by systems thinking, share it and your expectation, then stand back and hear what other participants can tell you—**be a presenter**.

Presentations will be limited to thirty minutes, including questions and answers. To become a presenter, register on-line and email a one-page-or-less proposal of your presentation to the Program Chair, Richard Emerson, at remerson9@gmail.com. Do it now before you have a chance to change your mind. Definitely do it before February 28, 2013.

(Continued on page 12)

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<http://www.incose.org/membership/valueofmembership.aspx>

2012 — The Year in Review

By John Silvas



It is with honor and a great sense of pride that I conclude my term as president of the Los Angeles Chapter of INCOSE. Honor because of the opportunity to lead and represent such a great group of volunteers that have worked hard to make 2012 another great year for our members. I am very proud of our collective efforts over the past year and am confident that we are poised to have another outstanding year in 2013, especially given the promise the slate of 2013 chapter officers represents. I have learned a lot this past year as president that will benefit me

for many years to come, and for that I am very grateful.

At the beginning of the year, I laid out ten priority focus areas for the Chapter leadership to focus on in 2012, and I am happy to report that we made significant progress in nine of ten areas and anticipate achieving the tenth (attaining the Chapter Gold Circle Award for excellence and value to our members) shortly after the new year. The 2012 focus areas, and a sampling of the team's accomplishments, are noted in the table below.

The most significant takeaway for me this past year was the passion of the Chapter's leadership regarding the quest to ensure

the maximum value to our members, especially in these tough economic times. To make Chapter activities more available and attractive to existing and potential members, we spent a significant amount of time in the weekly Board of Director teleconferences and quarterly strategic planning meetings examining new ideas, understanding their economic impacts, and prioritizing which ones we could implement in the near-term. These ideas and decisions ranged from monthly Speaker Meeting free admission for students and retirees to generous budgets for Student Division start-up funds to approval of the much reduced 2013 Mini-Conference sign-up fee. Pushing the economic envelope in this regard was definitely the right thing to do for our members in today's economy but will require more rigor around long-term planning to ensure the Chapter stays healthy and effective at contributing to the advancement of the systems engineering discipline.

I would like to thank the 2012 Board of Directors for their leadership, support, and perseverance in what turned out to be a great experience for me personally and a significant year in terms of improving the Chapter's value proposition for members. Now let us turn our focus to 2013 and what specifically each of us will do to advance the discipline of systems engineering (e.g., become a volunteer in the LA Chapter, submit/present a paper at a conference, or get INCOSE certified)!

I wish you all the best in 2013.

INCOSE-LA Chapter President's 2012 Priority Focus Areas	Selected INCOSE-LA Chapter 2012 Accomplishments
Provide value-added systems engineering information to our members via a full calendar of chapter events	Convened one Mini-Conference, ten speaker meetings, two tutorials, one workshop, one holiday party
Increase active participation of membership at events	Conducted interactive networking at speaker meetings, successful networking led to connections with medical industry and one member finding a new job, hosted tutorials with break-out groups, outreach to new members with welcome packages and participation instructions.
Ensure effective communications with membership	Produced eleven newsletters, provided multiple remote sites for speaker meetings, emailed numerous Reflector notices, maintained informative website and events calendar
Increase efficiency of chapter operations where possible	Moved to bimonthly newsletters with postcard meeting-information mailers in off months, added new webcast receive sites
Increase volunteerism of chapter members	Identified student division representatives, new membership chair, new networking chair
Increase collaboration with other professional societies to maximize opportunities and benefits to our membership	Conducted multiple speaker meetings with the Software and Systems Process Improvement Network, participated with other professional societies at event with Institute of Electrical and Electronics Engineers (IEEE)-Orange County and the Systems and Software Chapters Congress.
Develop mutually beneficial relationships with local universities via Student Divisions	Established two student divisions to include kick-off celebrations (University of Southern California and Loyola Marymount University)
Engage with local non-profit organizations on SE projects to include offering educational opportunities to K-12 students	Participated in local Science, Technology, Engineering, and Mathematics Education coalition programs and IEEE-Orange County Saturday K-12 Mars Rover educational program
Maintain sufficient chapter financial reserve but consider additional expenditures that may increase value to members	Provided student division start-up budgets and some travel allowance for chapter officers to attend local conferences and the international INCOSE workshop and symposium
Attain Chapter Gold Circle Award	We believe we have sufficient points but will need to wait and see.

January 2013 Town Hall Meeting

By Jorg Largent

On January 8, 2013, the INCOSE Los Angeles Chapter hosted a meeting to install new officers, to present awards, and to discuss the future of the Chapter in 2013. More than twenty members attended the meeting hosted at the Booz Allen Hamilton facility in west Los Angeles.

The officers installed were Eric Belle, president; Mike Wallace, vice-president; Paul Cudney, secretary; Harvey Soldan, treasurer; Sam Bertic, director of membership; Shirley Tseng, director of programs; DeAnna Regalbuto, director of communications; and John Silvas, past president.

Awards were given to Shirley Tseng, Paul Cudney, Nehal Patel, Jorg Largent, Azad Madni, and Beth O'Donnell. Shirley

Pictures from the meeting and the charts presented at the meeting can be viewed at the Los Angeles Chapter site on INCOSE Connect

was given a Special Service Award for stepping in and keeping things going for Programs Director Michael Kim when circumstances necessitated Michael's withdrawal from the Board of Directors. Paul Cudney was recognized for the yeoman's job he has done

over the years as the Chapter's membership director, an echo of the recognition given Paul at the International Symposium in 2011. Nehal Patel was recognized for the energy and organizational skills she brought to the many networking events hosted by the Chapter throughout the Los Angeles area.

The Susan B. Ruth Award for Outstanding Long-Term Service was given to Azad Madni for his service to the Chapter as well as the profession. The President's Award for Outstanding Service was given to Beth O'Donnell for her tireless attention to the myriad details she attended to behind the scenes to keep the Chapter functioning and running well.

Special recognition was given Mike Wallace (conference management chair) and Bruce Riggins (technical program co-chair) for their leadership and tireless efforts to facilitate the successful and well-attended 2012 Mini-Conference.

In addition to the officers cited, the following served on the Board of Directors in 2012: Josh Sparber and Michael Maar took care of chapter recognition; Susan Ruth continued in her role as Reflector manager; Scott Grant was the site coordinator for the Control Point Corporation in Gaviota; Michela Munoz-Fernandez was the site coordinator at the Jet Propulsion Laboratory in La Canada; and Mike Wallace was the site coordinator for the Antelope Valley. Jose Garcia Jr. worked industrial relations; John Silvas and Jessica Mubaraki were the Chapter's liaison with the University of Southern California student division; and Nehal Patel and Scott Birtalan were our liaisons with the Loyola Marymount University student division. Collette Kurtz was the new member ambassador for the Chapter.

Dr. Madni, who officiated over the installation of the new officers, concluded the installation with a few brief remarks regarding the challenges faced by the profession and by the

(Continued on page 13)

February Speaker Meeting and Tutorial

Error Prevention — Why Smart People do Dumb Things and How to Avoid the Same Mistakes



Jay Hopkins of the Error Prevention Institute will be speaking at the February 12, 2013 Speaker Meeting and conducting a tutorial on February 16, 2013. The topic will be the same for both events, with the tutorial being the more comprehensive.

The Speaker Meeting will begin at 5:30 p.m. and is free for members; admission for non-members is \$10.

The tutorial runs from 9:00 a.m. to 4:00 p.m. and costs \$25.00 for INCOSE members and \$35.00 for non-members. The tutorial will be hosted at the Booz Allen Hamilton facility near LAX.

Jay is founder and president of the Error Prevention Institute. He has provided unique training in quality, safety, and overall effectiveness for over 25 years to corporations, medical personnel, pilots, government agencies, and fire and police departments. His work with several aerospace firms has resulted in a significant decrease in incidents of damage to flight hardware, along with improved operational effectiveness. Jay received his B.A. in social psychology from Lehigh University. He is a certified flight instructor and airline transport pilot, and was involved in the development of Crew Resource Management in the early 1980s.

Jay's presentation will address the premise that, while the aerospace industry has worked hard to eliminate human error, errors still occur, often caused by very experienced employees.

So why do smart people do dumb things? There are traps of human nature that lead to the human factor in incidents, accidents, and failures. Traditional aerospace quality and safety programs usually do not address these basic issues. Even worse, the typical aerospace culture often strengthens these traps in a misguided attempt to reduce errors. This presentation will:

- Identify the traps of human nature leading to aerospace incidents, accidents, and failures.
- Provide aerospace examples of how those traps work.
- Provide practical tools to avoid or deal with those traps.
- Report the results of error prevention training with aerospace corporations.
- Identify aerospace safety initiatives that actually lead to more incidents and accidents.
- Identify aerospace cultural issues that are contributing to the problem.
- Examine the relationship between safety and quality and how together they can enhance overall effectiveness.

For more details and registration information, go to <http://www.incose-la.org>

Our New Look: The Re-architected Newsletter

By Jorg Largent

One of the changes instituted last year by the Board of Directors was to change the look of the *Newsletter* and to switch to publishing it every other month. The changes to the *Newsletter* itself are to make it more colorful and attractive and to feature more articles on systems engineering—articles on theoretical systems engineering and on topics in the local public domain—written by members of the Los Angeles systems engineering community.

The Board of Directors also directed a shift in the distribution of information on speaker meetings, tutorials, networking events, and Chapter-sponsored conferences to the Chapter's webpage. The webpage will provide up-to-the-minute details and the registration link. The *Newsletter* will continue to publish abbreviated announcements and the Chapter will mail out postcard notices for meeting in months for which we will not be publishing the *Newsletter*.

The important question is, What do you, the members, think? Please let us know by sending your comments to the editor at jorg.largent@incose.org.

Your submissions to the *Newsletter* are also encouraged. Interested in writing a 200-to-500-word article on your systems engineering experience? If so, please send your submission to the editor at jorg.largent@incose.org. Inputs from you, the members, are a way in which we, the systems engineers of Los Angeles, can work together to further our profession.

Enjoy Your Membership by Getting Involved

When you take on a role, small or large, you will have an opportunity to get to know your fellow INCOSE members better and to contribute to the success of the chapter. Karen Miller has been appointed to help you connect with the people and events that matter to you. Send your name and contact information to Karen (Karmil888@aol.com) and she will forward it to the person in charge. Here are some of the many possibilities:

- Conferences and events—presenter, planner, helper
- Monthly meetings—planning, greeting, food, site coordinator
- Education—tutorials, engineering week, certification, local and school opportunities
- Membership—company recruitment, publicity
- Communication—newsletter, articles, social networking

In addition to the volunteers database, a speakers database matches members who wish to speak to other organizations and schools with requested topics. For example, two of our members, Karen Miller and Nehal Patel, will be speaking to the students at Westchester High School, a new Aerospace Magnet for Los Angeles schools. These talks are designed to inspire students to study engineering.

Remember, send your area of interest and expertise to Karen so requests for speakers may also be forwarded to the right people.

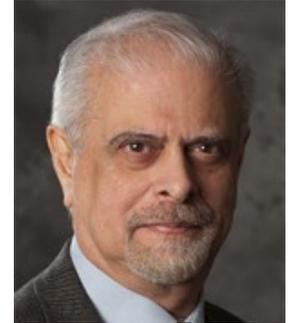
Dr. Azad Madni Receives Award for Pioneering Systems Engineering

In October 2012, the American Association for the Advancement of Science (AAAS) council elected Dr. Azad Madni as a Fellow of the AAAS. Dr. Madni will be recognized for his contributions to science and technology at the Fellows Forum to be held on February 16, 2013 in Boston.

Dr. Madni is a professor of industrial and systems engineering at the University of Southern California Viterbi School of Engineering. Professor Madni is also an INCOSE Fellow and a long-time member of the Los Angeles Chapter. He was selected for “pioneering contributions to systems engineering and related research and education, particularly through modeling, simulation and gaming technologies.”

An announcement on the Viterbi website, dated December 7, 2012, provided additional information: “Azad Madni, Professor of Industrial and Systems Engineering and Director of the Viterbi School of Engineering's Systems Architecting and Engineering Program, was elected AAAS Fellow for his multidisciplinary contributions to extending the frontiers of systems engineering and for advancing the theory, methodologies, and capabilities required for engineering complex systems. In addition to his faculty role at USC Viterbi, he holds appointments at the Keck School of Medicine and Rossier School of Education. He is also the founder of Intelligent Systems Technology, Inc., a high-tech firm specializing in game-based simulations for education and training.”

The American Association for the Advancement of Science is an international nonprofit organization dedicated to advancing science around the world by serving as an educator, leader, spokesperson, and professional association. In addition to organizing membership activities, AAAS publishes the journal *Science* as well as many scientific newsletters, books and reports, and spearheads programs that raise the bar of understanding for science worldwide. Founded in 1848, AAAS serves some 261 affiliated societies and academies of science, serving 10 million individuals. *Science* has the largest paid circulation of any peer-reviewed general science journal in the world, with an estimated total readership of 1 million.



From a mathematical perspective, you can approach data from two general directions. One approach is inductive (drawing a generalization from the data); the other approach is deductive (explaining data from a generalization).

“Beginning Math Concepts for Game Developers,” John P. Flynt, Ph.D.

A Few More Questions About the California High-Speed Rail Project

By Dr. Bohdan "Bo" Oppenheim

Disclaimer: I have traveled on high-speed rail in several counties and am a great enthusiast of the system, convinced that it will improve California economy and travel convenience as dramatically as the federal highway system did during Eisenhower era.

But are we doing it right? An article in the May 2012 *Newsletter* raised doubts whether enough systems engineering has been applied to the California High-Speed Rail (HSR) project. Modern systems engineering should include comprehensive Lean considerations; otherwise the program may degenerate into a bloated defense-like [Government-run] program. Evidence already abounds that this may be the case. The table below compares a number of HSR projects from around the world, including the Japanese Blue Line, the French TGV, the German HST, and the Spanish AVE. The last row of the table shows the projected California HSR. The table lists the year built, distance covered, and cost in millions of dollars per mile. The California HSR is three times more expensive (\$156 million per mile) than the most expensive Spanish Madrid–Valladolid line of comparable distance (\$56 million per mile), in spite of the following considerations:

- The labor costs are very similar in all countries illustrated, and the labor in Japan, France, Germany, and Spain is heavily unionized. Therefore labor should not be a contributor to such a vast difference in cost.
- Ninety percent of the route in California is desert or farmlands, and the rest is low urban density. In contrast, many of the quoted routes travel through heavily urban areas, some with vastly higher density. Surely the cost of

acquiring land for the rail should be vastly cheaper in California than those other instances.

- The Japanese Blue Train operates in intense earthquake area, and contains stringent earthquake-proofing systems. This factor, therefore, should not contribute to cost more than it did in Japan.
- The newest French TGV Méditerranée, even with seven long viaducts (17.2 km) and one long tunnel (12.8 km), still cost only \$19 million per mile. Several European rail lines go through the Alps. Surely the California HSR route is easier to build than the one in the Alps. Therefore, this should not contribute to the cost differential.

This author concludes that the difference in cost cannot be explained by rational reasons and must be attributed to much more expensive management costs and company profits. These should be questioned.

Another even more dramatic aspect is the time to complete the project. The estimated date for California HSR is now 2029 (California HSR Authority), 17 years from the project approval by the California and federal governments in 2012. In contrast, the longest time to construct any of the systems listed in the table was eight years. Why such a difference?

I suggest that perhaps we could have a fantastic and badly needed HSR in place much sooner and much cheaper if we hired one of those foreign companies to do the job for us, with provision that they would have to hire California labor and engineers.

Dr. Oppenheim is a Professor of Systems Engineering at Loyola Marymount University and a renowned pioneer in the applications of Lean to systems engineering. Dr. Oppenheim can be contacted at boppenheim@lmu.edu.

Differing opinions are welcome, as are all discussions of systems engineering topics. Please send your input to the Newsletter editor (jorg.largent@incose.org)

Comparison of HSR in Different Countries

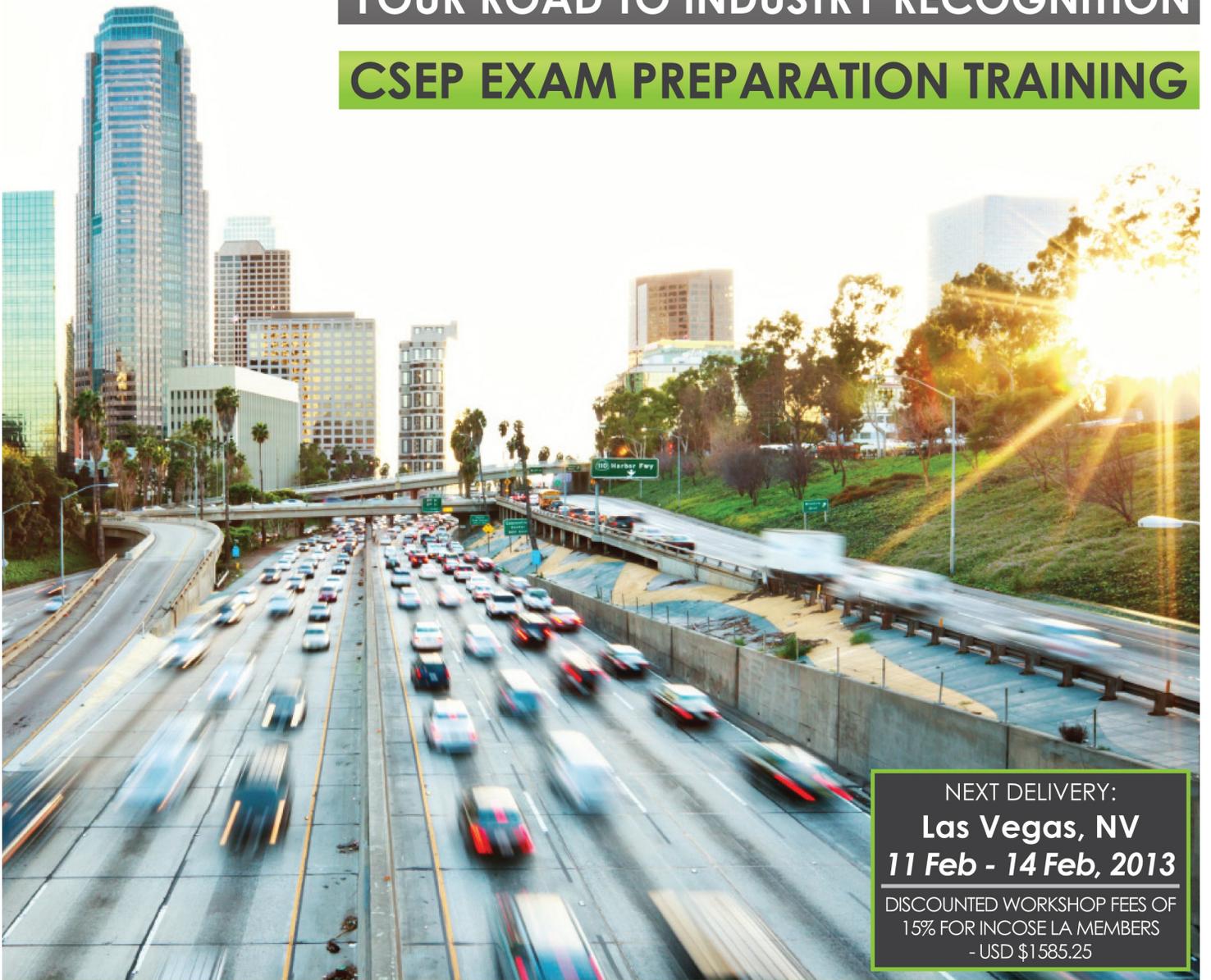
Country	Route	Year Built	Distance (miles)	Cost (\$million/mile)
Japan Blue Line	Tokaido	1964	347	2.6
	Sanyo	1975	389	7.6
	Tohoku	1985	335	33
	Joetsu	1985	209	32
France TGV	Paris–Lyon	1981	264	7
	TGV Méditerranée	2001	155	19
Germany HST	Hanover–Würzburg	1995	182	37
	Mannheim–Stuttgart	1995	60	37
Spain AVE	Madrid–Valladolid	2007	112	56
	Córdoba–Málaga	2007	96	40
	Madrid–Barcelona	2008	386	28
California	Los Angeles–San Francisco	proposed	450	156

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2013 DELIVERY DATES

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San Diego, CA	11 Mar - 14 Mar
Las Vegas, NV	22 Jul - 25 Jul
Los Angeles, CA	11 Nov - 14 Nov
Las Vegas, NV	2 Dec - 5 Dec

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**International Council on
Systems Engineering (INCOSE)**
Los Angeles Chapter
is proud to host the



2013 Mini-Conference

Saturday, March 16th, 2013 – 7:30 am to 5:00 pm

Loyola Marymount University
1 LMU Drive, Los Angeles, CA 90045

Systems Thinking - Career Development - SECamp

Your 2013 Networking, Learning, Career Development opportunity!

This **3 track** Mini-Conference is priced to enable everyone to expand your SE horizons with information sharing, learning, & career development.

Track 1 – Using Systems Thinking

Systems Thinking is the process of understanding how things influence one another within a whole. Combining Systems Thinking and systems engineering can help implement more efficient and effective systems and lessen unintended outcomes.

Track 2 - Recruiting, Interviewing and Transitioning

Four sessions addressing an aspect of the search for a job and career advancement.

- Session 1 will be a talk by one or more human resources specialists in companies that hire systems engineers for diverse positions
- Session 2 will be talks by company recruiters
- Session 3 will operate like a speed interviewing session
- Session 4 will be talks by systems engineers who have transitioned from traditional jobs to freelance consultants

Track 3 – SECamp

“Un-conference” format an opportunity to allow SE Community to share best practices with presentations, panel discussions, or tutorials as voted on by attendees. Bring your newest ideas & thoughts and let the community discuss it. Un-conference format is based on open, community based process with open calls & open voting.

Presenters - for all three tracks, Exhibitors and Sponsors are being solicited, if interested please contact Harvey Soldan or Richard Emerson: mini-conf@incose-la.org.

Plan on attending this special one-day event - an opportunity to listen, learn, discuss, and share with fellow professionals.

***Continental
Breakfast &
Lunch included***

***Exhibitors,
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Registration : Low fee for all : **\$35**

Register before March 15th, 2013

Cancellation fee of \$10 applies for registrations cancelled up through March 9th, 2013; No refund for registrations cancelled after March 9th, 2013.

Substitutions may be made.

Our Sponsors



See our *Newsletter* and check our website www.incose-la.org for more details.

PICTURES OF INCOSE LA IN ACTION!

Past Mini-Conferences



At right, 2011 President Beth O'Donnell, left, and 2012 President John Silvas planning for the future at a Strategic Planning Meeting



At left, pictures of the Kick-off Meeting of the University of Southern California Student Division

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UPCOMING DELIVERY DATES - 2013

Requirements Analysis & Specification Writing	Las Vegas, NV	28 Jan - 1 Feb
Systems Engineering	Las Vegas, NV	11 Feb - 15 Feb
Software Development Principles & Practices	Las Vegas, NV	11 Feb - 15 Feb
Systems Engineering Management	Las Vegas, NV	4 Mar - 8 Mar
Systems Engineering	Las Vegas, NV	18 Mar - 22 Mar
Systems Engineering Management	Austin, TX	29 Apr - 3 May
Systems Engineering	Las Vegas, NV	3 Jun - 7 Jun
Systems Engineering Management	Washington, DC	12 Aug - 16 Aug
Requirements Analysis & Specification Writing	Las Vegas, NV	26 Aug - 30 Aug
Cognitive Systems Engineering	Las Vegas, NV	2 Sep - 6 Sep
Systems Engineering	Las Vegas, NV	23 Sep - 27 Sep
Software Development Principles & Practices	Las Vegas, NV	23 Sep - 27 Sep
Software Development Principles & Practices	Washington, DC	30 Sep - 4 Oct
Systems Engineering	Boston, MA	21 Oct - 25 Oct
Systems Engineering	Las Vegas, NV	2 Dec - 6 Dec
Systems Engineering Management	Las Vegas, NV	2 Dec - 6 Dec

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The Board of Directors wishes to welcome the following new members to the Los Angeles Chapter of INCOSE.

Note: The information listed below is from the member directory and is based upon your initial membership application. If the information is not correct or complete, then please access the member directory (at www.incose.org) to update your information.

Name	Title	Company
Poulomi Chatterjee	Graduate Student	Loyola Marymount University
Jonathan Losk	VP, Systems & Clinical Engineering	St. Jude Medical
Paul K Davis, PhD	Principal Senior Researcher	RAND Corporation
Robert (Bob) S Jacobs	Program Manager	Perceptronics Solutions, Inc
Ravi Nori	Business Development	Northrop Grumman Corporation
Donna Nystrom	Sr. Engineering Specialist	The Aerospace Corporation
James (Obie) W Obermayer	Vice President - Sales & Marketing	Vitech Corporation
Michael T Martin	Systems Architect/Project Manager	Northrop Grumman Corporation
Michael (Mike) J Todaro, Jr		
Brendon D Perkins	Program Manager	Science Applications International Corporation
Jeffrey K Pon	System Engineer	Northrop Grumman Corporation
Matthew (Matt) C Spencer	Systems Engineer	Northrop Grumman Corporation
Ibrahim M Aljuhaiman	Graduate Student	Loyola Marymount University
Abdulrahman Almhana	Graduate Student	Loyola Marymount University
David M Dinette	Graduate Student	Loyola Marymount University
Matthew Mycroft	Graduate Student	Loyola Marymount University
Julio C Ramirez	Graduate Student	Loyola Marymount University
Dana-Nicole B Samuel	Graduate Student	Loyola Marymount University
Alisa E Stimage	Engineering Planning	Northrop Grumman Corporation
David Alvidrez	Engineer	DIRECTV
Mary Lynn Ante-Hecht	Systems Engineer	TASC
Samuel Griffin	Principal Systems Specialist	Linqest Corporation
David W Iddings	Engineering Director	L-3 MariPro
Dennis K Van Gemert		
Kayla A Hardie		
Robert (Bobby) N Brooks, Jr	Senior Engineer	Jet Propulsion Laboratory

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Stay Connected

Get the latest on INCOSE-LA happenings in the Reflector e-mails

If you wish to be placed on our e-mail distribution, contact Susan Ruth at susan.c.ruth@aero.org

Systems Engineering

Online Certificate Program



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- Complete the entire program online
- Transfer specific coursework towards the Professional Master's Degree in Applied Systems Engineering (PMASE) from Georgia Institute of Technology
- Improve your organization's operational efficiency
- Prepare for INCOSE certification



Courses start April 1, 2013

- Foundations of the Systems Engineering Process
- System Design and Integration
- Systems Engineering Tools and Methods



For more information:

Julie Pai, Program Representative
julie.pai@uci.edu • (949) 824-6333



(Continued from page 1)

If you have been thinking about this for some time, email a abstract or a draft of the presentation. You will be informed of your presentation's acceptance by March 8, 2013, at which time the format will be provided. Your final presentation will be due by March 12, 2013.

If those two introductory paragraphs above are intriguing, but confusing, or sound like an answer to your current longing—**be a participant**. To become a participant, register online and indicate that you intend to attend Track 1—Using Systems Thinking. If you are not sure, register regardless—we have more opportunities.

Track 2: Recruiting, Interviewing, and Transitioning: Perhaps you are looking for employment or contemplating changing employment. This track is for you. It is divided into four sessions, each addressing an aspect of career advancement and the search for a job. To become a participant in this track, register online, indicate that you wish to attend Track 2, and specify the discipline of systems engineering in which you are seeking employment. The earlier you register the more likely you will be able to pair you with recruiters.

To become a presenter, register online and email your biography and a short description of how you wish to participate to Program Chair Richard Emerson at remerson9@gmail.com. See the four sessions below for details.

Session 1. Approaches, tips, and techniques for preparing yourself for employment and the search for employment will be presented by human resources specialists from companies that typically hire systems engineers. Following the presentations there will be enough time for questions and answers. We are planning some time for the participants to make real-time changes to their resumes based upon what they have learned in preparation for the following speed-interviewing session.

Session 2. In anticipation of Session 3, recruiting line managers familiar with their company's needs will describe those needs, their company, and their company's products. Participants will have the opportunity to ask questions of the recruiters. There will a short break for everyone to marshal their thoughts and prepare for "Speed Interviewing" (Session 3).

Session 3. This session will operate like "speed dating": each participant will have the opportunity to speak with the prospective employers for three minutes and then move to the next employer. **For this reason it is very important to indicate your desire to join this track at registration.** We encourage each of you to participate in this activity whether or not you are actively seeking employment. The experience will be useful in all areas where you wish to "sell yourself."

Session 4. The rules of employment are changing. The opportunity to find a "lifetime" job is decreasing. In a sense, all of us are becoming the CEO of "Me, Incorporated." Presentations by systems engineers, either individually or as a panel, who have moved in their careers from being employees to being either independent consultants or freelance systems engineers will provide a look into alternate employment opportunities.

Register early and indicate you desire for this track.

Track 3: "SECamp": This track is for the adventurous. It is an opportunity for you, the participant, to define the conference. It is an opportunity to share systems engineering topics such as best practices, research, or application methods. It is also an opportunity to broach topics which need further development.

The un-conference format is based on the Open Source Software model "BarCamp." It is a community-based process of open calls and selection of presentations by open voting of the attendees. This format lends itself to being an opportunity for systems engineers from industries other than aerospace (such as transportation, energy management, biomedical systems, and social systems) to share their perspectives and challenges in applying the process.

A proposal may be on any topic and in any style, be it a presentation, panel discussion, or tutorial.

We encourage anyone with an idea to submit it. We particularly encourage first-time speakers with a desire to share their experiences in systems engineering, experienced professionals with lessons they have learned, and researchers to bring their latest findings. Bring your newest ideas and thoughts and let the community discuss them. Even if you are looking for a topic to be presented—something that you need in your work—propose it and ask for a presenter.

SECamp is a participant-centric track that focuses on best practices in every aspect of systems engineering. If you have a success story using a method, a technique, an approach, or a practice that produced good results, we would like to hear from you. If you have experience of a less-than-sparkling type, come and share what doesn't work. While a bit touchy, these cautionary tales of projects gone awry are as helpful as successes, perhaps more so. The purpose is to help all levels of systems engineers, from newbie to practicing engineers and on through management, to learn how to adopt the methods, technologies, and practices of systems engineering to increase productivity and quality.

Presentations will be limited to thirty minutes including questions and answers. Panels or tutorials may be allocated up to an hour. To become a presenter, register on-line and submit a one-page or less summary of your proposal to the Program Chair, Richard F. Emerson (email: remerson9@gmail.com) by February 28, 2013. The "SECamp" voting, by registered attendees will occur between February 15 and March 1, 2013. The selected presentations will be announced by March 3, 2013, and are due by March 12, 2013. The presentation format will be provided with the selection notification.

To become a participant in this session, register online and vote for the topics you are interested in. You are encouraged to vote for multiple topics.

If you haven't decided which track you want to attend, register anyway. The opportunity for networking and exploration will be outstanding.

THE HOLLYWOOD MODEL OF SYSTEMS ENGINEERING — DARE WE TRY?

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(Continued from page 3)

Chapter.

Dr. Madni commented that one of the things he has noticed is a tremendous surge in interest in systems engineering on the part of members of other disciplines — particularly in non-aerospace applications such as health care. Indeed, other organizations are branding themselves as “systems engineering,” but their enthusiasm is causing confusion because often they do not fully appreciate the depth and complexity of the discipline. He challenged the practitioners in attendance to try to determine the real value proposition. He noted a comparison between aerospace.— in particular, projects associated with the Department of Defense — and non-aerospace projects. A challenge was to look and see how people do systems engineering in other professions and applications. Dr. Madni noted that members of the film industry routinely complete projects on time and within budget, thereby posing the question, What do they know that we don’t?

Dr. Madni also discussed some of the future challenges that face the systems engineering profession. Humans don’t multitask well; how should “human” systems (“meat servos,” in flight test parlance) interface with new systems that are resilient and adaptive to a degree that challenges the human working with the system? The human-machine integration is the weakest link in adaptation, said Dr. Madni. One concept he mentioned was that of designing systems that were resilient rather than 100 percent fault protected. He noted that one of the challenges for the application of the systems engineering process in the face of modern technology is the need to play out systems in complex scenarios.

Following Dr. Madni’s remarks, Shirley Tseng gave an update on preparations for the Chapter’s Mini-Conference. (For more information, please see the article starting on page 1 of this edition.)

The town hall portion of the meeting discussed actions and projects the Board of Directors could undertake to improve the value of INCOSE membership, and, in particular, Chapter membership to the systems engineers in the Los Angeles area. One suggestion was to study the geographical distribution of the systems engineering community and to then consider hosting speaker meetings and other Chapter events at locations that are more convenient for systems engineers in other areas, especially those in non-aerospace industries.

The Board of Directors appreciates the inputs provides and welcomes other comments. The inputs received at this meeting were to be assessed at the Strategic Planning Meeting scheduled for late January.

**INCOSE 23rd. International Symposium
Philadelphia, Pennsylvania
June 24 – 27, 2013
See you there!**

Need a volunteer? Tap into the INCOSE-LA volunteer databank!

Many of the members of INCOSE-LA have volunteered their services to help people to better understand and apply the systems engineering process. Members of this chapter volunteer their time and talent, speaking to groups about the process and mentoring students in the application of systems engineering in projects such as robotics and rocketry. The Chapter is ready to help with activities such as:

- Understanding the profession
 - Learning about systems engineering as a career and career opportunities
 - Mentoring student projects
- If your group, or if you know of a group that would benefit, please contact the Chapter’s volunteer coordinator, Karen Miller at Karmil888@aol.com.

In contacting Karen, please let her know:

- what you would like the volunteer to do (speak, mentor, talk about the profession as a career, et al)
- when the volunteer would be needed, and,
- The contact information of the person with whom the volunteer should coordinate.

Lunch and Learn Investment Planning

Wells Fargo Advisors are continuing their program of financial planning as a service to members of the Los Angeles Chapter. Topics will include looking at 2013 changes, investment planning, consolidating retirement accounts, and working to develop your plan. All attendees will receive a complementary one hour consultation with a financial advisor to go over specific questions or concerns. The first will be held Saturday, February, 2013 from 12:00pm to 2:30p.m. at the Wells Fargo Advisors office at 2321 Rosecrans Avenue in El Segundo. A second offering is scheduled for Saturday, March 2, 2013, in Irvine and will cover a different set of topics, and a third is scheduled for Saturday, April 6, 2013, in San Diego.

RSVP with Joel Miller at (714) 940-3128 or joel.miller@wfadvisors.com.

INCOSE-LA Chapter NEWSLETTER

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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.

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