



NEWSLETTER



2002, 2004-11



2003



2008 President's Award for Most Outstanding Chapter



Election Special!



UPCOMING EVENTS

Election of Chapter Officers

December, 2012

Article on page 1, Biographies begin on page 2

2013 Mini-Conference

Saturday, March 16, 2013

Loyola Marymount University

More information on page 6!

INCOSE-LA and Loyola Marymount University Student Division mixer

Saturday, December 1, 2012, 5:30 p.m. to 8:00 p.m.

contact Luke.Leffingwell@apmterminals.com for details

December Speaker Meeting

The Business Case for Systems Engineering

Wednesday, December 5, 2012, 5:30 p.m. to 8:30pm.

The Boeing Company, Huntington Beach

See the INCOSE-LA website for details

Chapter Holiday Party

Saturday, December 8, 2012, 3:00 p.m. to 7:00pm.

Lido's in Manhattan Beach

See page 4 for details

(Continued on page 5)

Voice Your Choice!!

The transition from 2012 to 2013 quickly approaches. Your 2012 Board of Directors (BoD) calls on you, the members of the Chapter, to take time to read your slate of candidates for the 2013 BoD. These candidates are presented to you on the pages that follow.

For those who are not familiar with the process of our Chapter elections, an explanation: the BoD consists of a "voting body" and an "appointed body." The voting body consists of ten positions, five of which are the "Executive Officers" and five of which are the "At-large Directors." The Executive Officers hold one-year terms while the At-large Directors hold two-year terms. The two-year terms are staggered to preserve Chapter knowledge from year to year. The appointed body consists of managers and chairpersons who are recruited to execute specific functions such as producing the *Newsletter* or the *Reflector*. Each functional area generally falls under the oversight of one of the directors. We want to stress the importance of the appointed body: it is the primary method for someone to engage in the operations of the Chapter and to progress into a position of the voting body.

An election committee reviews a preliminary list of names, which is constructed from the recommendations made by current and past officers, directors, chairpersons, and managers. Recommendations are based upon many factors that range from participation (speaker meetings, tutorials) to volunteering in just about any capacity, and who is willing to volunteer on the Board. As Paul Cudney, our Membership Director, so eloquently explained, "Serving on the Board is an excellent, low-risk method of gaining direct job-related experience." The committee then decides upon a slate of candidates.

It is now up to you, our members, to vote for the 2013 BoD. We proudly introduce to you our slate of candidates for next year's President, Vice-President, Secretary, Treasurer, Director of Programs, Director of Communications, and Director of Membership. Their biographies begin on page 2.

Inside This Edition

Features

- Election of Board of Directors 1
- Meet the Candidates — Biographies 2, 3, 4
- Systems Thinking 5

Education/Conferences

- Chapter Holiday Party 4
- Mini-Conference 2013 6

Membership

- New Members 7

Whom to Contact

- INCOSE-LA Board Members 8

HOW TO VOTE:

Go online at www.incose-la.org.

Voting period: December 1-December 30

Eric Belle, President



Eric Belle currently works as a Systems Engineering Consultant with clients in the aerospace and defense sector in southern California. His multinational career encompasses nearly 25 years of systems related activities in eight countries, and covers the entire product life cycle. In a somewhat unconventional manner, experience was first gained at the tail end of the product life cycle as a field and

systems support engineer before taking on assignments as a manufacturing manager, integration and test engineer, and finally roles at the system design level. Industries in which this experience was accumulated include aerospace and defense, automotive, telecommunications, consumer products and even an early stint as a student intern in oil and gas.

Recent assignments include a number of years with Raytheon Space and Airborne Systems as a functional manager associated with a variety of advanced technology sensor systems, and as an integration and test coordinator for a Japanese space based electro optical sensor. In Barcelona, Spain, he was responsible for implementing the strategic aim of a German automotive supplier by establishing a secondary source of electronic circuit boards by increasing production to 100,000 units per month while simultaneously managing electronics production in the facility. Other notable assignments include on-site field support for a surveillance radar system in Saudi Arabia during Operation Desert Storm, a consulting project to encourage purchasing efficiencies between the Austrian and Hungarian divisions of Nestle prior to the enlargement of the European Union, and an analysis and redesign of lighting for industrial air conditioning plants for the Arabian American Oil Company.

Eric has been a member of INCOSE since 2002, during which time he has taken on increasingly active roles at both the chapter and international levels. After starting out as the Newsletter Editor of the INCOSE-LA chapter, he went on to serve as the 2009 INCOSE-LA President. Most recently he is in the process of completing his two year term as a Member of the INCOSE Board of Directors, during which time his portfolio dealt with attending to the interests of its members and chapters. Eric has a Bachelor of Science in Electrical Engineering from the University of California, Los Angeles, a Master in Business Administration from the University of Texas at Austin, a Diplom Kaufman (German Business Degree) from the Wissenschaftliche Hochschule fuer Unternehmensfuehrung Koblenz and most recently obtained a Master of Science in Systems Architecting and Engineering at the University of Southern California.

As President his goal is to leverage his knowledge and understanding of the INCOSE organization in a manner that

(Continued on page 3)

Mike Wallace, Vice-President



Mike Wallace is a Systems Engineering Manager with over 26 years experience in the aerospace industry. His experience includes various technical positions from project engineering, to project management and systems engineering. Mike works for Northrop Grumman Corporation in Palmdale, and has been with the company for eight years. Mike's

experience at Northrop Grumman includes managing the B-2 Technical Integration Integrated Product Team, managing the B-2 Weapons System Resources, leading the B-2 Defensive Management System Modernization team through the early verification effort, and providing system engineering support on the B-2 Extremely High Frequency II program.

Prior to working for Northrop Grumman, Mike worked for Teledyne Electronics Safety Products as a project manager, where he led a team of engineers from various engineering disciplines in successfully developing sequencing products for the United States Navy and Air Force. Mike also served four years in the United States Air Force on active duty, plus eleven years with the United States Civil Service.

Mike is an adjunct mathematics instructor at the Antelope Valley College in Lancaster. He teaches algebra and statistics and has done so for the past eight years. Mike has also been a mentor for the Systems Engineer Associate program, established by the Northrop Grumman Aerospace Sector, and has mentored five junior engineers in their becoming systems engineers. He is currently mentoring in the Leadership Development Program established by the ConnectING, an employee resource group.

Mike joined INCOSE-LA in 2005 and has supported the chapter on several occasions. He was the registration chair for the INCOSE-LA 2007 Mini-Conference. He currently hosts the Antelope Valley remote site location for the INCOSE-LA lecture series and recently served as the 2012 INCOSE Mini-Conference Conference Manager.

Mike has a bachelor of science degree in electrical engineering, a master's of science degree in engineering management from California State University, Northridge and an engineer's degree in Industrial and Systems Engineering from the University of Southern California. Mike has also completed a Graduate Certificate in System Architecture and Engineering from USC, a certificate in systems engineering from the California Institute of Technology and a certificate in Lean Six-Sigma Black Belt from the University of Villanova.

Paul Cudney; Secretary



Paul Cudney has volunteered for the INCOSE Los Angeles Chapter since he joined INCOSE in May 2000. He was registrar for CSER-2011, twice Track Chairman at INCOSE-LA Mini-Conferences, once Secretary, and has served as Membership Director since 2004. Paul supports activities to increase the knowledge and stature of our members, and seeks to increase volunteer participation as a low-risk opportunity for direct job-related experience.

Paul retired in 2009 from Lockheed Martin as a Senior Systems Engineer. He has nearly 45 years experience in systems integration, software maintenance, test, and verification for real-time control systems involving aircraft, missiles and satellite ground systems. Starting with System Development Corporation in 1964, Paul helped update the SAGE (Semi Automatic Ground Environment) system – the first networked air defense command and control system. Among other projects, he designed and implemented the multi-computer control program for the Air Combat Maneuvering Range (you saw ACMR displays in the movie Top Gun).

Paul has been active in other technical societies, serving as Chairman of the Los Angeles Chapter of the Association for Computing Machinery (ACM), and Chairman of the ACM Committee on Chapters. Paul also has volunteered on the Steering Committees for the Southern California and Los Angeles Software Process Improvement Network (SPIN).

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
susan.c.ruth@aero.org

(Belle continued from page 2)

helps to facilitate a better understanding of how a local chapter can best serve its members while strengthening its outreach. Having recently dealt with the uncertainty facing many Systems Engineers engaged in local industries, his intention is to build upon some of the bold ideas that have been set into motion by current INCOSE-LA Board of Director members. These include taking advantage of the Chapter's strong financial position to offer extremely affordable, value-added educational and networking opportunities. A strong effort will also be made to further engage industries outside the traditional aerospace and defense industry that are increasing adapting INCOSE best practices into their respective organizations.

Harvey Soldan, Treasurer



Harvey Soldan is a Systems Engineer at The Jet Propulsion Laboratory and has over 30 years experience in NASA, military, and commercial systems. He joined JPL as a contractor in 1987 and is currently the Deep Space Network (DSN) Systems Engineer for the DSN Aperture Enhancement Project, adding new 34m aperture antennas to

the existing DSN at all three complexes around the world. Previously, he was the Deep Space Network Tracking, Telemetry, and Command Systems Engineer.

Harvey has worked on many military and commercial programs specializing in technical publications, testing, communications, and systems engineering for hardware and software intensive systems. In addition, he has worked on projects at Telos, Raytheon, Walt Disney, Avicom and Gould Navcom. Harvey is completing his second term as INCOSE-LA treasurer and is the 2013 Mini-Conference Chair.

Harvey received his B.A. from The John Hopkins University in Biology with a minor in Chemistry.

DeAnna Regalbuto, Director of Communications



DeAnna Regalbuto has been a member of INCOSE and INCOSE-LA since 2008 and has assisted with production of the chapter newsletter since 2011. She holds a Master of Engineering in Systems Engineering from Stephens Institute of Technology and a Bachelor of Science in Information and Computer Science from University of California, Irvine. DeAnna currently works on an aircraft software development program for Northrop Grumman in Redondo Beach, CA. She is

part of a small sub-team charged with making the development team at large more productive.

When asked what she hopes to bring to INCOSE-LA communications DeAnna stated, "Initially, I want to make contributing to the newsletter easier at all levels including, submitting content, proof-reading, scheduling, and production. Currently, the process is so painful, people key to publishing the newsletter have been known to burnout midyear. In a more humorous vein, I suppose my ultimate goal is just to survive the first year of my term!"

DeAnna and her husband live in Downey, CA. One of their two daughters is studying engineering technology at Cal Poly, Pomona, and the other chemistry at University of Nevada, Reno.

Shirley Tseng, Director of Programs



Shirley Tseng has experience in space operations, ground systems, spacecraft systems, satellite networks with general systems engineering, software engineering, and systems architecture. Shirley began her engineering career with satellite space operations and ground system development at General Electric (now Lockheed Martin Mission Systems).

She joined Hughes Aircraft Corporation, Space Communication to work on MILSTAR Spacecraft systems engineering and Hughes New Venture Organization to work on satellite technology and business service development on emerging satellite services, such as XMRadio and Spaceway systems. With MorganFranklin, Shirley supports customers such as NASA, the Navy, and Missile Defense Agency with advance technology support, space mission and data services development, Department Of Defense Architecture Framework and Joint Capabilities Integration and Development System development, architecture and system development, network architecture, and tool environment development. Shirley actively keeps up with many disciplines with membership and participation in numerous organizations. Shirley joined the INCOSE-LA Chapter when it was first formed and is an active member attending most meetings and tutorials. Shirley has supported the prior two CSERs with publicity support. Shirley is a graduate of the University of Pennsylvania with degrees in Systems Engineering and Wharton Economics. Shirley is also a member of AIAA, IEEE, Association of Computing Machinery, SPIN, Association of Enterprise Architects, International Association of Software Architects, and user groups Java, Cisco, ITIL, BEA, and Linux.

Sam Bertic, Director of Membership



Sam Bertic has been a member of INCOSE for almost 20 years. Starting with NCOSE San Diego in the early 90's he held the offices of President, Treasurer, and Delegate-at-Large with that organization and provided advice to the then-fledgling INCOSE-LA and its supporters at Aerospace Corp. Having attended many of the INCOSE International Symposiums and Workshops has made it possible to

develop relationships with many members from all over the U.S. and now internationally, having just attended the INCOSE International Symposium in Rome, Italy.

As Membership Director for INCOSE-LA Sam will continue to encourage membership and participation in professional activities for the systems engineers in the southern California area.

Sam Bertic's career started in Systems Engineering for NAVELX in San Diego, but with a degree in electronic engineering he soon moved into design in the newly forming field of microprocessors. Fortunately the company he was working at for nine years, E-Systems Inc., had a strong systems engineering organization and he spent six years in the role of systems engineer there before taking a job in his home town of San Diego with General Dynamics Electronics Division. There he served as the test manager on a large electronics program before the division was divested. At this point an opportunity to join the commercial vendor side of the industry presented itself and he joined Zycad Corp. which had just begun offering a new product in the U.S. called DOORS. Sam went on to help start TD Technologies with their product SLATE, and then worked for Integrated Chipware supporting their product RTM before rejoining the industry with Northrop Grumman. Sam spent five years with NGC working on satellite programs and finally as an SE manager on the B-2 bomber. When an opportunity to do SE consulting presented itself he moved into this area and worked on several contracts doing requirements analysis, modeling, and architecting before the economic downturn in 2009. Most recently Sam joined Vitech Corp. as an Account Executive / SE providing sales and support for Vitech's CORE and GENESYS MBSE automation software.

Sam Bertic earned a BSEE in digital electronics from San Diego State University and a MS in Engineering Management from Southern Methodist University. He has enrolled in numerous programs in Systems Engineering over the years including an SE certificate program at UCSD Extension, CalTech SE Program, 6-Sigma Black Belt training, and numerous SE tool training classes. His proudest accomplishment is the attainment of the Certified Systems Engineering Professional (CSEP) distinction from INCOSE. With over 20 years of attested SE experience and several senior SE references Sam hopes to obtain his ESEP in the not too distant future.

INCOSE-LA Chapter Holiday Party Great People * Fine Food Gift Exchange *Lots of Fun

**No cost for members
and one guest**

**Saturday, December 8, 2012
3:00 p.m. to 7:00 p.m.**

Lido's in Manhattan Beach



Bring a non-gag gift for a white elephant gift exchange (something you already have but feel guilty throwing away re-gift or purchased item ~\$15 value). Look for a *Reflector* email. Location and directions will be provided upon registration/R.S.V.P. Questions? Contact Scott Birtalan at scott.birtalan@ngc.com.

Systems Thinking

By Padman Nagenthiram

Definition: “Systems Thinking” is the process of understanding how things influence one another within a whole. It is a powerful new perspective of understanding reality that emphasizes the relationships among a system's parts, rather than the parts themselves. It is an understanding that optimization of a system within its environment does not necessarily come from optimizing the individual system components. Systems thinking focuses on cyclical rather than linear cause and effect. Systems thinking requires tolerance for ambiguity and needs to take into account human behavior

Origins: Systems Thinking has its foundation in the field of system dynamics, founded in 1956 by MIT professor, Jay Forrester. Various sources describe systems thinking and “soft systems” approaches independent of systems engineering. There has long been a divide between systems practitioners concerned with “hard” systems – often involving software and complex technologies – and “soft systems”, concerned with social systems and human understanding of systems and human response to complex situations. However, The INCOSE SE Competency Framework (INCOSE 2010) recognizes the need for systems thinking within systems engineering, especially as a way of dealing with increasing complexity, by including a set of “systems thinking” competencies. Systems thinking techniques may be used to study any kind of system — natural, scientific, engineered, human, or conceptual.

Value: It has been shown that project success is strongly correlated to the right amount of tailored and effective systems engineering and that Systems Thinking is a key enabler. The Value of Systems Thinking lies in preventing expensive rework and undesirable (sometimes catastrophic) consequences from unwanted emergence (properties of the whole not uniquely attributable to any of the parts). This value may be further enhanced by integrating the distinct and complementary contributions of systems science, systems thinking, and systems engineering and creating an “integrated systems approach”.

Obstacles: Systems Thinking is hard and may be even considered unnatural. The human mind is surprisingly undisposed to critical thinking and abstracting information. Years of evolution has made it more reactive than cognitive. It can be argued that we do much less thinking than we think we do! There is a tendency to jump to conclusions. We place far too much emphasis on the data we have, rather than the data we don't know about – so we derive conclusions and verification of our conclusions from too little data. Not only do we have difficulties recognizing the need for further information, but we also are conditioned by our experience and see what our conditioning expects us to see. Adding a little extra information to a problem may increase the level of confusion adding to the uncertainty, and that makes us more uncomfortable. Systems Thinking promotes understanding of how to act under the condition of incomplete information. Another factor is that most systems are dynamic and the human mind is not able to cope with dynamic situations very well. There is a tendency not to be able to recognize the momentum in a system, and the inability to recognize the intrinsic delays of a system.

This difficulty with dynamic behaviors is an example of a tendency to over-generalize from experience, and to not be able to process all information available.

The current state of engineering and its organization also presents obstacles to Systems Thinking. These include resistant to change, the need to show visible and linear progress, the stereo-typical view of engineering as a practical discipline and complex and large organizations which are organized into appropriate business groups which are often in different domains.

Development and Implementation: Even though there are “natural” systems thinkers, the good news is that Systems Thinking can be developed and improved in most individuals. While Systems Thinking can be enhanced by training, it has been shown that individuals can learn fastest on small re-work

(Continued on page 7)

(Events continued from page 1)

MORE UPCOMING EVENTS

INCOSE-LA Townhall Meeting

Tuesday, January 8, 2013, 5:30 p.m. to 8:30pm.

See the INCOSE-LA website for details

“Lunch and Learn” Investment Planning Seminar

Saturday, December 1, 2012

in Irvine, presented by Joel Miller of Wells Fargo

contact joel.miller@wfadvisors.com for details

San Diego Engineering Geek Night on Board the USS Midway Museum

Hosted in part by the San Diego Chapter of INCOSE

Sunday, December 2, 2012, 6:30 PM – 10 PM

for more details go to:

<http://www.sdincose.org/wp-content/uploads/2012/08/Engineering-Night-Flyer-07312012.pdf>

SPIN, CERT Resilience Management Model

Presented by Julia Allen, SEI

Friday, December 14, 2012, 9:00 a.m. – 11:30 a.m.

Northrop Grumman E2 Presentation Center,

Redondo Beach, California

Go to the SPIN website for details

INCOSE International Workshop

January 26 — 29, 2013

Jacksonville, Florida

Go to the INCOSE website for details

SAVE THESE DATES!

Mini-Conference 2013

SATURDAY, MARCH 16, 2013

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

Three diverse tracks provide an opportunity to learn, network and share what you know and don't know about "System Thinking" (see article on page 5), "How to Get a Job" and an "SECamp" where that "hot" subject you just have to talk about can be explored.

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 the 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 you 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 **December 31, 2012**. If you have been thinking about this for some time, contact us for the format and the email a draft of the presentation. You will be informed of your presentation's acceptance by January 15, 2013, at which time the format will be provided. Your final presentation will be due by February 15, 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 on line 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 one who is 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 on-line, indicate that you wish to attend this track and specify the discipline of systems engineering in which you are seeking employment. The earlier you register the more likely we will be able to pair you with recruiters.

To **become a presenter**, register on line and email your biography and a short description of how you wish to participate to the Program Chair, Richard Emerson at [remerson9/gamil.com](mailto:remerson9@gamil.com). See the four sessions below for details.

Session 1. The approaches, tips and techniques of 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 its products. Participants will have the opportunity to ask questions of the recruiters. There will a sort break for you to marshal your thoughts and prepare for the "speed Interviewing," Session 3, below.

Session 3. This session will operate like "speed dating," where 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 you desire to join this track at registration.** We encourage each or 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 C.E.O. of "Me Incorporated." Presentations by systems engineers, either individually or as a panel, who have moved their career from employee to either independent consultant or freelance systems engineer 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 an opportunity for systems engineers from non-aerospace industries (transportation, energy management, biomedical systems, and social systems, etc.) to share their perspectives and challenges in applying the process.

(Continued on page 7)

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, 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 January 20, 2013. The “SECamp” voting, by registered attendees will occur between February 1 and February 10, 2013. The selected presentations will be announced by February 20, 2013, and are due by March 1, 2013. The presentation format will be provided with the selection notification.

To **become a participant** in this session, **register** on-line 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 of networking and exploration will be outstanding.

(Systems Thinking continued from page 5)

modification issues, and develop proficiency and confidence to apply it in the early stages of projects, where the impact has greatest value. In implementing Systems Thinking on a project there has to be a balance between the Systems Engineering Process (being systematic) and the application of Systems Thinking (being systemic). It is also beneficial to ensure sharing and standardization of Systems Thinking approaches and outcomes across the organization – so as to build on the learning of others and to try to avoid duplication of the learning pains. However, this should not constrain the flexibility of application, especially to different domains. Finally, Systems thinking needs to be integrated into the processes, the knowledge and the roles within the organization and it is essential that everyone become a “Systems Thinker”, not just leadership or key individuals on a project. It is equally vital that the right leadership sets this expectation, especially to get over the initial learning and implementation hurdles.

Another aspect is that our educational system does not foster Systems Thinking. The reductionism (analyzing a problem by breaking it down to small parts) that is taught actually discourages Systems Thinking. Children actually have some systems-based intuition and this should be nurtured. In fact, some kindergarteners have been found to be better system thinkers than college graduates! It has been suggested that we introduce System Thinking early into the educational curriculum of schools by way of small projects.

Conclusion: Even though Systems Thinking is one of the more difficult elements in systems engineering to recognize, develop and use, yet developing and implementing it pays rich rewards, especially in increasingly complex systems.

**SEE YOU AT THE MINI-CONFERENCE!
MARCH 16, 2013**

The Board of Directors wishes to welcome the following new members in 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
Keith C Buerger	Sr. Systems Engineer	Raytheon Corporation
Richard S Dalo		
Gordon B Hudson	Pilot II	AeroVironment Inc.
Lisa LeMaster		
John L Paillet II	Principal Systems Engineer	Raytheon Company
Pete Smith	Associate	Booz Allen Hamilton
Diana G Wu	Engineer	Northrop Grumman
Michael J Zarem	Student	University of South California

INCOSE-LA Chapter NEWSLETTER

Vol. 10: Issue No. 11 December 2012

Return Address:

**PO Box 10969
Westminster, CA 92685-0969**

Forwarding Address 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 the systems engineering field or related fields.

2012 Board of Directors

Elected Officers			Elected At-large Directors		
President	John Silvas	silvas_john@bah.com	Membership	Paul Cudney	paul.cudney@incose.org
Vice-President	Terry Rector	terry.rector@incose.org	Programs (acting)	Shirley Tseng	shirleytseng@earthlink.net
Past President	Beth O'Donnell	elizabeth.odonnell@incose.org	Systems Engineering Education	Larry Earnest	Larry.earnest@incose.org
Secretary	Alan Kirschbaum	alan.kirschbaum@incose.org	Ways and Means	Michael Maar	michael.maar@incose.org
Treasurer	Harvey Soldan	harvey.soldan@jpl.nasa.gov	Communications (acting)	Jorg Largent	Jorg.largent@incose.org
Appointed Positions					
<i>Newsletter</i> Co-editor	Jorg Largent	jorg.largent@incose.org	<i>Newsletter</i> Co-editor	DeAnna Regalbuto	deanna.regalbuto@verizon.net
Technical Society Liaison	Shirley Tseng	shirleytseng@earthlink.net	<i>Reflector</i> Manager	Susan Ruth	susan.c.ruth@aero.org
Chapter Recognition Manager			Industrial Relations Manager	Jose Garcia Jr.	jose.s.garcia-jr@boeing.com
Professional Networking Chair	Scott Birtalan	scott.birtalan@ngc.com	Website Technical Manager	OPEN	
2013 Mini-Conference Chair	Harvey Soldan	harvey.soldan@jpl.nasa.gov	Lead Site Coordinator	OPEN	
2013 Mini-Conference Technical Chair	Richard Emerson	remerson9@gmail.com	Rep to the SF Valley Engineer's Council	Stephen Guine	Stephen.Guine@ngc.com
Volunteer Coordinator	Karen Miller	karmill888@aol.com	New Member Ambassador	Collette Kurtz	collette.kurtz@incose.org