



NEWSLETTER



2002, 2004-11



2003



**2008 President's
Award for Most
Outstanding
Chapter**



UPCOMING EVENTS

June Speaker Meeting

Can a "Science" of Systems Contribute to Systems Engineer?

Dr. Len Troncale, Emeritus Professor of Biological Sciences, Director,
Institute for Advanced Systems Studies, California State Polytechnic
University, Pomona, California

When: Tuesday, Tuesday, June 12, 2012, 5:30 p.m. to 7:45 p.m.

Where: Booz Allen Hamilton, LAX Office

5220 Pacific Concourse Drive

Building 5220 — 2nd. Floor, Suite 200

Details on page 3

Networking Meeting

WHEN: Wednesday, June 20, 2012; 5:30 p.m. to 8:00 p.m.

WHERE: Bar Celona – Modern Spanish Tapas Bar, 46 East Colorado
Boulevard, Pasadena. phone: 626-405-1000.

Valet Parking is available.

Details on page 3

INCOSE International Symposium

When: July 9 - 12, 2012

Where: Rome, Italy

See "Save the Date" on page 3

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The High-Speed Gorilla

By Scott Jackson

The 800-pound gorilla in the high-speed rail room is resilience. One might ask, "Resilience to what?" The answer is resilience to disruptions in an ultra-fragile air transportation system. Recall that the entire air traffic system was shut down for almost a week eleven years ago. Since then false alarms, not even real threats, have shut down large portions of it. In 2010 there was the eruption of Eyjafjallajökull (few people can pronounce it) that shut down much of the world air traffic. Europeans took advantage of their high-speed rail systems to get to their destinations. Americans did not have that capability. This article explores whether ways can be found to make such fragile systems resilient and whether means can be found to pay for such resilience. In addition to the fragile aviation system, other fragile systems are discussed, such as the Sacramento Delta levees, the San Francisco water system before 1906, and Galveston Island before 1900.

An unknown question is whether the European rail system had the capacity to handle the extra traffic during the period of the Icelandic volcano eruption. Many rail systems are underutilized, so it is possible. There are two ways to assure that the extra capacity is available. One is for the far-sighted planners to build the extra capacity into the system. The cynic, and I am one, will say that option is unlikely. A more likely scenario is the extra capacity will already exist because of more routine disruptions in the system. Whether this is fact in Europe is unknown. However, there is one case in which extra capacity existed for that very reason. Following the twin towers attack in 2001 the power went out all over lower Manhattan. However,

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Gold Circle Award for the Los Angeles Chapter

The following is the text of a letter from Raymond Jorgensen, Americas Sector Director to John Silvas, President of the Los Angeles Chapter:

On behalf of the International Council on Systems Engineering (INCOSE), we are pleased to recognize the Los Angeles Chapter as a Gold Circle Award Chapter based upon its contributions and accomplishments in 2011. The Gold Circle Award recognizes chapters adopting best practices and reaching the highest goals and standards established by our organization.

(Continued on page 2)

New Member Ambassador

Collette Kurtz has taken on the role of "New Member Ambassador," in response to a call for volunteers at the Strategic Planning Meeting April. In this capacity Collette is welcoming new members to our Chapter. This is an important activity and should help to counter the perception that we are a closed group. I hope she will continue in this role and will help welcome our new members in person at our meetings, and perhaps at other activities. Collette's activities also fit well with Nehal Patal's Professional Networking goals. Collette has been sending welcome packages to new members and coordinated telephoning lapsed members and new members. **Thank you, Collette, for volunteering.**



(Gold Circle continued from page 1)

For many, chapters provide the primary day-to-day interface with INCOSE. Chapters organize technical and social programs, communicate key information about our organization and discipline, support technical activities, and enhance the member experience by facilitating an open, inviting environment where members receive valued products and services that enhance their careers. In fulfilling this mission, the Los Angeles Chapter leaders and members have committed significant time and energy to further the goals of our organization.

To honor these efforts and achievements, this Gold Circle Award will be presented at the 2012 INCOSE International Symposium in Rome, Italy. In doing so, INCOSE recognizes and celebrates the contributions and achievements of the Los Angeles Chapter, its leaders, and its sponsors.

High quality, vibrant chapters are essential in INCOSE's drive to enrich, educate, and enlighten the INCOSE membership while improving recognition of INCOSE and the systems engineering profession. The Sector Directors and INCOSE extend heartfelt thanks and appreciation to the Los Angeles Chapter for its contributions towards attaining these goals.

(The High-Speed Gorilla continued from page 1)

with the cooperation among various agencies the power was restored within five hours. This restoration was possible because New York had a large supply of portable generators that were presumably there for routine power failures. Whether the extra capacity exists or not the concept of redundancy is a long accepted principle. The power restoration experience is described by Mendonça and Wallace (2006).

One might argue that the cost of high speed rail is too much to pay for a redundant transportation system. So, the question is how much is too much? It all depends on the consequences and the cost of the consequences. In 1906 San Francisco had a single brittle (meaning non-resilient) water system. This system failed rendering the city without any means to put out the fires that resulted from the earthquake. San Francisco now has a triple-redundant water system. Somehow, the money can be found when it is important enough.

Of course, building a high-speed rail has no direct relation to dealing with another 8.25 magnitude in the Bay Area. The example of the triple-redundant water system only shows that when the possible consequences are severe enough, money can sometimes be found to deal with the next disaster. According to former San Francisco fire chief Emmet Condon (1989), the consequences of the next Bay Area quake of the same magnitude will be so bad that it is unlikely the money will ever be found to prepare for it.

Stephen Flynn (2007) tells us that a mere 6.5 quake (the 1906 quake is estimated to have been a magnitude of 8.25) will cause the levees on the Sacramento Delta to break and salt water from San Francisco Bay will flow into the fresh water delta, and Californians will be without water, and 300,000 people will be homeless. And this is not even a low-probability event; Flynn says that by 2050 a quake of this magnitude "will almost certainly happen." Californians in their wisdom turned down a proposal for a redundant canal called the Peripheral Canal. Yes, it would have been very expensive, but one has to pay now or you pay later.

One might say that the cost of a redundant transportation system is too much to pay for something that is not a certainty. Well, it happened in 2001 and Al Qaeda is still around. There is a crossover point at which the cost is so high that resilience is a cost we must assume. If cultural and political factors are ignored, this crossover point is when the cost of resilience exceeds the cost of any possible consequence. When cultural and political factors are included, experience shows that the willingness to pay for resilience is much lower before a disaster and much greater after a disaster. After the 1900 Galveston hurricane (the greatest natural disaster in US history, not Katrina, in terms of fatalities) the city built a great seawall and raised the entire city by 17 feet. The cost was, of course, very high. Systems engineers have studied risk analysis enough to figure out the cost trades.

If we are looking for resilience at a national level, the California high-speed rail project would be only a piece of the picture. So if a need is desired, it can probably be found right here. It's not about jobs; it's not about getting from A to B; it's not about the environment; it's about resilience.

Further Reading

Stephen Flynn's book *The Edge of Disaster* (2007) will provide more details about the Sacramento Delta. Flynn also discusses Katrina and some of the lessons to be learned there. Hansen and Condon's book *Denial of Disaster* (1989) provides much more information about the 1906 San Francisco earthquake and fires and the current state of the city. Mendonça and Wallace' paper on the New York Power Restoration can be found on the www.resilience-engineering.org web site. Look for the 2006 Resilience Engineering Symposium. Further information on the Galveston seawall can be found at the Rosenberg Library's (2009) web site <http://www.gthcenter.org/exhibits/seawall/index.html>.

A Question That Answers Itself?
What is a good example of a trivia question?

June Speaker Meeting

Can a “Science” of Systems Contribute to Systems Engineer?

Presenter: Dr. Len Troncale, Emeritus Professor of Biological Sciences, Director, Institute for Advanced Systems Studies, California State Polytechnic University, Pomona, California

PARTICULARS

When: Tuesday, June 12, 2012, 5:30 — 7:45 p.m.

Where: Booz Allen Hamilton, LAX Office
Building 5220 — 2nd. Floor, Suite 200
5220 Pacific Concourse Drive

*Remote sites will **not** be available for this speaker meeting*

Cost: Members-*FREE*; Non-members-*\$10.00*

Meeting Agenda:

5:30 - 6:20 p.m. Registration, networking, refreshments
6:20 - 6:30 p.m. Welcome and announcements
6:30 - 7:45 p.m. Presentation followed by questions and answers



BIOGRAPHY: Dr. Troncale is Professor Emeritus, past Chairman of the Biology Dept., and Director of the Institute for Advanced Systems Studies at California State Polytechnic University (Cal Poly Pomona). He has served as Vice-president and Managing Director of the International Society for General Systems Research and President of the International Society for the Systems Sciences. He has published 87

articles, abstracts, editorials, posters, and reports, served as editor on 11 projects, delivered 115 presentations and demonstrations in 23 countries, and served as principle investigator on 52 grants and contracts for \$5.3M from a variety of Federal, state, and private organizations such as National Science Foundation, Department of Education, Office of Naval Research, Housing and Urban Development, Howard Hughes Medical Institute, and W. M. Keck Foundation, as well as the California State University System.

ABSTRACT: Concepts, tools, methods, simulations, modeling, and management of large-scale systems are part of the everyday work of a systems engineer. Yet for maximum validity and efficacy, all of these must first follow from a deep knowledge of how systems work. It is arguably better that this deep knowledge derives from tested knowledge as in the products of science. So chemical Engineers take core courses in Chemistry; Mechanical Engineers take core courses in Physics, etc. Do Systems Engineers take core courses or postgraduate tutorials in Systems Science? Should they? What is the status of a true “science” of systems? What systems course would they take? How would it help if they did? This talk will try to answer these questions.

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SAVE THE DATE

Latest Mars Rover Mission and Landing Presentation

Co-sponsored by IEEE-OC Computer Society and INCOSE-LA

Saturday, June 2, 2012

2:00 p.m. to 5:00 p.m. (doors open at 1:30 p.m.)

High School and College Students Most Welcome!!!

For more information contact: <http://occs-060212.eventbrite.com>

Jet Propulsion Laboratory Open House

Saturday, June 9 and Sunday, June 10, 2012,

9:00 a.m. - 4:00 p.m.

For more information contact: <http://www.jpl.nasa.gov/events/open-house.cfm>

International Society for the System Sciences

When: July 15 - 20, 2012

Where: San Jose, California

For more information contact: <http://iss.org/world/>

Networking Meeting

INCOSE-LA Professional Networking Event

Join members of the Board of Directors and other members of the chapter for an evening of socializing and networking with other chapter members and guests. We will also be looking to brainstorm for ideas and volunteers for a chapter-hosted job fair event.

WHEN: Wednesday, June 20, 2012; 5:30 p.m. to 8:00 p.m.

WHERE: Bar Celona – Modern Spanish Tapas Bar, 46 East Colorado Boulevard, Pasadena. phone: 626-405-1000. Valet Parking is available.

EVENT CONTACT: Nehal Patel, phone 949-274-0387, email Patel_Nehal@BAH.com.

COST: No-host bar, the Chapter will provide light appetizers.

R.S.V.P.:

The R.S.V.P. deadline for this event is June 13, 2012. Due to the limited space available, reservations are required and should be made as early as possible. Please R.S.V.P. online at <http://www.incose-la.org> and look for “Wednesday, June 20, 2012 - 5:30 p.m. INCOSE-LA Member Networking Social Event.”

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(Networking Meeting continued from page 3)

DIRECTIONS:

Coming from the south: Take the 110 north through Los Angeles, continuing onto South Arroyo Parkway then turn left onto East Colorado Boulevard. The restaurant will be on left.

Coming from the north: take the 210 East towards San Bernardino then take the exit for Colorado Boulevard in Pasadena. Continue on towards West Colorado Boulevard and turn left onto West Colorado Boulevard. The restaurant will be on right.

Coming from the west: take the 134 east to the Colorado Boulevard exit. That exit flows directly onto Colorado Boulevard. The restaurant will be on the right.

The closest Gold Line light-rail station is Memorial Park. Colorado Boulevard is two blocks south of the station and the restaurant is west of the tracks. Trains run every six minutes.

(June Speaker continued from page 3)

Natural physical, astronomical, chemical, geological, and biological phenomena constitute a test bed for understanding how complex systems work. Science studies phenomena of each domain and its sub-specialties by doing experiments to elucidate the “processes” at the foundation of each phenomena. By comparing numerous phenomena across these diverse manifest systems as they have been studied by their respective sciences for hundreds of years, we have detected more than 50 fundamental and isomorphic “systems-level processes” that have remained constant across all that diversity of entities, across all those different size scales, across all the different and unique origin times and mechanisms.

This talk will show how to “prove isomorphy” of processes rather than just talk about universality as an assumed feature. Further, we can employ data and results from a multitude of rigorous published experiments to discover and explicitly describe how these systems processes directly influence each other (Linkage Propositions) to produce systems functions. Even more significantly, we can harvest information on “motifs,” “circuits,” “sub-graphs,” and “modules“ of systems process design that are repeatedly used by successful natural systems.

Systems engineering requires continuous and recursive testing of systems designs. But suppose you had the possibility of setting up an incredibly detailed test of what worked best for designing lasting complex systems. Suppose this test had gone on for literally billions of years, through countless trials and events, and allowed you to try vast diversities of possible configurations. Suppose this test was merciless in allowing only the workable solutions to continue. Suppose this test allowed you to discover and learn many unforeseen design secrets on every possible scale. This is what a systems science based on the results of the natural sciences would be like. This talk will illustrate the above and both the organization and documentation of the above in a detailed theory — a System of Systems Processes Theory (SoSPT) — that is extensively grounded in the natural sciences, a true “science” of systems available nowhere else. The consistency of the processes and their Linkage Proposition interactions throughout the natural world argues for their importance and their efficacy in making a wide range of systems work.

The talk will show a modified set of slides by Samantha Brown, INCOSE immediate past President, that describes how both systems engineering and systems science face the same obstacles to acceptance and growth. It will continue by showing how the explosion of recent successes in bioengineering/biomimicry provide a model for how systems engineering could also explode using “systems mimicry.” But these developments would depend on synthesis of the varied domains of current systems theories and approaches. So the talk will briefly describe three official projects of the SSWG of INCOSE for Unifying Systems Theories, developing Systems Pathology at a systems architecture level, and improving understanding and communication through recognition of Systems Ontologies. So, this talk will depict SoSPT and its offspring Systems Pathology as a key, missing, science-based knowledge of how systems work that may have broad utility for systems engineering.

The resulting SoSPT might provide: (i) a tight curriculum for post-graduate training of systems engineers, (ii) a wealth of ideas for systems design alternatives, (iii) evolution of new tools that would be of practical utility to INCOSE for its role in dealing with crisis societal problems, (iv) suggest a unified ontology/taxonomy of systems, (v) a more reliable definition of systems complexity and how complex systems work, (vi) enable a very much needed integration/synthesis of the many current competing systems approaches, and (vii) even lead to a new conception of the types of systems we should be engineering. The talk will also suggest expansion of the concept of “non-linear causality” (so critical to definitions of complexity and to engineering systems) to a series of “types” of non-linear causes that may be used as new systems design tools.

R.S.V.P.:

ALL PARTICIPANTS: Please register online at <http://www.incose-la.org> (this is important so as to help facilitate implementing the meeting). You will be asked to provide your full name, title, company, phone number, and email address. State whether you are a US Citizen, resident alien, or foreign national. Attendees must R.S.V.P. by Friday, June 4, 2012. Please bring your picture identification (driver's license, passport or green card) to the meeting.

Directions to Booz Allen Hamilton:

From the San Diego (405) Freeway traveling south:

1. Take exit 46 toward Century Blvd. West/LAX.
2. Turn left (south) on south La Cienega Boulevard.
3. Turn right onto Pacific Concourse Drive.
4. Follow the road until you reach the second stop sign (immediately past court house parking garage on the right) and turn right. At gate on the far right, press the green button to receive a parking ticket (admin staff will validate parking).
5. After passing the gate, turn left and park in the visitor parking lot. Walk past the water fountain, across the rotunda to building 5220. Meeting will be on the second floor, Suite 200.

From the San Diego (405) Freeway traveling north:

1. Take the El Segundo Boulevard exit, exit 44, toward Hawthorne Blvd.
2. Turn left onto west El Segundo Boulevard.

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(June Speaker continued from page 4)

3. Turn right (north) on south La Cienega Boulevard.
4. Proceed on La Cienega until the third stoplight.
5. Turn left onto Pacific Concourse Drive.
6. Follow the road until you reach the second stop sign (immediately past court house parking garage on the right) and turn right. At gate on the far right, press the green button to receive a parking ticket (admin staff will validate parking).

After passing the gate, turn left and park in the visitor parking lot. Walk past the water fountain, across the rotunda to Building 5220. Meeting will be on the second floor, Suite 200.

May Speaker Meeting Report

Chapter President John Silvas opened the meeting by welcoming everyone and briefly discussing the evening's activities. John welcomed the new members to the Chapter: Tatiana Kichkaylo, a Computer Scientist from USC ISI; Mohamed Elghefari, a Senior Analyst from Tecolote Research Inc.; Jean Marie Baer, a Sr. Project Engineer from the Aerospace Corporation; Mark Hold, an Engineering Director from Amgen Inc.; Anthony LiCausi, an MS&A Lead from TASC; Christopher Hutchings, a Project Lead from Galorath Inc.; David Wright, a Member of the Technical Staff at the Aerospace Corporation; and Brian Bousman, a Software Systems Engineer from The Boeing Company. John also discussed the activities for the members being planned over the next few months. With a special acknowledgement of the expanding outreach of the speaker meeting, John noted that, in addition to the remote sites plugged into the meeting, several individual participants had joined the meeting using Live Meeting. John then introduced the speaker for the evening, Peter C. Theisinger.

Peter is the Manager of the Mars Science Laboratory Project at NASA's Jet Propulsion Laboratory. His prior positions have included Director for the Engineering and Science Directorate, Deputy Director of the Mars Exploration Directorate, Manager of the Mars Exploration Rover Project, Deputy Manager of the Mars Sample Return Project, Deputy Manager of the Systems Division, Mission Support and Development Manager of the Mars Surveyor Operations Project, Project Engineer for the Mars Global Surveyor spacecraft development project, and Manager of the Spacecraft Systems Engineering section.

Mr. Theisinger has been involved in the systems design and development of interplanetary spacecraft systems since he originally joined JPL in 1967 as an engineer in the Payload Integration Section.

Peter's presentation was educational and entertaining. The Mars Science Laboratory and the Curiosity rover are one of the greatest exploration projects to date. To provide a sense of perspective, Peter discussed the second mission to Venus in 1967 and its data rate: eight bits (not even bytes) per second. He then discussed the growth of capabilities leading up to the Mars Science Laboratory. After a brief video on when the vehicle is and the expected activities once the vehicle gets to Mars, Peter

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USC Student Division

The kickoff meeting for the student division at the University of Southern California (USC) was well attended by members of the Chapter, faculty, and students. Attendees included Eric Belle, a Past-president of the Chapter and currently a member of the INCOSE Board of Directors, John Silvas, President, INCOSE-LA, Michael Kim, the Chapter's Student Division Ambassador, Padman Nagenthiram, a member of the Chapter and of the INCOSE Board of Directors, Nehal Patel, the Chapter's Professional Networking Chair, Warren Scheinin, and Shirley Tseng, the Chapter's Technical Society Liaison. The students in attendance were Leon Abruime, Adrian Allen, Franklin Caldwell II, Melin Dadual, Sercan Demir, Maryann Hiller, Belle Koven, Pai Liu, Gerardo Lizarraga, Jose Martinez, David Mason, Alex Minassi, Douglas Orellana, Michael Ortega, Yvette Rodriguez, and Reynaldo Saldivar. The faculty was represented by Professor Azad Madni.

The meeting was held in a charming little bistro called "Traditions," located in the heart of the USC campus near the "Tommy Trojan" statue.

A "student division" is a special outreach to college students that is intended to foster stronger links between practicing professionals and aspiring student systems engineers on their campuses. A "student member" is an individual who is enrolled $\frac{3}{4}$ time in an engineering or related field.

The students of the division are an enthusiastic group, full of energy and interest in their chosen field. Dr. Azid Mahdni led a discussion of how Chapter members could support the students by mentoring them and making presentations on applied systems engineering. As an "it's a small world" aside, it was discovered that Dr. Mahdni and one of the members in attendance lived close to one another in their youth. Later in the evening the group had a comprehensive roundtable of the significance of systems engineering and how many students from various disciplines, even those outside of engineering, can benefit from studying systems engineering principles.

The most important thing is to keep the most important thing the most important thing.

- From the book "Foundation design", by Coduto, Donald P.

Strategic Planning Meeting

The Los Angeles Chapter of INCOSE held its second Strategic Planning Meeting of the year on April 28, 2012. The meeting was attended by four elected members of the Board of Directors, four appointed members of the board, two members of the INCOSE Board of Directors, and six “rank and file” members of the Chapter. Chapter President John Silvas welcomed all attending and reviewed the day’s objectives as:

- ◆ An opportunity to critique strategy and key Chapter activities planned for remainder of 2012
- ◆ Review the significance of core Chapter operating plans to educate and help improve Chapter operations
- ◆ Have an in-depth membership discussion around maximizing the value proposition to the members, using membership as a metric.

John reviewed the progress to date against our Chapter’s 2012 ten objectives and asked the group how the Chapter is doing. Particularly noteworthy was the success of the Mini-Conference in terms of its financial goals, attendance, and feedback from those who attended. Those who attended particularly noted that the keynote by Gwynne Shotwell was excellent.

The Student division kick-off at the University of Southern California (USC) was deemed a success and the Student Division Committee is discussing creating a student division at Loyola Marymount University with the university’s Dean of Systems Engineering. They are targeting an Autumn kick-off. The Student Division Committee is also looking at Cal Poly Pomona and the University of California Irvine as potential locations for additional student divisions.

The overall annual calendar was reviewed and the details of the next 3 months presented. The discussions emphasized the importance of planning programs well in advance to allow the membership to plan to attend those of interest to them.

Membership Chairman Paul Cudney described the membership environment. Both local industry retrenchment and the international economic downturn are relevant. Current chapter membership is approximately 380, which is a little down from past years. The past three years have shown a trend of more membership lapses. Still, Paul stated, “it’s what people get out of their membership that counts.” Paul summarized the 2012 membership planning goals.

- Maintain successful retention
- Recruit new members
- Selectively extend award membership goals (1650 of 3000 points — a useful measure of chapter health)
- Increase participation.

The group reviewed methods to encourage renewal and retention. This requires understanding reasons for non-renewal and developing mechanisms to address those.

New members present were asked what they hoped to gain from INCOSE at the local level. Among reasons cited were networking, improving technical discipline strengths and skills, and comparing notes on the profession with others.

The new members suggested a topic of potential interest: an increased focus on trading costs with systems performance and advancing aspects of systems engineering.

Proactive actions to improve retention included developing opportunities for volunteerism in a focused manner to help the Chapter and to gain networking and mentoring opportunities at low risk (This was also expressed to be vital for succession planning). Jeff Lankford discussed a range of time commitments and investments for each volunteer activity and that the membership plan provides a framework for approaching Chapter operations.

Jorg Largent suggested the need for an increased public visibility strategy, e.g., local press outreach to provide timely systems engineering expert commentary on public systems issues.

John summarized the membership discussion by focusing on what we can best do to effect membership: improve efforts in marketing, make every event have a stronger networking flavor, increase emphasis on an active participation metric, assure interesting subject matter in meetings; and provide systematic liaison for southern California systems engineering programs.

Shirley Tseng explained the intent behind the programs being offered: systems engineering education activities and career and personal development. She summarized the programs by stating that eight to ten speaker meetings were planned (one each month except July and December). She introduced two planned tutorials and two planned career and personal development events.

Shirley described the possibility of including a second conference-like event during this year. She described the notion of a joint activity in the Autumn, co-sponsored with the San Diego Chapter. Shirley highlighted the opportunities for partnering with other common-interest professional organizations.

Tutorials are being considered on the Systems Engineering Book of Knowledge in July, and on Error Prevention. She also described the possibility of a combination of a meeting and a tutorial during the Autumn. Additional systems engineering education activities planned include an education column in the Chapter *Newsletter* and promoting Certified Systems Engineering Professional webinar announcements.

Nehal Patel described the components of this year’s Professional Networking Events program in terms of its three components: working professionals, college students, and to high school students.

She has planned quarterly events for working professional, the next scheduled for June in the Pasadena area. Those in the second half of the year are planned for Huntington Beach and El Segundo.

Nehal noted that the USC Student Division kickoff mixer last month went well, and, expanding the program. Nehal is in contact with the engineering administration at Loyola Marymount University. UC Irvine and UC Los Angeles are in

(Continued on page 7)

(Strategic Planning Meeting, continued from page 6)

the queue.

Shirley took the action to summarize all the systems engineering higher education programs in the Chapter’s geographic area as part of the Chapter’s Science, Technology, Engineering, and Mathematics (commonly known as “STEM”) educational and career mentoring program. Nehal had performed professional networking outreach to local high schools and plans to partner with the Segue Career Path Mentors Program and with the Booz-Allen Work force Leadership Council diversity program. The distinct advantage of the Segue Career Mentor approach allows scheduling to fit the mentor/speaker’s schedule rather than restricting engagements to a fixed “career day.” See: www.segueprogram.org for further information. A proposed model to maintain timely website content was discussed and demonstrated. In the proposed model, directors/committee chair people, or someone on their respective committees, would provide timely posting of new content.

Jorg suggested that we find a web-savvy student who might be able to design a very visually appeal web site, but since timely and time-efficient content addition is the primary issue, he concurred with approach of moving in the suggested direction. There was broad agreement to move ahead with the approach, and an action item to develop a transition and training plan was assigned.

John concluded the meeting. The minutes from the meeting are available in the [INCOSE-LA Connect](#) folder at the INCOSE web site.

(May Speaker Meeting, continued from page 5)

elaborated on some of the challenges the team faced and resolved.

Curiosity’s overall scientific goal is to explore and quantitatively assess a local region on Mars’ surface as a potential habitat for life, past or present.

The complexity of the mission was illustrated by the descent to the Martian surface, which involves a heat shield for the first part of the descent, a parachute for the middle of the descent, and retrorockets for the final site selection, descent, and landing. Inputs and commands from Mission Control need to be anticipatory because of the time required for signals to get from the Earth to Mars (nine to twenty minutes depending upon where the planets are in their orbits). Temperature is a challenge; the Curiosity is expected to survive temperatures ranging between -120C to -10C.

When asked if there were any systems engineering lessons learned, Peter acknowledged a vendor, a “mom and pop” operation, who delivered the product, used their own capital, and were ahead of schedule. He commented that it boiled down to: a couple of rules, get the best people, task them correctly, don’t change the rules, give them time and money, and watch them like a hawk.

Peter discussed how they will “operate” relaying data, assessing system health, making mission decisions, and sending instructions for the next day.

After describing how many of the experiments are intended to work, Peter concluded his presentation by discussing the selection process for a landing site and then answered questions.

Volunteers!

Would you like to be a part of the hard-working team that provides these benefits to the members of INCOSE-LA? If you are interesting in volunteering, speak to a member of the Board of Directors or send an email to President@incose-la.org

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 |
|-----------------------|---------------------------|---------------------------|
| Robert D Foster Jr | Systems Engineer | Northrop Grumman |
| Brian Bousman | Software Systems Engineer | The Boeing Company |
| David Wright | Member of Technical Staff | The Aerospace Corporation |
| Christopher Hutchings | Project lead | Galorath Inc |
| Anthony LiCausi | MS&A Lead | TASC |
| Mark D Holt | Engineering Director | Amgen Inc. |
| Jean Marie Baer | Sr. Project Engineer | The Aerospace Corporation |
| Mohamed Elghefari | Senior Analyst | Tecolote Research Inc. |
| Tatiana Kichkaylo | Computer Scientist | USC ISI |

INCOSE-LA Chapter NEWSLETTER

Vol. 10: Issue No. 6 June 2012

INCOSE-LA Chapter NEWSLETTER

Vol. 10: Issue No. 6 June 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 | Michael Kim | michael.kim@jhuapl.edu |
| Past President | Beth O'Donnell | elizabeth.odonnell@incose.org | Systems Engineering Education | Larry Earnest | Larry.earnest@incose.org |
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