

Published quarterly and sent to all INCOSE Enchantment Chapter members. 2016 Q1 www.incose.org/enchantment



Meet The 2016 Chapter Board—Bios at www.incose.org/enchantment



Ron Lyells, President—Ron Lyells represents Honeywell International on the Board of Directors. He has over 34 years in the defense and space industry involved in the electrical and systems development of various avionics systems, including flight controls, digital mapping systems, ground and test systems. He has lead teams across product development stages from proposal to production support. Ron is currently working on an international team responsible for defining and deploying various methodologies to improve product development systems within the Honeywell Aerospace organization. He is specifically responsible for developing and integrating system engineering methodologies with various lean based product development strategies.

Looking ahead to 2016: Everything about the INCOSE or ganization is cultural in nature; whether you consider the symposiums, workshops, our chapter, the UTEP student chapter, our by-laws, even those speaker, tutorial, and social events we plan and attend are all cultural artifacts that influence our lives to the extent we allow. Some have said that "culture is what humans make of the world." In a recursive and dynamic sort of way, humans also make sense of the world by making something of the world. As systems engineers and those who practice systems thinking, we do a lot of sense making as well as making or designing something to be introduced to our world. The INCOSE vision 2025 is fundamentally a cultural vision, an attempt to make something of the world that builds on what is present today. Most that have read this document are trying to make some sense out of what it means for them as members of INCOSE. The same questions are arising for the Chapters as well. I am submitting to you that taking a cultural perspective as we move forward, will help provide useful and more informed motives and satisfaction for what we do individually and collectively as a chapter. As Chapter President, my intention is to bring this perspective in front of the board of directors in our deliberations as well as the membership through articles in the newsletters.



Anthony Matta, Vice President, President Elect—Anthony is a new Board member from Sandia National Laboratories – High Confidence System Environments. He has spent most of his career working on modern software engineering applications involving various web and object-oriented languages. Before his current assignment, he was centered in the Technical Area -V (TA-V) Nuclear Facilities Engineering department where he provided software subject matter expertise with engineering principles, approaches, methods, and the concepts of systems thinking to all software systems involved in the TA-V facilities (research reactor, critical assemblies, and irradiation facility). This included Configuration Management systems, control software, firmware management, and other enterprise software systems. At the facilities, Anthony was the technical lead and lead architect for integrating and implementing the TA-V fa-

cilities CM tool, eB, and he was the lead architect and developer for the TA-V Work Planning & Control and engineered safety tools. Anthony has a Masters in Systems Engineering from the Stevens Institute of Technology. ∞



New Board Member

Ben Schaefer is a Senior Member of the Technical Staff at Sandia National Laboratories, is a Systems Engineer in the Nuclear Weapons Complex supervising system level requirements engineering and implementation of the require-

Continuing Board Members



Ann Hodges, Sandia Labs, Secretary Mary Compton, Sandia Labs, Treasurer Rick Dove, Paradigm Shift Int'l, Past Pres Regina Griego, Sandia Labs Mike Gruer, Honeywell ments architecture in a DOORS database. He holds a BS in Electrical and Computer Engineering from the University of New Mexico and an ME in Systems Engineering from Stevens Institute of Technology (May 2016). Before Sandia, he worked in the nuclear power and aerospace industries for five years as an Electrical and Systems Engineer. Ben plans to pass the CSEP exam in the summer of 2016. ∞

Heidi Hahn, Los Alamos Lab John Hunter, Sandia Labs Bob Pierson, ATA Eric Smith, U. of Texas, El Paso Tom Tenorio, White Sands Jeni Turgeon, Sandia Labs









IW16 INCOSE International Workshop Los Angeles — Jan 30-Feb 2

Workshops	Sat 30 Jan	Sunday	Monday	Tuesday
Agile Systems and Systems Engineering	1300-1830		0900-1730	0800-1200
Anti-Terrorism International			1330-1700	0830-1200
Architecture			0930-1630	
Automotive			1330-1730	0800-1200
Certification Exam		0800-1100		
Chapter Leaders Meeting (Americas Sector)	1030-1200			1300-1430
Chapter Technical Information Coordination Initiative			1300-1700	
Competency			0900-1700	
Critical Infrastructure Protection & Recovery		1400-1630	0930-1630	
Decision Analysis			0900-1200	
Healthcare	1030-1700	0900-1700	0900-1700	
Human Systems Integration		1000-1700	1000-1700	
INCOSE IT	1700-1800			
Life Cycle Management			1000-1500	
Methodology and Metrics			0900-1000	
Model Management	1400-1600	1330-1730	1000-1600	1000-1400
Model-Based Conceptual Design		1400-1700		
Modeling and Simulation Interoperability			0900-1200	0800-1200
Natural Systems	1030-1730	0900-1700		
Pattern Based Systems Engineering	1330-1730	1330-1730		
PM / SE Integration				0800-1400
Power & Energy Systems			1500-1700	
Powerful Planning using Agile, Lean, and Team Building		0900-1700		
Requirements	1330-1830	0900-1800	0900-1800	0800-1400
SE in VSME	1330-1730			
SE Maturity Model		1330-1430		
SE Transformation		0900-1200	0900-1200	1000-1200
Space Systems				1030-1130
Student Divison Meeting			1530-1730	
Systems of Systems	1330-1730			
Systems Science	1030-1830	0900-1800	0900-1800	0800-1400
Systems Security Engineering	1300-1830	0900-1700		0800-1200
Working Groups (all) Bazaar and Closing Reception				1600-1830

Take the INCOSE Certification exam at IW16 for a \$40 exam fee (normally \$80). Sign up on IW16 registration form. Those who pass may use the results toward ASEP or CSEP certification, if they apply for certification within a year. Handbook version 4. ∞

For updates to this 22 December schedule go to the INCOSE IW16 Program site.

If you haven't decided about going yet, here are some things to think about ... Unlike INCOSE's annual International Symposium and other conferences, there are no paper, panel or tutorial presentations. Instead, attendees spend 4 days working alongside fellow systems engineers. Systems Engineers at all levels and from all backgrounds are encouraged to engage in working sessions, and contribute their knowledge and experience to improve the discipline.

Working group meetings at IW represent about half of the meetings that occur. The other half, called "core", are associated with INCOSE committee, administration, forward planning, and networking activities. These include plenary sessions, technical operations planning, International Symposium planning with paper/panel/ tutorial selections, regional meetings offering collaborating with neighboring chapters, and of course social networking.

If you haven't attended any working group (WG) meetings at one of the IN-COSE International Workshops, you should feel comfortable in doing so. They are generally informal gatherings of people interested in talking and hearing about the WG area of interest, and everyone is welcome to come and participate or simply lurk, whether officially a member of the working group or not. Working group activity varies, with mixtures of round-theroom discussion, presentations, break-out workshop sessions, project planning, project work, project updates, symposia on scheduled topics, and more.

All Working Groups Tab at: <u>https://connect.incose.org</u>





Recent Meetings

Ann Hodges, Sandia National Labs

October 2015-Jennifer Maples, Aviation Superintendent for Phoenix Sky Harbor International Airport, presented the Phoenix Sky Harbor Terminal 3 Modernization Program. It was good to hear the systems thinking invested in stakeholder and terminal-user requirements. Jennifer's presentation is not archived on the Chapter's website as approval for public archiving was not obtained.

November 2015—Dr. Jimmie McEver, Senior Scientist, Johns Hopkins University Applied Physics Laboratory, and Chair of the INCOSE Complex Systems Working Group, presented the working group's activities and featured their Complexity Primer for Systems Engineers. This was well received by those in attendance is recommended for review by others who couldn't attend. Presentation slides and recording are posted on the Enchantment Chapter website.



December 2015— The Enchantment Chapter held its annual Holiday Social at Chama River Brewing Company in Albuquerque, NM on Friday, December 4. Networking started with a

5:00pm cocktail hour; followed by special commendations to Mary Compton and Bob Pierson; a stimulating talk on effective Contractor Teaming experience by Paul Mann, SES, Executive Director of White Sands Missile Range; and then an excellent order-off-the-menu dinner. ∞



Next Meetings

January 13: Systems Integration – What Are We Waiting For.

Dr. Jim Armstrong, CSEP, Industry Professor, Stevens Institute of Technology .

Ann Hodges, Sandia National Labs

Abstract: The common approach to integration is that it doesn't really begin until the assembly of actual product. However, there are many examples of where earlier actions did or could have prevented serious problems and reduced the costs of late changes. Several examples of these incidents will be explored and the lessons learned noted.

February 10: New Paradigm for Management of Complex Engineering Projects: A System-of-Systems Framework.

Jin Zhu, Ph.D. candidate, and Dr. Ali Mostafavi, Assistant Professor, Florida International University.

Abstract: Complex engineering projects consist of different interconnected networks of processes, activities, stakeholders, resources, and information. The traditional project management paradigm, which identifies complex engineering projects as monolithic systems, has failed to capture the interdependencies and dynamic interactions at the interfaces between different entities and networks in complex projects. In this research, a system-of-systems (SoS) framework is proposed towards creation of tools and techniques for integrated management of complex engineering projects. Two principles (i.e., base-level abstraction and multi-level aggregation) are used to develop the proposed framework. At the base level, complex engineering projects are abstracted as different entities (i.e., human agents, information, and resources). At higher levels (i.e., activity level, process level, and project level), different entities are aggregated via their dynamic interactions and interdependencies. Using the proposed SoS framework, new dimensions of engineering project assessment and management filed, such as the impacts of attributes of base-level entities, and projectlevel emergent properties can be explored. The application of the proposed framework is shown in a complex construction project. The findings highlight the capability of the proposed framework in providing an integrated approach for bottom-up assessment of performance in engineering projects under different uncertain scenarios.

March 9: Observations on Using Models As Specifications.

Duke Buster, Staff Systems Engineer with Honeywell Aerospace – Advanced Technology.

Abstract: When we want to understand someone's behavior, or a company wants to advertise their product's behavior, we watch a video. This holds true for teams developing complex systems - users, buyers, management, and engineers all understand the system better when they watch it in action. Of course, the problem for developers is our system does not exist yet. So, how do we capture and share the desired behavior for a system in a formal way? Traditionally, we had a text specifications document with many "shalls" that often failed with missing shalls, incorrect shalls, too many shalls, and poorly worded or misunderstood shalls. More recently, development teams have used tools like SysML and AADL to put the shalls in pictoral form. There is value in this approach since "a picture is worth a thousand words", but, one picture still has trouble conveying behavior. A few development teams have used "moving" or executable models to present behavior, but the shalls may not be clear amongst how the model is presented or displayed. This presentation will cover a few personal lessons-learned / caveats for using models, both static and executable, as specifications. ∞





October's Interface Management Tutorial – What You Missed

Mary Compton, Sandia National Labs

On October 23, 2015, twenty-four attendees learned from Matthew Hause, PTC Engineering Fellow and GTM Technical Specialist, in his tutorial entitled "Interface Management - From Theory to Modeling" for the INCOSE Enchantment Chapter.

Systems interoperate using interfaces. They exist between capabilities, organizations, people, systems, systems of systems, and so forth. Interfaces are used to support both system to system communication as well as supporting the complete set of enterprise goals. During this tutorial Hause addressed system interface -management issues and the benefits of model-based approaches. The initial focus was placed on interface information content that needs to be addressed at each level of system decomposition – from external stakeholders to system boundary to, eventually, system component-to-component. Then he shifted the focus to methods for reducing interface management theory to model-based and functional/logical design practice. He also covered system interconnection and communications, how they change, operate and evolve over time to implement mission goals and to satisfy stakeholder needs.

Stakeholder Goals and Required Capabilities

Designing interfaces begins with requirements and stakeholder needs. To design system-to-system interfaces one must define the required behavior/functionality; identify the dependencies,



those interactions with other systems and within the subsystems; identify the necessary interactions, e.g., data, physical, logical, electrical, etc.; define logical interface requirements; define interaction performance characteristics; and allocate requirements to physical interfaces. One must also pay attention to human interfaces by identifying the characteristics of the (human) users that will interact with the system, defining the required tasks to be performed, identifying the Primary User Interface Elements, and defining the Navigation Map. *Interface Definition with MBSE*

Hause used Model-Based Systems Engineering (<u>MBSE</u>) and the Department of Defense Architecture Framework (<u>DoDAF</u>) to demonstrate how to define interfaces. He began with views that pro-



vide system scope and an overall description of the system architecture. He then proceeded to demonstrate views that describe the system's mission at the highest level of operation, including defining the system interactions between use cases and the actors who perform them.

Hause then proceeded to demonstrate a number of views used to document system interfaces. Capability views are used to capture the vision for the system, describe system's high-level goals and strategy in terms of capabilities, and delineate a capability taxonomy for the system. Operational views of the system record relationships between organizations, information exchanges, and the hierarchy of activities that occur within the system. System views describe the relationships between operational activities and system functions, service functions and systems functions, operational activities and service functions, and resources and capabilities. Technical views describe standards, rules, and policies that apply to virtually all elements in the model including systems, operational activities, ports, and interfaces. Service-Oriented views provide a mapping of services needed to directly support the system operations.

Transitioning to Systems

In order for the model to be of use, the information needs to flow to the lower levels and onward to implementation. This is achieved by linking upper level to lower level model elements and onward into implementation. The end result is a model which includes both upward and downward traceability between its elements. ∞

UTEP Student Chapter Meets Deputy Consul General Eric S. Cohan

Eric Smith, UTEP Student Division Advisor

Deputy Consul General Eric S. Cohan visited the undergraduate 3331 Systems Engineering class on the 16th of November, and spoke about his personal formative experiences, as well as strategies for career success. Mr. Cohan's visit was arranged by Mr. Oscar Salcedo, Corporate Relations Director in the Office of the Dean of Engineering, as part of multi-disciplinary outreach initiatives. INCOSE Student Division officers Maria Hernandez, Vice-President, Jose Martinez, Treasurer, and Aileen Tapia, Secretary, were present, as were 16 INCOSE student members and 30 junior undergraduate students. A certificate was presented to Mr. Cohan inscribed as shown to the right. We, the students and faculty of the University of Texas at El Paso, express our appreciation for *Eric S. Cohan* Deputy Consul General Ciudad Juarez Consulate General, Office of the U.S. Ambassador to Mexico, United States Department of State for sharing his Vision, Experience, and Perspectives. given this 16^{th} day of November, 2015, in El Paso, Texas."





Systems of Systems Working Group

Judith Dahmann, The MITRE Corporation and Co-chair SoS Working Group

The purpose of the Systems of Systems Working Group (SoSWG) is to advance and promote the application of Systems Engineering to Systems of Systems (SoS), AKA SoS Engineering (SoSE).

The Body of Knowledge and Curriculum to Advance Systems Engineering (BKCASE) describes SoS Engineering as "an opportunity for the systems engineering community to define the complex systems of the 21st Century. While systems engineering is a fairly established field, SoSE represents a challenge for the present systems engineers at the global level. In general, SoSE requires considerations beyond those usually associated with engineering to include socio-technical and sometimes socio-economic phenomena."

SoS and SoSE are topics that interest a significant number of INCOSE members and organizations globally. Therefore the WG was created as a forum to share understanding of SoS and SoSE issues, good practice and background, and contribute to maturing BKCASE as a service to the wider INCOSE community.

The WG was established in 2012 to expand and promote the body of knowledge of SoS and SoSE and its benefits within the Systems Engineering community. The WG addresses the application of Systems Engineering to all types of Systems of Systems in all domains. We see diversity as particularly important in this knowledge area, as do the WG members. Working group members include SOSE practitioners, researchers and educators, from a diverse range of domains and nations and a diversity of experience levels, disciplines, organizations, and enterprises. Cooperation with other organizations with shared interest in SoSE is also an important element of working activities. This includes IEEE SoSE, the National Defense Industrial Association SoS Committee, and the International Standards Organization.

The activities of the WG focus on understanding and sharing what we mean by SoS in our various contexts, on developing guidance and advice and on informing and up-skilling practitioners. Toward these ends, the WG has worked to understand the issues facing SoSE and sharing SoSE experiences. An early activity of the WG was to develop an understanding of the challenges facing the application of systems engineering to systems of systems. The results of a survey and follow-up interaction with WG members, identified seven areas of challenge or SoS 'Pain Points' shown in the figure below (Dr. Judith Dahmann. 2014. System of Systems Pain Points. INCOSE IS2014). These pain points capture the core issues facing SoSE today and guide the work of the WG.

A major component of the working group is the online webinar series which



has been ongoing since 2012. Over 24 Webinars have been presented to date on a wide range of SoS topics. These have been very well received with up to 100 participants in the live webinar events. These webinars are recorded and posted on the SoSWG Connect Site, and continue to offer an important resource to the INCOSE SoS community. To receive notification of upcoming webinars please contact Eric Honour (ehonour@hcode.com), Oliver Hoehne (hoehneom@pbworld.com) or Peter Brook (peterbrook47@gmail.com).

Recognizing that SoSE is a maturing area of SE, research in SoSE has also been a focus of the working group. Starting in 2013, the working group has hosted several 'SoS Research Roundtables' where members share information on ongoing SoSE research. The next roundtable is planned for the International Workshop in January 2016 (IW16). Materials from these roundtables are available on the WG CON-NECT site, which also hosts products of ongoing or complete activities, including an SoSE bibliography, results of surveys on SoS methods and tools, and on recommended SoSE references.

Finally, the WG has a goal to provide leadership across the SE community on SoS guidance and standards as well as SE practice. In the past year, the WG contributed to updating the INCOSE Handbook, drafting the ISO/IEEE/IEC 15288 SoS Annex on SoS Life Cycle, and reviewing and refreshing the SEBOK SoS Knowledge Area. Work is underway for an INCOSE INSIGHT issue on SoS and on development of an SoSE primer.

So please join us at IW16 both for the SoS Research Roundtable and a workshop on SoSE Patterns offered jointly with the PBSEWG (Pattern Based Systems Engineering), as well as the SoSWG business meeting where you can learn more about WG opportunities!

SoSWG Co-chairs Judith Dahmann Alan Harding









FREE—Online and Downloadable Handbook v4 CSEP Training

John Clark, INCOSE Trainer

The INCOSE Training Working Group and the INCOSE Hampton Roads Area Chapter are presenting INCOSE SE Handbook v4.0 free training webinars for all INCOSE members and employees of INCOSE CAB organizations.

This weekly series began on Thursday 8 October 2015, will run through March 2016, and starts at noon Eastern USA.

The SE Handbook V4.0 tutorial also provides tips and personal help in SE.

A certificate of completion is provided on request. The tutorial consists of weekly 90-minute sessions.

There is no need to register, just join in. Reading of the applicable sections of the INCOSE SE Handbook V4.0 before each session is strongly recommended.

Course materials include the shared documents, tutorial slides, questions, and audio and video recordings for downloading and using at your convenience. Most slides contain speaker notes in the PowerPoint Notes View.

The schedule, as of 17-December-2015 is shown on the right. Questions? Contact john.clark@incose.org if additional information is needed.

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Enchantment Chapter SEPs October 2015

Aguilar, Virginia	Honeywell, National Radia Astronomy Observatory	CSEP 05/29/2014	
Aranciola, Demian Bearden Bill	I os Alamos National Laboratory	ASEP 01/05/2014 CSEP 03/22/2009	February 22
Gruer. Mike	Honevwell	CSEP 09/28/2013	r coruary 22
Hahn, Heidi	Los Alamos National Laboratory	CSEP 09/08/2008	April 25 - 29
Hodges, Ann	Sandia National Laboratories	CSEP 08/15/2009	May 9 - 13
Humpton, Tom	Honeywell	ESEP 03/01/2007	10 1 0y 9 15
Hunter, John	Sandia National Laboratories	ASEP 08/15/2009	June 27 - Jul
Lavin, Jim	Sandia National Laboratories	ASEP 09/26/2014	A
McGoey, Paul	Boeing Commercial Airplane Group	CSEP 03/29/2010	August 15 -
Means, Jeff	SAIC	CSEP 06/19/2007	October 31 -
Phillips, Tim	L-3 Communications	CSEP 01/05/2011	000000151
Selina, Bob	National Radio Astronomy Observatory	ASEP 07/15/2014	www.certific
Smith, Eric	University of Texas at El Paso	ASEP 05/21/2010	nrenaration-
Young, Sharissa	Retired Sandia National Laboratories	CSEP 12/19/2007	proparation

Use:	ttps://connect.incose.org/Library/Tutorials/training/SitePages/Home.aspx,
	croll to SE Handbook V/4.0 Tutorial click on Tutorial ID: 01. October 2015

Session	Date	Section & Topic
1	Oct 8	SE Handbook V4.0 Tutorial Introduction, 1-Scope
2	Oct 15	2 - SE Overview
3	Oct 22	2 - SE Overview (cont)
4	Oct 29	3 - Generic Life Cycle Stages
5	Nov 5	3 - Generic Life Cycle Stages (cont)
6	Nov 12	4.0 - Technical Processes Introduction, Appendix D
7	Nov 19	4.1 – Business or Mission Analysis Process
No Class	Nov 26	Happy Thanksgiving!
8	Dec 3	4.2 – Stakeholder Needs and Requirements Definition Process
9	Dec 10	4.3 – System Requirements Definition Process
10	Dec 17	4.3 – System Requirements Definition Process (cont)
No Class	Dec 24	Merry Christmas!
No Class	Dec 31	Happy New Year!
11	Jan 7	4.4 – Architecture Definition Process
12	Jan 14	4 - Technical Processes (cont)
13	Jan 21	4 - Technical Processes (cont)
14	Jan 28	4 - Technical Processes (cont)
No Class	Feb 4	
15	Feb 11	4 - Technical Processes (cont)
16	Feb 18	5 – Project Processes
17	Feb 25	5 - Project Processes (cont),
18	Mar 3	6 - Agreement Processes
19	Mar 10	7 - Organizational Project-Enabling Processes
20	Mar 2	8 - Tailoring Processes
No Class	Feb 25	
21	Mar 30	9 - Specialty Engineering Activities

Or...CTI's for-fee 5-day prep course

near-by schedule:
February 22 - 26 Las Vegas, NV
April 25 - 29 Albuquerque, NM
May 9 - 13 Denver, CO
June 27 - July 1 Los Angeles, CA
August 15 - 19 Austin, TX
October 31 - November 4 Las Vegas, NV
www.certificationtraining-int.com/csep- preparation-course/ ∞





Reviewing the 2015 Chapter Year

Rick Dove, Paradigm Shift International and Chapter Past President

Notable 2015 Operations:

- Revitalized UTEP Student Chapter
- Ten good-draw speakers and topics at monthly meetings
- Two social events with good draw
- Two tutorials with good draw
- · Board recruitment of two new young directors
- · Bylaws updated
- Computer purchased for web-meeting stability
- · INCOSE President David Long at April Board meeting
- New Chapter website went live
- · Recordings of meeting presentations in website Library
- Quarterly Newsletter maintained on schedule
- INCOSE Chapter Gold Award for 2014 performance



In 2015 your chapter Board, with help from you, looked for synergistic opportunities in crafting four Strategic Goals and initiating some experiments. The Chapter mission is to provide professional development value to its members. We measure Goal achievement in the reputation earned from membership. We expect some goals to take a few years to achieve, but the journey has begun.

Goal 1: Recognized as the Regional Voice of SE. Intent: Effective member and Chapter involvement with regional organizations. Status: Successful engagement with White Sands Missile Range and New Mexico Tech on activities planned for 2016.

Goal 2: THE Go-To Place for Professional Development. Intent: Exposure to SME's in the theory and practice of leading SE concepts. Status: Well received meeting speakers, topics, and tutorials—with more to come in 2016.

<u>Resources</u>

From TED, <u>watch</u>: Designer and architect Neri Oxman is leading the search for ways in which digital fabrication technologies can interact with the biological world. Working at the intersection of computational design, additive manufacturing, materials engineering and synthetic biology, Neri Oxman imagines and creates structures and objects that are inspired, informed and engineered by, for and with nature.

From TED, <u>watch</u>: What do you want to be when you grow up? Well, if you're not sure you want to do just one thing for the rest of your life, you're not alone. Emilie Wapnick describes the kind of people she calls "multipotentialites" — who have a range of interests and jobs over one lifetime. Are you one? Likely this is the nature of natural systems thinkers.

From TED, watch: The former CEO of five businesses, Margaret Heffernan explores the all-too-human thought patterns like conflict avoidance and selective blindness — that lead organizations and managers astray. Organizations are often run according to "the superchicken model," where the value is placed on star employees who outperform others. And yet, this isn't what

Notable 2015 Experiments:

- Scheduled attention to Chapter strategic goals
- Active outreach effort with White Sands and NM Tech
- Three joint Chapter meetings with three different Chapters: Southern Arizona, Central Arizona, and Colorado
- Newsletter added a regular Working Group feature
- SEP Certification training-opportunities promoted
- Monthly meeting presentations with speaker picture and Things to Think About.
- Board meetings with read-aheads and topic schedule
- Agreement with New Mexico Tech to host and co-sponsor a 2-day regional Chapter SE-event in Fall 2016 in Socorro
- Failed 2015 starts for two Chapter Projects, but learned a bit

Goal 3: Member-Rewarding Activities. Intent: Memberattracting projects and workshops that engage Chapter members. Status: We're working on it—with a 2-day SE workshop event for Fall of 2016 at New Mexico Tech in Socorro, stay tuned.

Goal 4: Reliable and Effective Chapter: Intent: Development and execution of goal-achievement Strategic and Operational Plans. Status: The Board feels good about 2015 achievement here, and expects to win the INCOSE Chapter Gold Award for 2015. But what do you think?

Our annual survey will be issued in January, and we need to hear what you think about Chapter achievement and Chapter reputation. If you have not engaged with Chapter activities, tell us why, what can be done to change that, and what you are thirsty for in 2016.

I've enjoyed serving you in 2015. ∞

Caminante, son tus huellas el camino y nada más; caminante, no hay camino, se hace camino al andar. Al andar se hace camino, y al volver la vista atrás se ve la senda que nunca se ha de volver a pisar. Caminante, no hay camino, sino estelas en la mar. Wanderer, your footsteps are the road, and nothing more; wanderer, there is no road, the road is made by walking. Walking makes the road, and turning to look behind you see the path that you will never tread again. Wanderer, there is no road, only foam trails upon the sea.

Antonio Machado, Spanish Poet, 1875-1939, from "Proverbios y cantares" in Campos de Castilla, 1912

drives the most high-achieving teams, it is social cohesion built every coffee break, every time one team member asks another for help — that leads over time to great results. It's a radical rethink of what drives us to do our best work, and what it means to be a leader. Because as Heffernan points out: "Companies don't have ideas. Only people do." ∞





New Chapter Members

Ann Hodges, Sandia National Labs

Enchantment Chapter now has 128 active members and student members. We welcome the following new Student members:

Francisco Armendariz	University of Texas El Paso	Jose Martinez	University of Texas El Paso
Miguel Armenta	University of Texas El Paso	Andres Mendez	University of Texas El Paso
Luis Bonilla	University of Texas El Paso	Mariana Meraz	University of Texas El Paso
Eira Chico	University of Texas El Paso	Margarita Muro	University of Texas El Paso
Karla Corral	University of Texas El Paso	James Newson	University of Texas El Paso
Angel De La Rosa	University of Texas El Paso	Luis Oliva	University of Texas El Paso
Paulina del Pozo	University of Texas El Paso	Maria Perez	University of Texas El Paso
Elizabeth Delgado	University of Texas El Paso	German Ramirez	University of Texas El Paso
Jose Dozal	University of Texas El Paso	Maria Rodriguez	University of Texas El Paso
Andrea Galindo	University of Texas El Paso	Pablo Rodriguez	University of Texas El Paso
Gabriel Garcia	University of Texas El Paso	Louis Steinmetz	University of Texas El Paso
Jesus Gomez	University of Texas El Paso	Samuel Terrazas	University of Texas El Paso
Ricardo Hyslop	University of Texas El Paso	Bhriannon Tiscareno	University of Texas El Paso
Alfredo Luevano	University of Texas El Paso	Jose Valencia	University of Texas El Paso
Carlos Manzanares	University of Texas El Paso	Ana Villegas	University of Texas El Paso
Maria I	Del Carmen Villaverde Mayorga	University of Texas El Pase	∞ 0

Connect to Your Community of Practice

Chapter meetings with a focus on systems engineering are held monthly on the second Wednesday, except when social events occur, with mingling, dinner, and often a speaker chosen for enjoyment by systems engineers and guests alike.

Monthly meetings feature speakers from out-of-town as well as local subject matter experts on topics of relevance.

On occasion special facility tours are arranged, sometimes as the monthly meeting, and other times on a separate schedule.

Chapter meetings begin at 4:45 pm.

After chapter news, announcements and introductions, the presentation and discussion lasts until 6:00 pm; and are carried and recorded as a web meeting for anybody to access who can't attend in person.

Tutorials with coverage on topics of interest are arranged approximately twice a year. Delivered by experts in the field, tutorials range from 1/2 day to day+ durations, and generally involve a tuition.

Mix with people who have the same professional interests as you do, but with a diversity of perspective beyond daily workmates. It comes in handy when you need help or answers to questions outside your accumulated experience, need a connection at another organization, or simply want some mind stretching thought.

Meeting announcements, event notices, and web-meeting links routinely go to all INCOSE members within the Chapter's geographic territory; as well as to names on a special *information* list open to one and all. Sign up for the *information* list with a request to the Chapter secretary listed below. ∞

Chapter Board

Ron Lyells	President
Anthony Matta	VP/President Elect
Ann Hodges	Secretary
Mary Compton	Treasurer
Rick Dove	Past President
Regina Griego	Director
Mike Gruer	Director
Heidi Hahn	Director
John Hunter	Director
Bob Pierson	Director
Ben Schaefer	Director
Eric Smith	Director
Tom Tenorio	Director
Jeni Turgeon	Director

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