

President's Message:

Finding Balance in the Turmoil



Robin Reynolds
Chapter President

It's so difficult to find balance in the turmoil and uncertainty into which we've been flung. The coronavirus situation is tragic and so I find myself struggling to focus on the usual and mundane. Isn't that silly or unimportant right now? Does it even matter? I ask myself. But then I remind myself that it's all important and must be dealt with somehow. Sorted through and prioritized. Discarded perhaps, or pushed down the road to some later post-national emergency time.

Even the less structured of us seek some level of predictability and order but everything feels chaotic. Our health, work schedules, travel, the inner workings of our city – things we mostly take for granted like access to food, medicine, gasoline, and cash. All of this has been called into question and we don't have all the answers yet. This is hard individually and collectively.

As of now, we still plan to hold scheduled board and member meetings electronically only using GlobalMeet -

the login information is on our website. [\[https://www.incose.org/incose-member-resources/chapters-groups/ChapterSites/enchantment/chapter-home\]](https://www.incose.org/incose-member-resources/chapters-groups/ChapterSites/enchantment/chapter-home) In the coming weeks, much may change and if meetings are canceled, it will be reflected on the website and announced via email using the member list.

As Systems Engineers, we recognize that the coronavirus is a systems problem of enormous proportion. It's complex and interconnected and we don't fully understand all of the components yet so the best we can do is align with guidance given by national and state leadership. Globally, we're learning as we go, in real-time.

On a positive focus, I'm grateful that many of us were able to gather at the Winter Social at Gruet Winery recently. It was wonderful to connect. At that meeting, I announced that Mary Compton was recognized by the Enchantment Chapter for her diligent and excellence service to the organization. [See Robin and Mary below.] She is currently Treasurer but has filled other roles in the past during more than a decade of being on the Board of Directors. Mary tirelessly works behind the scenes to ensure that our finances are in impeccable order. She's also pure pleasure to work with – when we comes into a room, she lights it up with her energy and smile. Thank you, Mary!

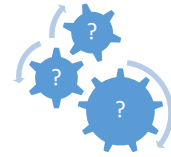
My personal plan for the coming days is to stay informed while not becoming overly focusing on the negative. Like many, I'll be telecommuting, practicing social distancing, and taking the best possible care of myself and those I love. I'm wishing each of you well-being and peace of mind. Best, Robin.



Chapter president, Robin Reynolds, awards chapter treasurer, Mary Compton (right) for her many services to the chapter.

INSIDE THIS EDITION

Finding Balance in the Turmoil	1
INCOSE Message on Coronavirus	2
The Sex of Research	3
What You Missed	4
Coming Up Next	5
Meet Your New President-Elect.....	6
New Members, Contacts, Other Useful Stuff	6



Message from the INCOSE President on Coronavirus

published on incose.org, Mar. 18, 2020

It has been three weeks since the last time I sent a message to our INCOSE family regarding COVID-19. Since then it has become a pandemic with many countries, organisations and businesses introducing new restrictions and guidance to minimise the rapid spread of the virus. The fact is the COVID-19 will be with us for quite some time and all measures taken to date will “flatten the curve of infected numbers” but potentially extend the duration of COVID-19. We therefore need to take care of our families and friends and remain positive under these trying times.

Firstly, from the INCOSE leaders, our hearts and thoughts are with you all. We would also like to send a big thank you to all our members and their families who are able to continue to offer services to their communities, whether they are “front-line responders”, the engineer on a critical project, the local transport provider or the retailer. Your contributions are outstanding.

To all members of INCOSE we encourage you to follow the guidance provided by your authorised authorities and the World Health Organisation (WHO). As such the following restrictions now apply–

- INCOSE is prohibiting all INCOSE related meetings and external INCOSE representation requiring air travel, whether domestic or international, without approval from the INCOSE Officers until 31 May 2020, at which time this restriction will be reviewed.
- INCOSE highly discourages any INCOSE related face-to-face meeting and the decision to hold such a meeting is at the sole discretion of the INCOSE meeting organiser.
 - We encourage you to consider alternative means of communication such as conference calling.
 - Social distancing and good hygiene practices are to be employed where practical.
- Any external INCOSE representation in support of another organisation’s face-to-face meeting is at the individual member’s discretion.

In parallel to the above restrictions, we have been working hard behind the scenes to support all our INCOSE activities and members.

We have a task team evaluating different remote participation applications to be made available for all members for all INCOSE related meetings, worldwide. It is likely we may have more than one recommended application with guidance on which application is best suited for a specific virtual participation, location and volume of users.

We are assisting various groups within INCOSE to restructure their programs, events and meetings to make greater use of remote participation and, where possible and practical, to reschedule events later in the year. If you need assistance, please reach out to helpdesk@incose.org.

We are keeping a close eye on the changing circumstances in Cape Town and globally with respect to the International Symposium IS 2020, July 2020. At present, the South African government has placed restrictions on travel and gatherings until further notice, which can prevent us holding IS 2020 in Cape Town. However, from further discussions these restrictions may or may not continue past May. It is unknown at this point in time. As such we are continuing to plan the event taking into consideration –

- The possibility of virtual participation for some sessions,
- A smaller scale conference with greater outreach post conference date,
- Additional hygiene services at the event,
- The possibility of delaying the event,
- Exploring options to publish finalised papers in various online proceedings.

The wellbeing of our members is our highest priority. We will continue to closely follow the recommended health and safety precautions. Likewise, we will keep you informed on a regular basis of any updates relating to COVID-19.

Keep well, keep safe.

Kerry Lunney

INCOSE President



Not For Women Only:

The Sex of Research

by Heidi Hahn

Note: The article below appeared in the Science and technology section of the print edition of the January 11, 2020 issue of *The Economist* under the headline "A novel and promising finding." Accessed from the digital edition on 20 February 2020 at <https://www.economist.com/science-and-technology/2020/01/09/the-sex-of-researchers-affects-the-language-of-research-papers>. Digital access requires login, but "guest" logins that entitle readers to view five articles per month for free are available. – Heidi Hahn

Scientific publishing: The sex of researchers affects the language of research papers

Male-authored articles are more self-promoting

"LEAN IN," advises Sheryl Sandberg, Facebook's chief operating officer, in a book of that name. Her advice to women—be more assertive to grab influence at work, rather than waiting for it to be offered—was met with scorn by some feminists. They say that women are not shying away from the higher rungs of the career ladder. Rather, they are being pushed off by unfair forces in the job market, or running into structural barriers as they climb.

A paper just out in the *BMJ*, a medical-research journal, however, offers some support for the idea that men promote themselves more, and that this helps their careers. Marc Lerchenmueller and Olav Sorenson, affiliated with Yale Business School, and Anupam Jena, of Harvard Medical School, examined the language in the titles and abstracts of over 100,000 clinical-research articles. They separated those in which both the first and the last named authors were women from ones in which one or both were men. (The first name is often a more junior researcher who led the work, while the last name is usually a senior scholar who helped guide it.) Sure enough, articles with either a first or a last male author were more likely to describe their work in positive terms.

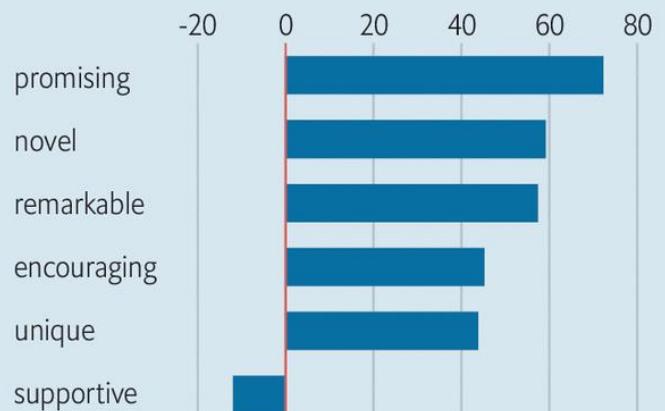
"Novel" was the most common self-applied positive term, and those papers with a male first or last author used the word 59.2% more than women-women papers did. But "promising" was even more skewed: papers with a male first or last author used this word 72.3% more than those with women first and last authors (see chart). The researchers further found that such self-promotion was associated with a greater number of subsequent citations. And both effects were bigger in prestigious journals.

One possibility to be tested is that men really do do more "novel" and "promising" research than women, and thus merit their self-praise. The paper's authors tried to make that test. They looked at the prestige rankings of the journals involved, and compared similar papers in particular research areas as carefully as possible. Although it is hard to exclude the possibility entirely, other research suggests that men are simply more into self-puffery than women are. They are, for example, more likely to cite themselves, according to an article published in 2017 in *Socius*, a sociology journal.

So should women blow their own trumpets harder? One recent paper rebuts that easy conclusion. In a study of economics research, women were subject to more comments from reviewers, and made to revise their submissions more. Women's "readability scores" (a measure rewarding short words and sentences) increased over subsequent drafts, and over subsequent papers across their careers. In trying to please stubborn reviewers, they seem to be making their abstracts simpler and more straightforward, and so perhaps also cutting extra words—like "promising".

Showvinism

Difference in prevalence of positive words
In clinical-research articles*, 2002-17, %



Source: *BMJ*

*With male first or last author, relative to papers with female first and last author

The Economist

***We cannot change what we are unaware of,
and once we are aware, we cannot help but
change. – Sheryl Sandberg***

What You Missed...

Recent Chapter Meetings

by Ann Hodges,
Sandia National Labs



❖ **JANUARY 2020:** Anne O'Neil, P.E., CSEP, Systems Engineering Catalyst and Strategist, Ann O'Neil Consultants, and Founding Chief Systems Engineer of MTA New York City Transit spoke on *Leading Cultural Change and Transformation*.

Effective Systems Engineers often serve as change agents – whether guiding introductions of new capabilities and/or new technologies as well as the corresponding impacts on processes, people and organizations. A diversifying range of industries (particularly infrastructure sectors) are beginning to recognize the need for adopting Systems Engineering practices and expertise to respond to increasing complexity and integration. Here, the impact of introducing SE, itself poses fundamental cultural change – affecting business practices, decision-making as well as the supply chains that support them. Digital Engineering represents impending change for all engineering disciplines. Where integrated capability and solutions must be delivered, Systems Engineering must be engaged and therefore has an opportunity to play a significant change leadership role. Given the importance of cultural change to SE practitioners, this presentation explored how we as Systems Engineers can lead these cultural transformations, and utilize our Systems skills in doing so. It also shared the observations and insights of a Systems catalyst engaged in these efforts.



❖ **FEBRUARY 2020:** Dr. Ali Raz, Visiting Assistant Professor at Purdue University School of Aeronautics and Astronautics, spoke on *Leading a Definition Abstraction and Implementation (DAI) Process for System-of-Systems Engineering*.

The design, development, and planning of a System-of-Systems (SoS) is a difficult task as it involves several systems, organizations, and complex dynamics between the constituent elements of the SoS. These multitude of factors make SoS difficult to comprehend and model, and SoS solution synthesis becomes a challenging endeavor. Research and development of SoS Engineering (SoSE) processes to account for complexities involved in the design, management, and operations of the SoS has been an active area of research in Systems Engineering and

Recordings of past chapter meetings are stored in the chapter's website library at:

<https://www.incose.org/incose-member-resources/chapters-groups/ChapterSites/enchantment/resources/meeting-materials>

significant progress is made in advancing the state-of-the-art of SoSE in the past decade. In this presentation, Ali reviewed the current practices in SoSE—identifying their common themes and gaps—and then presented a three phased SoSE process called the Definition-Abstraction-Implementation (DAI) process. The DAI process draws upon our decade long SoSE experience and critical lessons learned from a variety of government, industry, and academic SoS engagement experiences. The end goal of this work is to provide a domain-agnostic SoSE approach which incorporates both qualitative reasoning and quantitative analytics to create knowledge artifacts needed to support effective analysis for design and evolution of an SoS.



❖ **MARCH 2020:** **Winter Social!** The Enchantment Chapter's Winter Social took place at Gruet Winery on March 11. A good time, good food, good beverages, and some precautionary hand sanitizer was enjoyed by

22 participants. The Board considered cancelling the event due to the COVID-19 initial emergence in New Mexico with the first 2 travel-related cases, but decided to continue with the event given the perceived low risk at the time. The decision to cancel would have had a very different outcome the following week.



[See President's Message on page 1 for Mary Compton's award!]

Coming Up Next

Next Chapter Meetings / Events

by Ann Hodges,
Sandia National Labs



❖ **MAY 13, 2020:** Mary Compton, Max Danik, Marcus Glazebrook & James Nistler will speak on *Applying MBSE to Nuclear Weapons Development & Sustainment Programs at SNL*.



❖ **APRIL 8, 2020:** Joshua Salinas, Senior Member of Technical Staff at Sandia National Laboratories, spoke on *Nuclear Weapon Engineering Requirements Modeling*.



❖ **JUNE 10, 2020:** Rick Dove, CEO of Paradigm Shift International and Adjunct Professor at Stevens Institute of Technology, will speak on the *Security Foundations for the Future of Systems Engineering (FuSE)*

See: <https://www.incose.org/incose-member-resources/chapters-groups/ChapterSites/enchantment/chapter-home>



Next INCOSE Webinar

"Human Systems Integration: From Virtual to Tangible,"

presented by Guy Andre Boy

April 15, 2020 9:00-10:00 MDT (11-12 Eastern)

Nominations and Elections

INCOSE wants your help finding people with the energy, insight, and commitment to help lead the international organization as it enables, promotes, and advances systems engineering. Nominations – including self-nominations – may be made by any INCOSE member.

The Open positions are:

- Secretary (two year term)
- Chief Information Officer (CIO) (three year term)
- Director for Outreach (three year term)
- Deputy Technical Director

Nominations close 6 August. To nominate an individual, please send the name of the proposed candidate and position for which you are making a nomination to Bob Kenley, Chair of the Nominations & Elections Committee. For more information see: <https://www.incose.org/about-incose/Leadership-Organization/nominations>

Opportunity: CSEP Preparation

There is still time to take advantage of the Enchantment Chapter's discount for Paul Martin's SEP Webinar! Paul is a practicing Systems Engineer, an Expert System Engineering Professional (ESEP), and leads SE Scholar. The course is being offered for \$500 (this is \$150 off

tuition) and includes study guides, a comprehensive process flow diagram, practices quizzes, and practice exams. A discussion board allows interaction with the instructor and other students. This class is self-paced and consists of seven modules and over sixteen hours of instructional videos covering the entire INCOSE SE Handbook v4.0. You will have access to the materials for as long as you need; there is no time limit.

If you plan to take the SEP exam this year, this is an excellent way to prepare. The Enchantment Chapter plans to offer the exam later this year. Note that we had originally planned to offer the exam in the mid-May timeframe, but this will likely be pushed out due to the COVID-19 situation. Stay tuned for more details on this.



You can find more information here on our website: [https://www.incose.org/incose-member-resources/chapters-groups/ChapterSites/enchantment/chapter-events/2020/01/23/default-calendar/incose-enchantment-chapter-systems-engineering-professional-\(sep\)-certification-exam-preparation-self-paced-webinar](https://www.incose.org/incose-member-resources/chapters-groups/ChapterSites/enchantment/chapter-events/2020/01/23/default-calendar/incose-enchantment-chapter-systems-engineering-professional-(sep)-certification-exam-preparation-self-paced-webinar)

Meet Your New President-Elect!



In March, the Board of Directors was pleased to ratify the nomination of Bill Cooper to President-Elect of the INCOSE Enchantment chapter. The President-Elect position was vacant at the end of last year, and in that situation, the bylaws call for the President to nominate and the board to ratify a suitable candidate. I'm thrilled that Bill has joined the board and agreed to serve. I'm sure that his experience and expertise will serve us well and look forward to working alongside him.

Bio: Dr. William "Bill" Cooper is a Tau Technologies Senior Scientist with 20 years of uniformed military and civilian duty time on topics such as Battle Management Command & Control (BMC2), munitions, directed energy (DE) weapons, and a wide spectrum of space topics. His involvement with joint military operations spans the globe from CENTCOM to PACOM, with many stops in between. Before joining the Tau team he most recently served as the HyDRA Study Director (Hybrid Defense of Restricted Airspace) and a Pacific Air Forces



Welcome New Members!

Please welcome the following new members to our Enchantment Chapter!

Fernie Castillo - student
William Cooper - Tau Technologies
Tiffany Hall
Jose Moran - Stoneridge
Michael Severson - Leidos

Enchantment now has 116 members. That includes 103 regular members and 13 student members.

INCOSE has ~17,000 members in 70 countries worldwide.

(PACAF) Science & Technology Information Exchange Meeting (STIEM) principal organizer. In the HyDRA study he led the military utility assessment of hybrid kinetic/directed energy solutions for defense against advanced threats including Unmanned Airborne Systems (UAS). These hybrid solution sets included distributed Air Force, Army and Navy sensing, weapons and effects options. In the PACAF STIEM he led diverse groups of multi-service S&T experts to consider how combinations of current and future tech combinations could counter dynamic threat changes in the Pacific AOR. Due to the vastness of this AOR, these options included integrated Surface, Ground, Air and Space systems.

Every calamity is a spur and valuable hint. – Ralph Waldo Emerson

INCOSE Enchantment Chapter Board and Committee Leads

Board of Directors	President	Robin Reynolds	rmreyno@sandia.gov
	President Elect	Bill Cooper	bill.cooper@tautechnologies.com
	Secretary	Ann Hodges	alhodge@sandia.gov
	Treasurer	Mary Compton	mlcompt@sandia.gov
	Past President	Heidi Hahn	hahn@lanl.gov
	Director	Cheryl Bolstad	cbolsta@sandia.gov
	Director	James Larkin	jelarkin3@gmail.com
	Director	Eric Smith	esmith2@UTEP.edu
Committees	Director	Kyle Spisak	kspisak22@sandia.gov
	Outreach	Robin Reynolds	rmreyno@sandia.gov
	Prof. Development	Ann Hodges	alhodge@sandia.gov
	Collab. Engagement	Phil Bennett	pcbenne@sandia.gov
	Operations	Bob Pierson	bob.pierson@atacorp.com

The Enchanted View

is published quarterly by the INCOSE Enchantment Chapter (New Mexico & El Paso), www.incose.org/enchantment.

Editor: **Bob Pierson**
bob.pierson@atacorp.com

Published material does not necessarily reflect the views or opinions of INCOSE, the Enchantment Chapter Board of Directors, or the Editor.

Call or email your news, reviews, announcements, or other contributions and suggestions to the chapter Secretary: **Ann Hodges**, alhodge@sandia.gov.