INCOSE Foundation

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INCOSE Foundation Grants to SSWG & NSWG

The Foundation, in its first round of grants to stimulate systems engineering research, awarded $1,500 to one of several Systems Science Working Group's (SSWG)10-year ongoing projects for initial design and population of a public database on Systems Processes Theory (SPT). This research database will be available to all systems engineers for deeper understanding and use of natural science evidence for systems engineering applications, but will also be available to the international population of systems thinkers, systems scientists, and designers from all fields that address systems problems.

The Foundation also awarded $750 to a project of the Natural Systems Working Group (NSWG). At the INCOSE International Workshop, 2017 in January, a joint session of the NSWG and the SSWG focused on critiquing a new field emerging from Systems Processes Theory (SPT), Systems Pathology. It quickly became clear that there were many antecedents to Systems Pathology in systems engineering, and that a vigorous and rigorous general Systems Pathology could improve the systems engineering praxis. At that joint session, the groups announced a new International Society for Systems Pathology (ISSP), and this second grant will help fund its official initiation (just as corporate funds once seeded the foundation of INCOSE itself). Any INCOSE members interested in joining the new ISSP as founding members need only contact this author.

One unique feature of these grants is that they will be deposited in a fund for work/study students such that every dollar of the grant will not only help students in need, but also be multiplied by a factor of four and matched by two grants totaling $3,170 from the Wilson Trust & Troncale Funds for student work on closely related and synergetic projects. Thus, the total value of funding, when joined by volunteer supervision by this author, will result in a total of 1.5 person-years of work on developing the above described products. This indicates the value of the INCOSE Foundation in stimulating development of our field.

EWLSE Update

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EWLSE "Down Under" at INCOSE IS 2017

At the INCOSE IS 2017 in Australia, Empowering Women as Leaders in Systems Engineering (EWLSE) sponsored an informal networking event on Sunday (after the day's sessions), a technical session panel, and two EWLSE members presented technical papers on research related to women in systems engineering. This was EWLSE's first time scheduling an informal networking event (no other agenda) to provide the opportunity for EWLSE members and their colleagues to informally network, and many who attended the event formed dinner groups for the evening.

On Wednesday, Regina Griego kicked off the EWLSE panel on "Systems Engineering Leadership: Navigational Instruments and Guides" recommending that in order to address what may seem to be a murky path to gain greater competency and leadership as a Systems Engineer, leadership development and technical competency development need to go hand in hand. This type of deliberate competency development will provide the clear opportunities for advancement and support that predict job and career satisfaction and help retain people in the organization. Lauren Stolzar discussed how the roles that people are assigned drive leadership development in systems engineering. 'New' opportunities that stretch people will promote learning and the skills, whereas repeatedly putting people in the same role or in too many simultaneous roles will either stop or slow the learning and skill development process. Current leaders need to be cognizant of human nature and the importance of roles in developing each person's inherent leadership skills. Bill Parkins provided an Australian perspective. He compared Elements of Competency for the Chartered Credential CPEng that signifies competent, ethical engineering practice in Australia -Personal commitment, Obligation to community, Value in the workplace, and Technical proficiency - to the INCOSE functional areas of expertise reviewed as part of the CSEP (Certified Systems Engineer Practitioner) certification process. The Chartered Australian Systems Engineer (CASE) provides pathways to reduce time and cost of achieving both CPEng in Systems Engineering and the INCOSE CSEP. Heidi Hahn addressed building systems engineering leaders in a non-systems engineering culture. Heidi's talked about how the Los Alamos National Laboratory Future Female Leaders in Engineering (FFLIE) project focused on building a sense of belonging and emphasizing soft skills - such as mission and business analysis, stakeholder engagement and analysis, human-centered design, and technical writing and presentation skills - to prepare the program participants to flourish as technical leaders once they join the workforce. Suja Joseph-Malherbe joined the panel in presenting to an attentive audience of men and women who followed up the panel's presentation with an extensive discussion on leadership styles, among other topics. Bill Parkins, resident from Australia, rounds out the panel summary by adding the following, that for him: "…so many colleagues from Australia made the event successful… I quite enjoyed the experience and intend to encourage women into leadership roles in SESA, the INCOSE Australia Chapter."

Heidi Hahn presented a paper on "An Innovative Program to Further the Careers of Women as Leaders in Engineering" which addressed an initiative of the Los Alamos National Laboratory (LANL) to create a pipeline of female engineers to fill needs for a diverse mid-career workforce. The paper went into more detail on the points

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Heidi shared as part of the EWLSE panel (described previously). On behalf of authors Erika Palmer and Benedicte S Wilson, Cecilia Haskins presented "Keeping women in systems engineering: gender dynamics in the field". The paper developed systems dynamics based causal loops to show the push-pull relationship of how women are attracted to and repelled from engineering careers. The model addresses a gap in research as to why the representation of women in engineering and systems engineering is very low despite many K-12 initiatives encouraging young women to enter engineering fields. The results show that the success of the K-12 initiatives does not continue into the university, followed by a high attrition rate in part impacted by an unwelcome work environment for women. EWLSE strongly encourages papers that share research on gender and diversity related topics in systems engineering for INCOSE IS 2018.

Speaking of the next symposium, are you interested in attending, speaking during, or co-sponsoring an INCOSE / EWLSE sponsored weekend workshop on July and 8 during 'tutorial weekend' prior to the main INCOSE IS conference events in Washington, DC in 2018? EWLSE plans to hold an open leadership workshop that features national and international government, industry, and academia leaders as keynote speakers and panel members during the morning sessions, with hands-on workshop sessions each afternoon on topics such as "Embracing a Spectrum of Engineering Leadership Styles" and "Recognizing and Addressing Unconscious Bias." Send your requests and ideas on topics you would like to learn more about, speakers you would like to hear from, and interests in co-sponsoring this workshop event to: ewlse@incose.org.

Interested in joining EWLSE? We welcome you! To become a member of EWLSE please log into your account on incose.org, go to Profile Home and add "Empowering Women" to your Committees/ Working Groups. Finally, if you are interested in being matched to a systems engineering mentor, please start by emailing ewlse@incose.org.

Vision 2025

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Netherlands Version of Vision 2025 Published

Last June, the Netherlands Chapter published its version of INCOSE's Vision 2025 in the form of a PowerPoint presentation. This is the story behind how we came to setup this country-specific version of the vision. I hope that it will encourage other chapters to initiate a similar activity.

As the Netherlands Chapter had its 20th anniversary in 2016 and INCOSE published their Vision 2025 only 2 years before, we came up with the idea to do an analysis of the applicability of the vision to the Netherlands chapter. Since this was the Chapter's 20th anniversary, we also wanted to extend the horizon of the Netherlands vision another 20 years from now, to roughly 2035. To meet this challenge, we setup a group of eight experienced systems engineers, from academia, defense, rail/road infrastructure, and the space industry. This included Heinz Stoewer, one of the authors of the original Vision 2025. The complete list of names can be found in the presentation.

During a series of monthly meetings, we analyzed all three chapters of the original INCOSE 2025 Vision. In between