



Socorro Systems Summit—Collaborative Knowledge Exchange—Apr 5-6, 2019

Co-sponsors: INCOSE Enchantment Chapter and New Mexico Tech Electrical Engineering Department.

Practitioners teaming for knowledge exchange and development on issues of interest – professional development.

Day-1: Choose four from eight ¼-day topic introductions, collaboratively setting objectives for Day-2.

Day-2: Choose two from eight ½-day topic workshops, for developing collective knowledge.

Location: New Mexico Tech (NMT), Socorro, New Mexico – a charming small-community location 60 minutes south of the Albuquerque airport. To maximize participation value, we have topics of current interest confirmed by surveys and interviews, and have selected workshop leaders with collaborative-facilitation skills and familiarity with their topic.

Attendance fee: \$100, with UTEP and NMT students admitted free with faculty-advisor registration and workshop topic research completed before attendance, per faculty advisor guidance.

Special Feature – Free tour of the National Radio Astronomy Observatory (NRAO) Very Large Array Radio Telescope facility. Thursday 4-April, 11:15-14:15 (on site times, allow hour+ for travel from Socorro).

Free SEP Exam – April 4, 4:00pm, come 15 minutes early.

Registration page: [HERE](#).

Program: download pdf from [HERE](#).

Workshop Topics:

Objectives: Engaged professional development. Expanded work-relevant network. New knowledge to take home. A stimulating time-out from deadline driven work that leaves little time for thinking.

Intent: Understand problem and solution spaces of the topic area better—barriers to solution, cultural incompatibility and push back, systemic inertia, misaligned forces, and solution objectives and requirements.

- What impedes and would facilitate full life cycle consideration by system developers?
- What impedes and would enable agile systems engineering in mixed discipline projects?
- What impedes and would establish effective problem space attention over a solution focus rush?
- What impedes and would encourage mixed discipline systems engineering training?
- What impedes and would facilitate women as leaders in systems engineering?
- What impedes and would encourage and facilitate student involvement in Chapter and WG activities?
- What impedes and would facilitate dealing with complexity, emergence, and assessment in autonomous systems?
- What impedes and would encourage verification and validation of SE models?

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Keynote Speaker: Kerry Lunney, INCOSE President Elect. Kerry Lunney, ESEP, works at Thales Australia as Country Engineering Director / Chief Engineer, has been on the INCOSE Board of Directors since 2015, and is a Chartered professional Engineer.

Day 1: Speed dating. First day will have two parallel tracks of four workshop topics each. These will each be 1.25 hours in duration. Participants can attend four intros in the time allowed. Workshop facilitators will guide the session toward convergence, and optionally may begin the session with a brief 15-minute topic intro, or begin immediately with participants saying who they are, what they and their organization have of interest in the topic area, and what topic issues they would like to see as a focus for in-depth exploration on day-2. The session will converge on a concise statement of topic-resolution need, identify the target Customer(s), and select a short list of topic issues for Day-2 focus – all of these may change during the Day-2 workshop. The session will conclude with the development of a one-slide poster of intended Day-2 focus, for display at that evening's reception so that attendees can select which day-2

workshops to participate in. These 1.25 hour sessions introduce potential contributors to the collaboration as mission-driven teams, and exposes some of what is held collectively as general perspectives.

Day 2: Two dance dates. Participants will choose the two 2.75-hour workshops they will participate in, one in the morning and one in the afternoon, which don't have to be among the four intros they attended on day-1. The objective of day-2 is to develop a team-work environment, expose each participant to the thinking, practices, and knowledge of the others, and provide new contacts that can become longer term collaborative relationships. An equal objective is to have the workshop identify a clearer understanding of the problem, concepts, and knowledge that surfaces in the workshop – which will be briefed out in general session to all event participants.

A meet-and-greet reception at end of day-1 will help people socialize with new contacts. On-your-own group dinners after the reception will be facilitated, encouraged to include new contacts and not just who brought you.

An optional dinner gathering after reception (TBD).

Value Proposition for Personal and Organizational Participation

The knowledge base is exploding. The duration of value for any given piece of knowledge is shrinking as new knowledge makes old knowledge obsolete faster. This puts pressure on the speed of knowledge diffusion and a focus on the anticipation of new knowledge needs. When an organization needs to learn quicker it must shorten the time of knowledge acquisition.

Effective learning is amplified when conducted as a team sport, among people driven by curiosity and a deep-felt need to know something more – a specific something. Collaborative-learning workshops chose topics screened for real appeal to real practitioners – who have a real application for the results. Participants self-select, bring passionate questions and diverse perspectives, and never fall asleep. Collaborative learning is aided when topics do not have a clear established knowledge base, and when participants cannot claim dominant expertise.

Collaborative learning is an effective mechanism for knowledge agenda fulfillment, knowledge diffusion, collaborative culture initiation, and community of practice formation. Communities of practice are an effective mechanism for nurturing a collaborative culture and increasing the velocity and richness of knowledge diffusion.

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It isn't the expectation to solve issues here, as the issues to be discussed are necessarily open and insufficiently understood; but rather to increase the knowledge and idea base of all participants, exposed in a working environment with other people that may become professional colleagues with similar inquisitive interests. This event is for thinking people that recognize vexing issues worthy of attention, and not expecting quick answers, though some will likely surface for people who get ideas from others for immediate application.

The INCOSE Enchantment Chapter (New Mexico and El Paso, TX) has a mission to support Systems Engineering needs and membership professional development and engagement. To this end the Systems Engineering 2-day multi-workshop event is taking place April 5-6, 2019, in Socorro, New Mexico, at New Mexico Institute of Mining and Technology (NM Tech). Participation is open to all with interest, and will be promoted INCOSE-wide.

These workshops will not be tutorials, but rather working sessions on topics that can benefit from collaborative thought by people interested in learning more about what others know and think. The objective is to increase the knowledge base of participants wrestling with issues at work, that can benefit from broader exposure to what others with similar issues and interests have experienced, are thinking, and know.

After polling members and their organizations we show the eight topics referenced above, ones intended to inspire you and others in your organization to attend and participate.

Workshop facilitator selection will be done INCOSE-wide, favoring people with skills for eliciting collaborative participation, over depth of subject matter expertise, though familiarity with and interest in the topic is necessary. Workshop facilitators will open their workshop with appropriate positioning and background on the topic to focus subsequent collaborative discussion, and guide the effort toward meaningful knowledge sharing and development.

New Mexico Tech



Founded in 1889 as the New Mexico School of Mines, the New Mexico Institute of Mining and Technology (aka New Mexico Tech - NMT) is today a doctoral degree granting public institution focusing on science and engineering. The campus is located in Socorro, New Mexico, a town in the Rio Grande valley. Albuquerque is a little over an hour to the north. New Mexico Tech wins high marks for its value and the salaries of its graduates. Students can choose from 23 majors, and among undergraduates, mechanical and electrical engineering are the most popular. Academics are supported by a healthy 11 to 1 student / faculty ratio. Students at both the undergraduate and graduate levels have exceptional research opportunities because of the institute's numerous affiliated science and engineering research centers.

