

## Vision Statement



The stated purpose of the INCOSE Vision 2025 is to inspire and guide the direction of systems engineering across diverse stakeholder communities, which include: Engineering Executives, Policy Makers, Academics & Researchers, Practitioners, and Tool Vendors. My background and experience align with three of these stakeholder communities to include engineering executives, academics/research, and practitioners. I have over 30 years' experience as a systems engineer across these three domains.

At this year's IS, I was opining that INCOSE as an organization reminded me of the close-knit cost engineering community in which I was active and provided leadership on the Board of Directors, including serving for several years as Board Chair. The organization while not large, was an international organization which had overseas meetings every two years. At these gatherings, we greeted these colleagues as friends. We took lots of photos and showed them during the plenary sessions and the banquet, and shared collegial and spirited conversation around our favorite adult beverages. Sound familiar? I experience the same type of camaraderie at INCOSE at the IS and the IW. INCOSE members are well versed in their respective domains. and have no problem vigorously expressing their viewpoints and perspectives. I truly appreciate being a part of this invigorating systems engineering community!

I strongly believe in the vision articulated in the INCOSE Vision 2025 document. I promise as an elected leader of INCOSE to accelerate the implementation and execution on that vision. The key focus areas for me would be to institute innovative methods for recognizing the contributions of our members and volunteer leaders; fostering enhanced collaboration and communications across the Board of Directors, the Technical Operations and Working Groups, and the Corporate Advisory Board; and providing sound leadership and insight as we strategically lean forward and update the INCOSE Vision. As part of that future roadmap on the transformation of systems engineering, there are two key areas in which I would focus and bring valuable experience. The first is my active participation in other engineering societies to collaborate with more closely (e.g., AIAA and IEEE SMC). The other area is the need to attract more researchers to our community to increase the value of our innovation and enhance the prestige of our Systems Engineering Journal. My experience stems from technical leadership in past and current CSERs and as a co-editor of the highly downloaded 2017 CSER proceedings *Disciplinary Convergence in Systems Engineering Research*.

In the Springer textbook *Holistic Engineering Technology: Beyond Technology* published in 2010, I co-authored a chapter entitled "The Practice of Systems Engineering: A Foundation for Technical Leadership." That chapter offered perspectives of why technical leadership is so critical to the success of complex engineering projects, and how the practice of effective system engineering enhances and enables such leadership. In that chapter we added an addendum to the definitions of systems engineering to a larger context that "systems engineering is a transformative discipline that bring technical leadership and emergent value to the creation of complex systems for the benefit of society's current and future challenges." We described how the "systems engineer is in a unique position to apply broad technical and organizational insights to create a shared vision of the system architecture, and to bring together the unique capabilities of diverse disciplines and individuals to achieve success." Several of the perspectives offered in that chapter, I see implemented by INCOSE such as the creation of the Technical Leadership Institute and the identification of INCOSE contributing to the societal Engineering Grand

Challenges. INCOSE is a leaning forward, innovative organization with evolving plans for enabling the future of systems engineering. I would be honored and privileged to lead us into our exciting future.

## **Biography**

Marilee J. Wheaton is currently a Systems Engineering Fellow at The Aerospace Corporation, a Federally Funded Research and Development Center (FFRDC) headquartered in El Segundo, California. In this role, she is responsible for providing technical leadership and building capability across the corporation to include enterprise systems engineering, systems architecting, and model-based systems engineering. Her previous assignment was as the executive director and general manager of The Aerospace Institute which coordinated all education, training, and staff development activities at the corporation. Wheaton has held several executive level technical leadership positions at Aerospace, including general manager of the Systems Engineering Division (SED) and general manager of the Computer Systems Division. As general manager of SED, she provided functional engineering leadership for space systems architecture and design, acquisition and planning, systems analysis and simulation, and mission assurance. From 1999 to 2002, Wheaton was a director with TRW Systems providing leadership for cost estimation, metrics, and quantitative management goals. She is a trained CMMI appraiser and led process improvements as a Six Sigma Black Belt.

Wheaton holds a B.A. in mathematics and a B.A. in Spanish from California Lutheran University both magna cum laude. She earned an M.S. in systems engineering from the University of Southern California (USC) and is a graduate of the UCLA Anderson School Executive Program in Management. Wheaton is currently a Systems Engineering Research Center (SERC) Fellow, completing her PhD at USC in the Systems Architecting and Engineering Program.

A member of INCOSE since 2002, she was selected as an INCOSE Fellow in 2009 for her contributions as a practitioner and to engineering education and received one of the INCOSE Outstanding Service Awards in 2018. Wheaton also received the INCOSE Foundation Kossiakoff Award for best systems engineering research in 2018. She is one of the leaders in the Empowering Women Leaders in Systems Engineering (EWLSE) working group. Wheaton has been a member of the Corporate Advisory Board representing Aerospace from 2006 – 2009 and from 2015 to the current time. She has held leadership roles for the 2014 and 2017 Conference on Systems Engineering Research (CSER) to include the Technical Program Committee and Conference Management.

Wheaton is also a Fellow of the American Institute of Aeronautics and Astronautics (AIAA) and is an active member of the organization's technical committees on economics and systems engineering. A Fellow and Life Member of the Society of Women Engineers (SWE) and a past President of the Los Angeles Chapter, Wheaton has taken on high-profile leadership positions for SWE both locally and nationally. She is also a Senior Member of IEEE, and an active member of the IEEE Systems, Man and Cybernetics (SMC) Society. She is the recipient of several awards for her contributions to these Societies.

Wheaton currently serves as a member of the Advisory Board for the California State University Northridge (CSUN) Bonita J. Campbell Endowment for Women in Science and Engineering (WISE) and on the CSUN College of Engineering and Computer Science Industrial Advisory Board. Wheaton also has served as adjunct faculty for over a decade in the Systems Architecting and Engineering Program at USC.