

Vision

I am writing this on the eve of the 50th anniversary of Apollo 11's lunar landing (arguably the culmination of the greatest engineering effort in human history). I am happy to see how much attention the anniversary is receiving and hope that the films, television specials, newspaper articles, and other content raise a new generation's awareness of what was (and can) be achieved.

As part of my personal observance of this milestone, I have been reading many of the books available on the Apollo program. *The Secret of Apollo* is noteworthy because it discusses the systems engineering triumph of the program (not just the technical). Our discipline was birthed in the struggle to manage and solve complicated and complex challenges; it is exciting to see us transforming it to address the needs of today (and tomorrow).



INCOSE can (and must) continue to lead the transition of systems engineering from a document-intensive discipline to one that is model-based, transdisciplinary, and grounded in fundamental systems principles. If elected as INCOSE Treasurer, I will do my best to support this evolution by focusing on the following: Serve the membership, Facilitate volunteerism, and Accelerate the transformation.

Serve the membership: We are a membership organization and although we have a responsibility to the discipline of systems engineering (and by extension, the world) our primary duty is to our members. We must provide value to them in forms that are meaningful to them, regardless of where they are in career progression or geographic location. Chapters are critical (especially student chapters, which enable us to engage future members early and show them the value of INCOSE membership and certification). When a chapter thrives, it provides tailored engagement for the systems engineers and community it serves. We must provide resources, infrastructure, networking, and development for local leaders and volunteers to maximize the impact of our chapters on our members and their communities.

Facilitate volunteerism: The most precious resource in the universe is a moment of a volunteer's time; it cannot be purchased or stored. If wasted, it will not be freely offered again. We must carefully balance the governance and oversight needs of the society with volunteer interests and availability. We must identify "coalitions of the willing" who want to give us their time and talent and support them with maximum "lift" and minimum "drag" and demonstrate that we value their contributions.

Accelerate the transformation: INCOSE can and must accelerate the transformation of systems engineering to a model based discipline; we cannot wait until 2025. We must foster experimentation, standardization, and information exchange. INCOSE also must help develop systems engineers who are competent and can fill the shortfall in talent that is the greatest threat to our discipline's continued success and growth. Acceleration will also depend upon engaging other stakeholders and organizations to foster a world-wide, multidisciplinary community of systems practitioners, model creators, and model consumers.

If elected, it is my intent to keep these three guidelines in mind as I serve as Treasurer and help shape INCOSE's strategic and tactical actions. My experience in professional society leadership spans nearly thirty years and gives me sufficient depth to identify and exploit opportunities. That journey really began in 1981...as I walked back to my seat at the local science fair whistling "We're in the Money." I had just won the fair's largest cash award (a VERY big deal to a seventh-grader) and was invited to the American Society for Metals Cleveland Chapter's awards banquet. That meeting, and the others that followed it, was my introduction to the culture and value of technical societies. It put me on a path that led to the International Science & Engineering Fair, a full-tuition scholarship, and my career. It also made me into a zealot for technical societies (I am still a member of ASM International because it was the first society to give me opportunities...I left metallurgy as a profession twenty years ago).

A handful of years after I joined the workforce I began to repay my debt to ASM Cleveland by volunteering on ASM Detroit's executive committee and coordinating professional awards for the Detroit science fair. The Engineering Society of Detroit invited me to serve on its Strategic Planning Committee and that triggered a cascade of other involvement. In the two decades since then, I have served in various leadership roles at the local, state, and national level in ASM International, SAE International, the Society of American Military Engineers, the National Society of Professional Engineers, and TMS (The Minerals, Metals, and Materials Society). I was selected as a TMS Young Leader Intern, launched numerous chapter websites, and helped NSPE, ASM International, and the Herbert Hoover Presidential Library Association create international science fair awards.

I served ASM Detroit for fourteen years and was the longest-serving board member, youngest Chairman, and first-ever two-time Chairman in its history (leading it to Chapter of the Year status). When I joined INCOSE, I became a Michigan Chapter officer, contributed to its Gold Circle Awards as Vice-President and President, and organized two regional conferences. I was a co-lead for the Model-Based Conceptual Design Working Group and am a member of the Certification Advisory Group. Over the course of my volunteer career, I have held four Treasurer positions, including two for more than a decade.

My proudest achievement to date is the founding of Sigma Theta Mu, the systems honor society, in conjunction with INCOSE's twenty-fifth anniversary. It is my hope that the society will have the same transformative impact on some unknown student that ASM Cleveland's long-ago recognition had on me.

I am confident that my varied experiences, track record of successful execution, and demonstrated ability to identify and exploit new technologies and opportunities qualify me to serve as INCOSE Treasurer. I hope that you will trust me to steward INCOSE's financial interests and operations.

Biography

Michael J. Vinarcik is a Chief Solutions Architect at SAIC, an adjunct professor at the University of Detroit Mercy, and a Visiting Professor at CIDESI (Mexico). He has nearly thirty years of automotive and defense engineering experience. He received a BS (Metallurgical Engineering) from the Ohio State University, an MBA from the University of Michigan, and an MS (Product Development) from the University of Detroit Mercy.

Michael has presented at numerous regional and national conferences and symposia (notably those of INCOSE, the National Defense Industrial Association, and the American Society for Engineering Education). He contributed chapters to *Industrial Applications of X-ray Diffraction*, *Taguchi's Quality Engineering Handbook*, and *Case Studies in System of Systems, Enterprise Systems*, and *Complex Systems Engineering* and a case study to the *Systems Engineering Body of Knowledge (SEBoK)*. He has won numerous awards, including the 2017 Cameo Award for Modeling, Simulation, and Analysis Excellence for his thought leadership in MBSE and the 2017 ASEE Best Paper Award (Systems Engineering Division).

Michael is a licensed Professional Engineer (Michigan) and holds INCOSE ESEP-Acq, OCSMP: Model Builder – Advanced, ASQ Certified Quality Engineer, and ASQ Certified Reliability Engineer certifications. He is a Fellow of the Engineering Society of Detroit and is the President and Founder of Sigma Theta Mu, the systems honor society. His YouTube channel, *Systems Architecture Guild*, freely shares systems architecture, engineering, and modeling best practices with a worldwide audience (as of July 19, 2019: 498 subscribers, 130 videos, 41.6k views, 112.7k minutes (viewed)).