

## Walter J. Trybula, Ph.D., BIOGRAPHICAL SKETCH (Q4 2014)



**Walt Trybula, Ph.D., MBA, IEEE Fellow & SPIE Fellow**, is a Director of the *Trybula Foundation, Inc.*, and an Adjunct Professor in the Ingram School of Engineering at Texas State University-San Marcos. Dr. Trybula is a technology futurist and has focused his activities on evaluating technology trends and applications in emerging key industries with an emphasis on their impact on economic development and job creation. Dr. Trybula is involved in developing technology choices for emerging technological requirements. His current technical focus is threefold: nanotechnology, energy, and semiconductors. His business focus is on strategy development and technology insertion into the organizational structure. He is involved with a number of state and local organizations and committees focusing on economic development through business creation.

Dr. Trybula is active in disseminating information on the importance of the appropriate insertion of emerging technologies into the communities. He authored the State of Texas teaching module on "Nanotechnology and Economic Development" and presented to numerous organizations including the "Nanoelectronics, Photonics, and NANO-SAFETY" topic for the U.S. Congressional Nano Caucus. He is an IEEE CPMT Distinguished Lecturer and an invited speaker on nanotechnology issues.

Dr. Trybula has been continuously involved in various aspects of nanotechnology since 1979 when his development effort on high power switching required the molecular bonding of metals to ceramics. His research efforts in 1996 at SEMATECH led to investigations of distortions in the single digit nanometer range. Additional efforts in 2002 focused on the existence and impact of "nano-bubbles" on the creation of leading edge semiconductors. As the latter work was developing, his interest in the impact of nanotechnology on people and the environment increased. His white paper on a systematic approach to NANO-SAFETY was produced in 2007. He is promoting a systematic approach to NANO-SAFETY and NANO-Health, with special emphasis not only on the effect on people and the environment but also the development of educational programs to train future workers. He has been involved in early efforts in on-site industrial surveys of nanotechnology safety, a researcher in the OSHA award that developed a one day course on Nano-Safety for workers, developed four teaching modules for the NSF award to create two courses in Nanotechnology Safety Education, and is involved in published chapters in Nano-Safety, Nano-Risk, and Addressing Unknowns in the handling of Nanomaterials.

A SEMATECH Senior Fellow, Dr. Trybula spent 13 years working on leading edge technologies. He is involved in the International Technology Roadmap for Semiconductors [ITRS] serving on the Litho Technical Working Group [TWG] and has chaired the US Modeling and Simulation TWG. In his role at SEMATECH, he was involved in the development of the Texas State Strategy on Advanced Technology and was a member of the nanotechnology committee of the Texas Workforce Commission Advanced Manufacturing Working Group. He was a member of the steering committee for the Texas Alliance for Nanoelectronics (TxAN) and was co-chair of the Texas State Strategy on Advanced Technology Working Groups for both nanotechnology and MEMS.

Prior to his current assignments and SEMATECH, Dr. Trybula had been with two start-up companies. He was President and Founder of Ivy Systems, Incorporated, which is a Virginia electronics manufacturing automation company, and was a Director at Compunetics, which is a computer integrator. Prior to Ivy Systems, he was with the General Electric Company for 12 years, the last nine of which were on corporate staff as Senior Consultant in electronics manufacturing technology and product commercialization evaluation. He has over 200 referred publications.