

**MEMORIAL RESOLUTION OF THE FACULTY
OF THE UNIVERSITY OF WISCONSIN-MADISON**

ON THE DEATH OF PROFESSOR EMERITUS ALI A. SEIREG

Giants come in many forms. We tend to think of them as large, strong men with booming voices and flamboyant gestures. However, they can also be small of stature, soft-spoken, and mild-mannered - yet they are giants because of their intellect and the ideas that their intellect generates, and the impact of those ideas. Ali Seireg was such a giant.

Background and technical achievements

Ali Seireg was born in Mehala, Egypt, October 26, 1927. He earned his Ph.D. in Mechanical Engineering from the University of Wisconsin-Madison in 1954. He started his career at Cairo University in Egypt, and, from 1960-1965, he was a member of the faculty at Marquette University after having worked as a research engineer for the Falk Corporation. He joined the UW-Madison Department of Mechanical Engineering faculty in 1965 and he was active here, where he was the Kaiser Chaired Professor, until he passed away on September 3, 2002 at the age of 74. From 1985 onward, he split his time between the University of Wisconsin and the University of Florida, where he held the Ebough Chaired Professorship in Mechanical Engineering. He was a truly exceptional engineering scholar and teacher who achieved world-wide recognition for his pioneering work in several areas related to mechanical and biomedical engineering design. His technical accomplishments were numerous and impressive. He was one of the few, unusual men who achieved excellence in a number of different areas related to engineering design. While his significant technical accomplishments are too numerous to mention, a few bear special mention. He devised a rational gear-tooth strength method that replaced the long-standing Buckingham beam method. He was the first to develop a mathematical model of the entire human musculo-skeletal system that was capable of predicting the muscle and joint forces and interactions given a motion input. He was among the first to develop procedures for applying the principles of tribology to gears, rotors, and bearings. He was a leader in the application of optimization techniques to the design of mechanical devices and systems. He pioneered efforts in applying design principles to biomechanical engineering problems related to walking, diving and swimming.

Professor Seireg was as prolific as he was creative. He authored more than 250 refereed publications and delivered more than 120 invited lectures and keynote addresses. During his career at the University of Wisconsin, he advised more than 80 M.S. students and 50 Ph.D. graduate students. Many of his former students went on to achieve prominence in both academia as well as industry. He was the principle author of four books and he contributed chapters to four others.

Professor Seireg was a model of the ideal academician. Through his research and teaching, he brought about significant changes in the way that engineering is done. He also was a highly regarded technical consultant who was able to bring his intense knowledge of fundamental engineering principles to bear on practical engineering problems. Professor Seireg was also a leader in service to the engineering profession. His service to the American Society of Mechanical Engineers was legendary – he served in a leadership role on dozens of committees. Most significantly, he was a highly recognized leader of ASME’s Design Division and the founding chairman of the ASME Computer Engineering Division as well as the founder and originating editor of ASME’s Computers in Mechanical Engineering Journal. He also served the American Gear Manufacturers Association in numerous capacities, including as president of the Gear Research Institute form 1983-1993. He was a founding fellow of the American Institute of Medical and Biological Engineering and the founding editor of SOMA, Engineering for the Human Body.

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His work was widely recognized, throughout the United States as well as the world. Among his many accolades: he received the 1970 George Westinghouse Award of the American Society for Engineering Education, he was a fellow of ASME, a recipient of the Limonosov Medal from the USSR Academy of Science, an honorary member of the Chinese Mechanical Engineering Society, a recipient of the Kuwait Prize for Science, a Foreign Member of the USSR Academy of Science, a recipient of the ASME Design Automation Award, the ASME Machine Design Award, the ASME Richard Memorial Award and the ASME Design Division Centennial Medal as well as four other Centennial Awards for service to ASME. At the University of Wisconsin-Madison, he received the Benjamin Smith Reynolds Award in 1982.

Personal attributes

Professor Seireg's technical and professional accomplishments have undoubtedly made a significant impact on our technology and our society as a whole. On these contributions alone, he stands out as a giant amongst his colleagues. But he also stands tall as a person who generously dealt with his acquaintances, colleagues, students, and friends in a remarkably kind and gentle way. While his peculiar filing system that completely filled every corner of his office desk, chairs and floor with uncountable stacks of papers and books was intimidating to unwary visitors at first, Ali warmly welcomed all by clearing space to sit and chat. He was always willing to share his knowledge and wisdom with anyone who would spend time with him. He told his students "When someone wrongs you, treat them for who you are, not who they are." Not only did he teach this, but he lived it as well. Ali was an outstanding mentor to young professors – he didn't show them how to get grants, but he showed them how to understand the impact that we have on our students' lives, and how important it is to help them develop, both professionally and personally. Ali was an honest, straightforward man who could always be counted upon to tell the truth, and even when the truth hurt, he was able to seek out and find the positives that could turn impending failure into achievement, despair into hope, and troubles into opportunities. He was an optimist who saw the world through the prism of an engineer's eye who believed that all problems could be solved, and he worked mightily to solve the ones he faced and to educate others to solve the ones that he couldn't get to.

Closure

Sir Isaac Newton once said "If I have been able to see further than others, it is because I have stood on the shoulders of giants." Those of us that have had the benefits of sharing in Ali's wisdom can say the same thing, because we have been blessed with the companionship of a true giant.

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