
Memorial Resolution of the Faculty of the University of Wisconsin-Madison On the Death of Professor Emeritus John J. Moskwa

John J. Moskwa — January 20, 1950 – June 3, 2017

On the lips of a master, a trumpet calls out notes of magnificent clarity and brilliance. In John Moskwa's hands, the brilliance of his trumpet call brought forth exhilarating sounds that thrilled the senses and brightened the soul. The dedication and discipline that he brought to developing his trumpet playing skill at a young age placed him well along the path to a career as a professional musician amongst the world's finest.

While he maintained his life-long love of music, John's life veered off in a decidedly different professional course, leading to an outstanding career in Engineering, in which he scaled even greater heights.

Professor John J. Moskwa died on June 3rd, 2017 after battling cancer. He was born on January 20, 1950 in Harrisville, Michigan and raised on a farm until age eight, when his family moved to Detroit. As a child he loved music, and he studied and performed music seriously throughout high school and his twenties. Meanwhile, a job as a diesel mechanic developed his interest in engineering, ultimately leading to study at Henry Ford Community College, the University of Michigan, and MIT and then on to a professorship at the UW-Madison. He lived in Madison for the rest of his life, retiring from the UW in January 2016. He is survived by his two children - in whom he took great pride - Joe and Susan Moskwa, and his wife - who he loved deeply - Arlinda Michael.

Musician

Professor Moskwa was an accomplished professional musician who studied and performed at Tanglewood, and then at the Cleveland Institute of Music, where he was Principal Trumpet under conductor James Levine and played a number of operas with the Cleveland Orchestra.

After a position teaching trumpet at the University of Guadalajara and playing Principal Trumpet with the Symphony Orchestra of the Northwest Professor Moskwa returned to the US the following year, playing briefly with the Detroit Symphony and then with the Bloomington, MN Symphony. Even after his professional interests turned toward engineering, he continued to play music throughout his life, regularly performing trumpet with organ, choir, or chamber ensembles in Madison at Bethel Lutheran Church, Luther Memorial Church, and other venues.

Mechanic & Engineer

Professor Moskwa started his professional mechanical career as a diesel mechanic and proceeded to work as an engineer at Cummins Engine, at GM Research Labs, and at the US Army Tank Automotive Command where he installed dynamic powertrain models on their Cray supercomputer and analyzed components of advanced tank designs. While on sabbatical in England, he was a Senior Technical Specialist in the Advanced Powertrain Group for Ford's R&E Centre. He was also a Visiting Scholar at Cambridge University and worked with students there on transient test systems.

Prof. Moskwa was founder and President of Powertrain Consultation & Research, LLC, an engineering consulting company. He consulted with many of the largest domestic and international manufacturers of engines and powertrain systems, and provided expert testimony in civil litigations, US Patent Office proceedings, International Trade Commission actions, and in criminal litigations on behalf of the US Department of Justice.

Professor – Department of Mechanical Engineering, UW College of Engineering (COE)

During his 28-year career at UW-Madison he developed and taught courses in linear and nonlinear automatic control, vehicle dynamics and design, powertrain systems, dynamic systems, thermodynamics, and hybrid vehicles. He collaborated with colleagues in the ME, Ch & BE, and ECE Depts. He established and directed the Powertrain Control Research Laboratory (PCRL) to bring powertrain transient and systems research into the ME Dept. He established and led the COE's Hybrid Electric Vehicle program—the largest student project program in the College's history, and still active today. He helped develop both the innovative *Introduction to Engineering* course and the *Teaching Improvement Program* in the COE. He was awarded 5 patents, published over 80 peer-reviewed publications and over 30 internal technical reports for various companies, mentored over 45 Master's and/or Ph.D. students who performed research in PCRL, and supported numerous other students and international visiting scholars who worked on research projects in PCRL. His research and teaching garnered numerous awards, among them the prestigious ASME Draper Innovative Practice Award and the SAE Cole Award for Automotive Engineering Innovation. Professor Moskwa was the only university professor in the world to have received this award in its 39-year history. MIT Technology Review called it “SAE's most prestigious award for automotive-engineering innovation.” He was a Senior Member of IEEE and a Fellow of both SAE and ASME.

Professor Moskwa's PCRL was a world-class laboratory that showcased the highest standards of engineering excellence reflecting the brilliance, ingenuity, and creativity of its founder and director as well as displaying the highest standards of quality workmanship characteristic of a man who had been a professional mechanic earlier in his life. John's lab drew visitors from around the world who came to discuss the details of, among other topics, a high-bandwidth hydrostatic dynamometer that could emulate the dynamics of vehicle powertrains with multi-cylinder engines, while itself having only a single-cylinder engine. During these laboratory tours, the visitors were often treated to a special thrill (and trill) that could have been created only by someone with John's special set of talents. Who else but John Moskwa could have developed an engine dynamometer utilizing real-time software and hardware-in-the-loop control with such dynamic range that it could not only play a vital role in developing advanced powertrain controls but it could also perform a virtuoso rendition of *Bach's Partita in E for Unaccompanied Violin* as well as a stirring performance of *On, Wisconsin!* ?

John truly loved his work and took great joy and justifiable pride in his PCRL. The happiness that John enjoyed in his laboratory is, of course, what you would expect from a man who had been an arranger and trumpeter in a band that played that happiest of all music – the Polish Polka.

In the Arena

While a recitation of his many and varied accomplishments give ample credit to a career well done, no memorial resolution for John Moskwa could be complete without mention of his strength of character and his integrity. As President Teddy Roosevelt noted, “It is not the critic who counts; not the man who points out how the strong man stumbles credit belongs to the man who is actually in the arena,”

John lived those words. He was a champion of shared faculty governance and had first-hand experience in dealing with the University's Committee on Faculty Rights and Responsibilities. As a mentor to students, graduate students and young faculty he consistently fought for the rights of other individual faculty and encouraged his colleagues to defend their rights and fulfill their responsibilities to their students and colleagues and the University. Late in his career, he was a member of the University Faculty Senate and he used this position to help his colleagues understand their role in addressing the broader issues facing the University. He understood the importance of not compromising your principles in carrying out your responsibilities as a member of the faculty.

John's understanding of the faculty's role in providing direction to the University also helped govern his approach to his teaching and his interactions with his students. He well-understood that the engineering

profession bears a great responsibility in providing for a safe, efficient, effective, and prosperous society. The profession requires rigor, without room for careless work. He recognized that engineers need to develop and hone their technical skills to a high level in order to avoid making mistakes that could end catastrophically. From his days as a professional musician, he had learned his oft repeated dictum “Amateurs practice to develop the skill to play the piece right – professionals practice to *never get it wrong*.” He carried this attitude over to his engineering; he was a demanding professor and taught his students that they were members of a great and proud profession, and that it was imperative that they recognize that the profession demands great effort and results from its practitioners.

Coda

While the brilliant notes of John’s last trumpet call have faded away, the brilliance of his engineering accomplishments still sound loud and clear in paving the way for even further advancements in the field of powertrain engineering and beyond, and the friendships that he inspired through his integrity, good will, and generosity will continue to reverberate as a memorial to his life well lived.

Memorial Committee: Professors Frank J. Fronczak (Chair), Christopher Rutland, Tim Osswald