

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

ON THE DEATH OF PROFESSOR EMERITUS CHARLES H. DAVIDSON

Charles H. Davidson, professor emeritus of electrical and computer engineering and of computer sciences, died November 7, 2008 at age 88. He was born in Washington, D.C. December 10, 1920. He received his B.S. in physics from American University and his Ph.D. in physics from the University of Wisconsin in 1952. He joined the faculty of the Department of Electrical Engineering in 1954 and retired as professor emeritus in 1987.

Professor Davidson was a computer pioneer at the University of Wisconsin. In 1950, Gene Amdahl and Charlie, Ph.D. students in the Department of Physics, conceived a unique design for a digital computer. They gained the support of electrical engineering professors Harold A. Peterson and Vincent C. Rideout, who encouraged them to build a computer of their design, obtained financial support from WARF, and provided space in the Engineering Building. Thus began the construction of the Wisconsin Integrally Synchronized Computer (WISC) in 1952. Amdahl soon left the university for IBM where he became the chief architect of several highly successful IBM digital computers, and still later formed the Amdahl Computer Corporation. The WISC project continued under the direction of Professor Davidson.

The WISC computer was built over the next several years by graduate students in electrical engineering, using mostly World War II surplus vacuum tubes and a purchased 2000 word rotating magnetic drum for storage of both instructions and data. Just how advanced was the WISC design in 1952 can be appreciated with the historical knowledge that the campus computing facility in the early 1950s was an IBM Card Programmed Computer (CPC), consisting of a punched card reader, a calculating punch and a printer. With the CPC, programs and data were entered on punched cards (no stored program capability). The CPC had 20 words of storage, for data only – not terabytes, not gigabytes, not megabytes, not kilobytes – but 20 words of memory!

The WISC served as a valuable research tool for almost ten years before the project was terminated, but not before five Ph.D. and additional Master's Degrees were awarded students who contributed to the design and construction of the WISC by their research. Many graduate and undergraduate students were introduced to computers and to machine language and assembly language programming on the WISC. The WISC subsequently passed through several owners and is now in a computer museum in California.

When the College of Engineering decided to establish the Engineering Computer Laboratory (ECL), Professor Davidson was the obvious choice for the director. He led the ECL from 1962-1982, and generations of engineering students learned their computer skills from him. Under his leadership, graduate student and undergraduate student assistants in ECL developed specialized software for the ECL computers. Professor Davidson developed constantly updated slide shows that introduced the use of computers to generations of engineering students. These slide programs were run hourly for many years so large numbers of engineering students could easily and quickly learn how to use digital computers.

He helped in the development of computing on the Madison campus as a member of many computer-related campus committees. He also served on national committees of the Association for Computing Machinery (ACM) and the American National Standards Institute.

Charlie had a joint appointment and taught computer courses in the Department of Computer Sciences. He developed and taught a very successful course on the fundamentals of computing for non-majors, drawing students from business, nursing, law, etc. He kept his courses up to date, no small task in an area that had

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such phenomenal growth in the technologies and in the scope of applications during his career. He did not neglect to impart to his students the societal impacts of computers. He and Computer Sciences Professor Eldo Koenig coauthored the book “COMPUTERS: Introduction to Computers and Applied Computing Concepts.”

On August 26, 1952 he married Hermine Sautoff, who preceded him in death in 2007 after 55 years of marriage. They enjoyed camping with their family, sailing on Lake Monona, skiing and travel. They participated in numerous Elderhostel programs in the United States and in Portugal, Greece and Germany. They were active in their community and most gracious hosts. Both loved square dancing, and Charlie was a well-known and gifted square dance caller. Using his skills as a teacher, he would take a group of people who had never square danced before, walk them through the basic steps, and soon have them dancing well and enjoying the experience. The Davidsons made sure that the home that they had built on Lake Monona had a living room large enough to accommodate several “squares” and frequently held dances there for friends and colleagues.

He is survived by his children, Rob Davidson of Madison and Liese (Jim) Munter of Anchorage, Alaska, and by his grandchildren Lynn, Katie and Scott Munter and Shawn Bohman.

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