

U-M Computer Giant Lauded By Colleagues

By Larry Bush
SCIENCE EDITOR

Dr. Robert C. F. Bartels, head of the University of Michigan computing Center from its founding in 1959 until his retirement this fall, has had a great impact on scientific research here and elsewhere.

The computer has become the scientist's good "right arm," allowing the researcher to accomplish in days what in many cases formerly took years.

And Bartels has helped keep the U-M a leading research institution through equipment changes with advances in computer technology that have further speeded up the research process.

Dr. A. Geoffrey Norman, U-M vice president-emeritus for research, called following his recent return from giving a scientific paper in New Zealand to remind us of the Computing Center director's retirement and contributions.

BARTELS, HE said, has maintained "a very delicate and elegant operation, steering a very careful path between costs and resources.

"He led the Computing Center through several major equipment changes, and people he has trained now head computing centers at other universities. His impact on computing centers at other institutions has been very great."

A professor of mathematics as well as director of the Computing Center, Bartels has also gained wide recognition for his application of mathematics to elasticity, hydrodynamics and numerical analysis.

At a recent retirement luncheon at the center, he was presented with a Processor Technology SOL micro-processor, purchased with donations from friends, among other gifts.

DR. ARTHUR W. Burks, U-M professor of computer and communications science who was one of the designers of the first electronic computer, ENIAC, during World War II,



DR. ROBERT BARTELS

was among those present.

(A portion of that first high speed, electronic digital computer is enclosed in a glass case in the U-M Frieze Building and the rest of the 100-foot-long computer is at the Smithsonian Institution in Washington, D.C.)

In 1959, the U-M board of Regents established the Computing Center on the recommendation of a committee chaired by Vice President-Emeritus William Stirton, and named Bartels its director.

"Bartels' experience with computers dated back to 1954 at Oak Ridge National Laboratory, where he had used an early computer in the study of magnetohydrodynamics (which deals with conductive fluids and their interactions with magnetic fields)," Blanchard Hiatt wrote in an issue of "Research News" devoted to the history of computing at Michigan.

HE ALSO had worked with computers on campus and was a member of a U-M project sponsored by the Ford Foundation on use of computers in engineering education which involved training engineering professors from Michigan and out-of-state schools in computer use.

First located in the North University



The Science Beat

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Building on the Central Campus, and initially funded by a \$150,000 grant from the National Science Foundation, the Computing Center was administratively under Dr. Ralph A. Sawyer, dean of the Graduate School who also served as the first U-M vice president for research.

When Norman succeeded Sawyer as vice-president for research in 1963 its administration was transferred from the Graduate School to his office, but Bartels remained in charge of the day-to-day, "nuts and bolts" operation of the center.

In the fall of 1959 a larger IBM 704 that was 100 times faster in some operations than the 1955 IBM 650 that preceded it, was installed in the center.

BUT THIS was only the first of several changes Bartels supervised to keep pace with changing computer technology. A more versatile IBM 709 replaced the 704 in August 1961, and a year later the six times faster IBM 7090 replaced the 709.

A Computer Advisory Committee, chaired by Dr. Donald L. Katz, professor of chemical engineering, in 1964 recommended that the computing Center move in the direction of time-sharing.

Norman, according to Hiatt, gave credit to U-M computer specialists Bartels, Bruce Arden and Franklin Westervelt for developing a time-sharing system which "greatly influenced the supplier's hardware and contributed greatly to the future of computing at Michigan and in the nation as a whole."

The IBM 360-67 which contained U-M specifications and provided flexibility for a variety of types of uses was installed in December 1966, and in 1968 a second processor was added. It was eight times faster than the 7090.

IN 1971, a new \$1.5 million computer Center Building with 900 telephone lines serving it was completed on the North Campus. The 360-67 computer system that had been moved into it from the Central Campus was sold in January, 1975, and replaced with an IBM 370-168 with three times the job-processing capability.

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The recently retired director was born on Oct. 24, 1911, in Brooklyn, N.Y., and was graduated from the University of Wisconsin in 1933. He earned his master's degree in 1936 and his doctorate in 1938 at Wisconsin, and also studied at New York University.

Bartels first joined the U-M faculty in 1939 as an instructor in mathematics, and during World War II, from 1942 to 1945 was absent on leave as an aeronautical engineer with the U.S. Navy Bureau of Aeronautics.

HE RETURNED to the Ann Arbor campus as assistant professor of mathematics, was promoted to associate professor in 1950 and to full professor in 1957. A member of various professional organizations, he has served on a number of national committees as well as U-M committees.

But most important has been Bartels' role in making the U-M Computing Center one of the finest in the country for serving the ever expanding needs of scientific research and teaching here and at other Michigan universities through the MERIT network.

Dr. Allan R. Emery, the computing Center's associate director, has now succeeded Bartels as acting director until a permanent replacement is named. But whatever the future brings, the name of Robert C. F. Bartels will remain synonymous with computing at Michigan.