Memorial Resolution of the Faculty of the University of Wisconsin-Madison
On the Death of Professor Emeritus A. Burr Fontaine

Burr was a man with many talents and many interests. He was born in Green Bay, Wisconsin, on May 26, 1927, and died September 23, 2017 at age 90.

After graduating in 1945 from West High School in Green Bay, he volunteered to join the US Navy. His naval career was cut short by the end of the World War II in August 1945. After returning to civilian life, he earned the degree of BSEE in Electrical Engineering (EE) from the University of Wisconsin-Madison. He pursued graduate studies at the Ohio State University, earning MS and Ph.D. degrees. Following graduation from Ohio State, he worked for 5 years for IBM at Poughkeepsie, New York.

He met his future wife, Mary, while attending Ohio State University and that union of 66 years produced two sons, Burr, a medical doctor, now engaged in medical research in Madison, and Tom, recently retired as a professor of engineering at South Dakota State University, in Rapid City.

Burr returned to Wisconsin in 1960 after the University of Wisconsin-Madison hired him to join the faculty as an assistant professor in the Department of Electrical Engineering. He advanced through the ranks and retired in 1989 as a full professor after a career filled with teaching and research.

Burr taught undergraduate and graduate courses on many different subjects and taught one of the most popular elective courses, a course in applications of microprocessors. Students were required to design, build and demonstrate measuring equipment, process controls, or other applications of the student's choosing, using a state-of-the-art imbedded microprocessor digital computer chip. To make it easier for the students to use several different commercially available microprocessors, Burr wrote computer programs and subroutines for student use to translate between words like ADD, SUBTRACT and numbers 0, 1, …9 and the computer language of 0's and 1's. Professor Fontaine helped to educate engineers in industry to the new digital computers by teaching, with other faculty members, short courses in the applications of digital computers.

Burr played an important role, working with ECE Professor Bill Birkemeier, in a research program on a form of radio communication. In 1962, research opportunity presented itself involving tests of a 200-mile microwave link for ways not only to understand how a microwave signal propagated, but to use the received signal to measure the wind speed at various levels in the clear atmosphere through which the signal passed.

The Collins Radio Corporation of Cedar Rapids, Iowa, offered to transmit appropriate test signals from their microwave facility near Cedar Rapids if the ECE department would erect a 30-foot antenna containing receiving hardware which Collins would supply. Professor Fontaine was part of the university research team and Professor Fontaine was in charge of the first experiment in which the transmitter and receiver beams were pointed up-wind and then down-wind. The Doppler shift in frequency went from plus to minus -- the first ever-observed cause of the fading.

These results caused Collins to improve its receiver design which then led to successful mapping of refractive layers in the atmosphere together with their wind speeds. The research group including Professor Fontaine and Graduate students took data, wrote and published a number of papers and gave many talks. Federal funding agencies took notice and requested the use of their results to place parabolic antennas exactly on the Great Circle where they were most effective. Professor Fontaine's expertise with computers and computation were major parts of these accomplishments.

(continued)

Burr Fontaine's other activities.

a) Burr was a Boy Scout Troop Leader. The Scouts learned an appreciation of animals and nature in all of its forms from camping in every month of the year.
a. Burr enjoyed water color painting.
b) He took MATC courses in Baking, Machine Tool Operation, and Wine Making.
c) Burr assembled a collection of mechanical tools and wood working tools to support his interests in making furniture and models, particularly for radio controlled model aircraft.
d) Burr satisfied a long felt desire to become an airplane pilot and became a licensed Single Engine Airplane Pilot, with Commercial and Instrument Ratings and he became a partner in two different airplanes at different times. Burr and Mary joined Jim and Deloris Skiles in a memorable flying trip to Alaska through Canada in their single engine plane and visited many historic and tourist attractions in Canada's Yukon Territory and in Alaska, including Mt. McKinley National Park, now known by the Alaska native name of Denali National Park). Burr flew in his co-owned plane to Durango, Colorado and hiked and backpacked in the San Juan Mountains of South Western Colorado with his older son and two fellow ECE Professors, Ray King and Jim Skiles. Burr, Mary, and their sons also hiked and backpacked in the mountainous area of Wyoming with Jim and Deloris Skiles and their youngest son, Jeffrey. Burr and Jim and the boys hiked up Bomber Mountain to visit the wreckage of a World War II vintage B17Flying Fortress that crashed during World War II.
e) Burr was a snow skier.
f) He has been on many, many canoe trips with ECE Colleagues on the Wisconsin River, thE Flambeau and Brule Rivers (northwestern Wisconsin), the Pine and Wolf Rivers (northeastern Wisconsin), the lakes and rivers of northern Minnesota and the adjacent Quetico Provincial Park of Ontario, Canada. Burr used his baking skills and a reflector oven, heated by wood fires, to make delicious pastries on canoe trips, much to the delight of his fellow canoeists. Some more recent trips included Mary and the wives of colleagues.
g) The entire family enjoyed for many years vacationing at their lake front cottage on Green Bay, Door County that had been in the family (Father and Grandfather) for many years.

The friendships among Professor Fontaine's colleagues continued after his retirement.

ECE Memorial Resolution Committee
Professor William Birkemeier
Professor James Beyer
Professor James Skiles, Chairman