Dr. Frank B. Baker, scholar, educational statistician, and Professor Emeritus of Educational Psychology, died on November 9, 2018, just days before his 91st birthday. In the later years of World War II, he was in the U.S. Navy’s V-5 pilot training program, and in the Korean War he flew 50 combat missions as a U.S. Air Force navigator in B-26 aircraft, for which he was awarded the Distinguished Flying Cross.

Born in rural Minnesota, Dr. Baker earned a B.S. in 1950, an M.S. in 1954, and a Ph.D. in Educational Psychology and Statistics in 1959 from the University of Minnesota. His doctoral advisor was Cyril Hoyt, and he was a graduate assistant to Joseph Berkson. In 1961 he joined UW-Madison’s Department of Educational Psychology faculty, retiring in 1998. He was a member of the National Council on Measurement in Education, the American Educational Research Association, and the Psychometric Society; and he served as Associate Editor of *Psychometrika*, the leading journal in the field of psychometrics (psychological measurement).

Dr. Baker was an early researcher in the area of psychometrics known as Item Response Theory (IRT) and he authored over 100 journal articles and book chapters, along with three books, dealing with IRT and related topics: *Computer Managed Instruction: Theory and Practice* (1978), *The Basics of Item Response Theory* (1985), and *Item Response Theory: Parameter Estimation Techniques* (1992). He was twice (1971 and 1985) an author of one of the chapters in the classic reference, *Educational Measurement*.

When Dr. Baker arrived at UW-Madison, universities were just acquiring their first large-scale computers. Frank was an expert computer programmer and he focused this talent on the use of computers in educational research. He wrote one of the first test-scoring and test-analysis programs, which was widely used for improving the test reliability in courses locally, nationally, and internationally. His research into the simulation of human concept learning, supported for several years by the Wisconsin Educational Research and Development Center, were a precursor to the now burgeoning field of Artificial Intelligence. Perhaps his most educationally intensive computer work was a Sherman School project that provided computer-based management support to an individualized instruction system. The Madison schools eventually took over the project and invested over $300,000 to extend it to other schools, with the project culminating in a 1978 Baker-authored book, *Computer-Managed Instruction: Theory and Practice*.

Much of the computer software developed by Dr. Baker was created to facilitate research on statistical methodology. His work with R.O. Collier on Monte Carlo investigations of the randomization theory of analysis-of-variance hypothesis testing is widely cited in statistical textbooks. He pursued two lines of research with then UW-Madison colleague, Lawrence J. Hubert, Chaired Professor Emeritus at the University of Illinois and former editor of *Psychometrika*. One line of that research involved data-classification theory and resulted in a number of papers examining various clustering techniques. The second line of research, resulting in a series of 12 articles, dealt with the “quadratic assignment” technique for confirmatory and exploratory data analysis. All of this work appeared in the highest quality methodology journals in the field. In addition, Dr. Baker wrote multiple articles and book chapters dealing with statistical issues in educational research. His research extended from the purely theoretical to application of theory in educational settings. Clearly, he boasts a research-and-publication record that includes significant contributions to the field of education and educational research.

Dr. Baker also had an outstanding record of professional service. He was one of the original founders of the *Journal of Educational Statistics*, jointly sponsored by the American Statistical Association and AERA. He was co-founder of AERA’s Special Interest Group/Educational Statisticians, which remains the largest such group in AERA, and he served two terms as the inaugural Program Chair of that organization. He served as secretary of Division D (Measurement and Research Methodologies) of AERA and was a fellow of Divisions 5 (Quantitative Methods) and 15 (Educational) of the American Psychological Association.
Among Dr. Baker’s extensive service contributions to the University were stints on the Graduate School Research Committee, the Executive Committee of the Social Sciences Division, and, for 20 years, committees that set policy for the Madison Academic Computing Center. Within the School of Education, he was a member of faculty group that wrote the original proposal for the Wisconsin Educational Research and Development Center and was a member of its executive board for four years. He was also a long-time member of the Instructional Technology Committee and served on numerous other standing committees. Within the Department of Educational Psychology, he founded the Laboratory of Experimental Design (LED), which provided methodological and statistical consulting services to researchers in the School of Education and campus-wide, and for 24 years he served as LED’s director.

Dr. Baker taught a highly regarded three-semester educational statistics sequence, drawing students from both the School of Education and the University as a whole. This sequence presumed no prior knowledge of statistics and took students through the design and analysis of experiments in the field of education. A unique aspect of this sequence was his integration of computers into the curriculum. In the first semester, a computer-managed instructional system was used to provide weekly feedback on student progress. In the next two semesters, MINITAB and SPSS were used to analyze data sets. A revealing comment was made by a student who had graduated a few years earlier. She wrote: “I only earned a B in your stats courses, but in my department I am the stats expert.” The course, “Computer Applications in the Behavioral Sciences,” provided students with a broad perspective on how computers work and are applied in education. In addition, Dr. Baker taught a range of specialized psychometric theory courses, for which student evaluations were uniformly high. Over the years, he was the advisor to 12 Ph.D. and four M.A. recipients, and most of these students went on to hold faculty positions in universities throughout the country and in several foreign countries.

Dr. Baker set high standards for promotion and tenure, claiming that faculty needed at least 13 high-quality publications to be considered for promotion and tenure, a criterion that became known as a “Baker’s dozen.”

When not engaged in academic pursuits, Frank actively participated in "ski and sky” activities. He was an expert skier and during the Wisconsin winters he served as a ski patrol volunteer. Throughout the year he gave generously of his time to colleagues and their children who were interested in building model airplanes and boats. He frequently made suggestions for redesigning their models to improve performance and speed, especially when the child was involved in a competition. He enjoyed flying his Piper Cub and giving rides to colleagues and friends. One of his colleagues remembers some special occasions in which he and Frank would fly to small grass strip airports in Southern Wisconsin. “We would fly into the airport and Frank would introduce me to many other pilots who were very happy to see him and exchange aviation stories.” One of Frank’s favorite flights would be up and down the Wisconsin River Valley.

Dr. Baker is survived by his wife of 68 years, JoAnn; a daughter, Ann Marie; a son, Christopher (Odette); and two granddaughters, Hannah and Oona.