

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

ON THE DEATH OF PROFESSOR EMERITUS CARTER DENNISTON

Professor Emeritus Carter Denniston died on September 27, 2005. His entire academic career was at the University of Wisconsin-Madison, starting with his undergraduate and graduate student days and, after two years as a Captain in the U. S. Army, 35 years as a faculty member. Born in Milwaukee on April 2, 1938, he attended the university on a music scholarship and was violist in the University Orchestra. His undergraduate and graduate majors were in anthropology, where his teaching skills were soon evident. While a graduate student, he won a university distinguished teaching award. He then switched to genetics and received his Ph.D. in 1968. He joined the Medical Genetics faculty as assistant professor in 1970, became associate professor in 1975, professor in 1981, and professor emeritus in 2005. Recently, he developed an interest in number theory, which brought him much pleasure. He was looking forward to further study of this during retirement, which was cut short by cancer.

Carter taught more different courses than any other genetics faculty member, many of them year after year. These included: introductory genetics, general genetics, human genetics, population genetics, medical genetics, and genetic counseling. He also taught in the Biocore sequence. His teaching was always characterized by rigorous logic and clear explanation. Rather than send students to the bookstore, he provided voluminous handouts, which he wrote himself. These were models of clarity and rigor. He enjoyed teaching, and it showed. He was happy to spend many hours with students, explaining difficult points.

Carter was chairman of the Departments of Genetics and Medical Genetics for 7 years. He did more than his share of service work. He was a member of the Faculty Senate and the CALS and campus Institutional Review Boards. Among many committees were: Biological Sciences Divisional, Medical School Admissions, Medical School Research, and Faculty Rights and Responsibilities. He always took committee responsibilities seriously and regularly did extra work, often organizing the task for more thoughtful and efficient conclusions.

His national committee work was addressed the same way. He often provided an analysis of the situation and did much more than other committee members. He was active in several committees for the National Academy of Sciences, National Council on Radiation Protection, the International Committee on Radiation Protection, and the NIH mammalian genetics study section among others. Most of the risk sections of two National Academy reports on radiation effects are his doing.

Carter's research in theoretical population genetics was characterized by logical consistency and completeness. As a graduate student he came under the influence of Charles Cotterman, from whom he acquired his taste for finite mathematics and combinatorics, and for treating problems exhaustively. His greatest work is highly complex and can be understood by only a small number of colleagues. These involve Cotterman's K-coefficients, which specify different genetic relationships. Denniston extended these to multiple alleles and multiple loci with linkage. He invented a new relationship concept, *Equivalence by Descent*, to supplement the commonly used *Identity by Descent*. He was the world leader in this rarified atmosphere. He was also associated with the concept of the Mutational Component, the fraction of a trait prevalence that increases linearly with the mutation rate.

He was involved in research projects of others and most of his publications are of this type. He frequently made important intellectual contributions to papers of colleagues, usually in the areas of theoretical population genetics and statistics. In many instances, his name has not appeared as author, although his help was gratefully acknowledged. His participation brought a depth of scholarship and clarity that was appreciated by his colleagues.

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Carter and his wife, Glenda, enjoyed outdoor wilderness-type activities. As graduate students they participated in anthropological studies of Alaskan Inuit. Together, they tramped sections of the Appalachian and many other trails, observed wildlife on Hudson's Bay, and explored the deserts of California when the cacti were in bloom. Every summer they planted and tended a sizable vegetable garden. They traveled widely--to the Philippines as volunteers in an ophthalmological team, to the Dominican Republic to visit a daughter in the Peace Corps, to Scotland, and to other places offering the pleasure of bird watching.

Carter was remarkable for his openness and refreshing honesty, and for his sense of humor. His ability to be simultaneously funny and brutally honest was one of the things that made him such a delightful person. His pleasures included mathematics, music, philosophy, and language study--he studied both Russian and Chinese and wrote haiku. He enjoyed light reading, including mystery stories, Tolkien, and the Harry Potter books. He liked to share the pleasure by reading aloud to his wife.

Carter Denniston is survived by his wife, Glenda (Boyd) Denniston; daughter, Holly Denniston (David Betlejewski); daughter, Dr. Sumi (Sean) Jones; son, Kenn (Hannah Mercier) Denniston; as well as by his older brother, Theodore Denniston; and by many nephews and nieces.

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