IN MEMORIAM

KAREN J. ARTZT

Karen Artzt, Ashbel Smith Professor Emeritus, passed away peacefully at her home in Austin, Texas, on March 4, 2020. The University has lost an outstanding research scientist and educator. Karen was born in New York City on September 4, 1942, daughter of Betty and Walter Artzt. After graduating from The Lenox School in New York City in 1960, Karen earned her Bachelor of Arts degree in Zoology from Cornell University in Ithaca, New York, in 1964. She received her Ph.D. in 1972 from Cornell University Graduate School of Medical Sciences, where she was a student of Dr. Dorothea Bennett. She became a postdoctoral fellow at the Pasteur Institute in Paris, where she worked with the Nobel Laureate, Dr. François Jacob. Her studies focused on embryonal carcinoma antigens. Upon returning to the United States, she joined the Sloan Kettering Institute's faculty in New York City. In 1986, Karen accepted a position as a Professor in the Department of Zoology at The University of Texas at Austin, where she again, together with Dr. Dorothea Bennett, assembled an innovative research team.

Karen was recognized internationally for her significant contributions to the understanding of the genetic basis of mammalian development. She embodied the scientific ingenuity behind the explosive growth in the developmental genetics field. She was at center stage when developmental biology morphed from a descriptive science into a more molecular and mechanistic direction. Her early studies focused on the proximal region of chromosome 17 in wild mice called the t-complex, where several different embryonic lethal mutations are harbored. Her research group used clever strategies to overcome the four non-overlapping inversions in the chromosome that suppressed recombination in t-haplotypes, allowing the mapping of several embryonic lethal loci. She also

researched the effects of male transmission ratio distortion in maintaining these lethal alleles in the wild mice population and the evolutionary aspects of the H-2 complex in the MHC of t-haplotypes. As a consequence of these studies, the proximal region of chromosome 17 was the best-mapped region of the mouse genome prior to the introduction of molecular biological techniques of the 1980s.

One of her most recent scientific contributions was made in 1995 with the positional cloning of *quaking*, a spontaneous demyelinating mutation in mice. The cloning of *quaking* had been elusive for many years; under her direction, however, Karen's research group discovered that the *quaking* mutation was associated with a deletion. With her genetic insight, Karen hypothesized that the gene was not deleted in *quaking* viable mutants; instead, a tissue-specific enhancer was deleted. Using this genetic strategy, *quaking* was finally cloned from the DNA flanking the deletion point. *Quaking* encodes an RNA-binding protein. As of today, *quaking* is involved in the progression of several types of tumors, cancer metastasis, prion disease, nervous system diseases, and inflammation to name a few—showing its impact in several biological processes.

The University named her Ashbel Smith Professor of Molecular Genetics and Microbiology in 1998. In 2000, Karen embarked on a new scientific adventure, spending a sabbatical year at the Massachusetts Institute of Technology in Dr. Nancy Hopkin's lab characterizing insertional mutations that affected the early development of zebrafish. Upon her return to Austin, her research group described one of these mutations in mice, showing that the developmental relevance was conserved in higher vertebrates.

Karen, whose research was funded by the National Institute of Health (NIH) for more than thirty years, had a remarkable scientific career, authoring or co-authoring over a hundred publications in high-impact scientific journals. She received a Research Career Development

award from the National Cancer Institute and the Sloan Kettering Institute and was elected to the American Association for the Advancement of Science (AAAS) in 2007. Karen was a founding member of the International Mammalian Genome Society. She was a member of the Board of Directors of The Genetics Society of America and the Texas Genetics Society, as well as the Editorial Board of the journal *Genetics*. Karen excelled as a mentor for many undergraduates, graduate students, and postdoctoral fellows.

After twenty years at UT Austin, Karen retired in 2007; however, she continued publishing research articles, including a book on the *quaking* protein family. She spent half of each year after retirement in Bar Harbor, Maine, where she participated in the Jackson Labs' (JAX) local scientific community. Karen had a close connection with JAX as she taught summer courses and organized scientific meetings there.

Karen was a creative, courageous scientist. Complementing her keen interest in academics, she was also an artist. She designed her own needlepoint and sculptures, sharing her art work in Austin at a local art gallery, as well as writing poetry; as did her father. She used to tell her students that designing a good experiment was art. Throughout her life, Karen was a philanthropist in the arts and the sciences. She was fluent in French, loved opera and to travel, and she was an avid tennis player, despite having an artificial knee.

Colleagues and friends remember her as a passionate geneticist, gifted in foreseeing the broad view of biological processes, kindhearted and, above all, an exceptional mentor.

She is survived by her beloved sister Paulette Artzt Howard, her nephews, grandnephews, and nieces, and countless friends. She is forever loved and will be forever missed.

Jay C. Hartzell, Interim President
The University of Texas at Austin

Alan W. Friedman, Secretary
The General Faculty

This memorial resolution was written by Karen's lab members, Dr. Gabi Rennebeck (Trinity University), Dr. Jiang Wu (UT Southwestern Medical Center), and Peggy Centilli (UT Austin). It was prepared for submission by a special committee consisting of Professors Steve Vokes and John Wallingford.