



Roger Keith Dennis

March 10, 1944 – December 12, 2024

R. Keith Dennis, professor emeritus of Mathematics in the College of Arts & Sciences, died at age 80 on December 12, 2024, following a prolonged battle with metastatic prostate cancer.

Keith Dennis was born on March 10, 1944, in Vernon, Texas. He went to school in Quannah, Texas, and then earned an undergraduate degree in 1966 and a Ph.D. in 1970, both from Rice University. His doctoral work was supervised by Stephen Gersten and his thesis entitled, *Presentation for the Elementary Group and the Functor $K(\ , 2)$* . He spent a year at the Institute for Advanced Study, working with John Milnor, and then came to Cornell, where he spent the rest of his career. Starting as an assistant professor in 1971, he was promoted to associate professor with indefinite tenure in 1976 and to full professor in 1981. He received a Humboldt award in 1987 and was named an inaugural Fellow of the American Mathematical Society (AMS) in 2013. He became professor emeritus on retirement in 2019.

Throughout his career, Keith made significant contributions in algebraic K-theory and group theory. He published 25 papers and a graduate textbook (Springer GTM144 - Noncommutative Algebra, with Benson Farb) that remains a standard reference in the field. The Math Review for that text opens, “Not very often does an introductory text to ring theory appear that provides the basic tools of the field and at the same time attracts the reader to it and stimulates further study.”

Keith had a particular skill at mentoring undergraduates and inviting them into mathematics. Most memorable to many Cornell Math Majors was Keith’s honors algebra course, complete with problem sets designed to engage the students in figuring things out, discovering subtle and intricate patterns through careful analysis of many, many problems and examples. This was also Keith’s approach to mathematics: persistently and patiently working through examples, letting the subtleties illuminate a more general theory. His former student Benson Farb wrote of Keith, “He knew how to work examples like no one else, and his special style allowed him to make a number of discoveries many others missed. For instance, he discovered a remarkable mapping in K-theory that was subsequently developed into a very general tool that came to be known as the ‘Dennis Trace.’”

Beyond his mathematical contributions, Keith's long and dedicated service to the mathematics community has had a tremendous impact. At Cornell, he served as department chair from 1987 through 1993. He worked with the AMS from 1995 to 2001, serving as the Executive Editor of Math Reviews (MR) for three years, and then as a Consulting Editor. During his tenure at MR, he oversaw the shift from the thick, orange volumes that lined the shelves of every Mathematics Library to the electronic platform we each now consult nearly daily. It is hard to overstate the importance of this transition and the subsequent impact the electronic MR has had on mathematics worldwide.

Back at Cornell, Keith was a trailblazer in orienting the Cornell Math Library towards electronic collections. A lifelong bibliophile, he served on the University Library Board and for many years chaired the Math Library Committee. Keith was instrumental in creating a collections fund, which has grown to be the Mathematics Library's largest source of supplemental funding for purchasing new mathematics books. The result of his hard work and generosity is one of the finest collections of mathematics literature in the world. The math department is deeply grateful for his leadership and gifts that have allowed Cornell's Mathematics Library and math departmental programs to flourish.

Keith was also a longtime board member for Project Euclid and for the American Institute of Mathematics (AIM). He personally donated thousands of books, journals, papers and letters from his own collection to AIM's library.

Keith is survived by his sister, Barbara Gayle Kolkhorst; his children, Erick Dennis, Robin Dennis, Lydia Dennis '07, and Susan Dennis; six grandchildren; and his partner and colleague, Michelle "Mikki" Klinger, undergraduate coordinator of mathematics. He will be remembered fondly by family, friends, and colleagues worldwide.

Written by Tara Holm