

Daniel Richard Grayson (1952–2026)

Daniel Richard Grayson was born on June 3, 1952 in Greenville, Mississippi, the son of Richard Roland Grayson and Gertrude June Lind.

Dan's lifelong pursuit of mathematical research and teaching was inspired by a PBS broadcast during his childhood. He graduated from the University of Chicago with a B.S. and M.S. in Mathematics in 1972, and completed a PhD in Mathematics at the Massachusetts Institute of Technology in 1976. Dan was a Ritt Assistant Professor at the Department of Mathematics at Columbia University from 1976 to 1981. He joined the Department of Mathematics at the University of Illinois at Urbana-Champaign in 1981, eventually becoming a full professor and department chair. Dan successfully advised 7 doctoral students and published 36 mathematical research papers with his favorite being "Algebraic K-theory via binary complexes". Dan was a leading researcher on operations in algebraic K-theory and related weight filtrations. His work resulted in the Grayson Spectral Sequence which is obtained using a weight filtration via commuting automorphisms. This was later proved to be equivalent to the Motivic Spectral Sequence arising from Voevodsky's slice tower and also the Friedlander-Suslin Spectral Sequence.



Dan wrote many of the mathematical parts of the original *Mathematica*, a software system for doing mathematics by computer published in 1988. He also wrote the precompiler for the extension of the C programming language that Mathematica uses.

Dan is one of the two main authors of *Macaulay2*, a programming language for research in algebraic geometry and commutative algebra. First released in 1996 and still actively developed, the project has been cited in thousands of mathematical papers. Dan sustained the project for over 30 years and traveled to Macaulay2 events around the world. According to co-author Michael Stillman, Dan brought a depth and breadth of contributions that rival what normally takes an entire team of engineers to accomplish.

Dan married Carol Jean Livingstone in August of 1976 and raised two sons with her. He loved playing with children and teaching them math. Dan extensively researched his family tree and formed relationships with distant relatives. For decades, he played bridge and squash and practiced Chopin's *Fantaisie-Improvisation* on his piano. He appreciated the Illinois prairie and maintained a garden of native plants at his home in Urbana.

After his retirement from the University of Illinois in 2007, Daniel pursued new hobbies: long-distance running, antique clock repair, and church choir singing. Daniel completed a marathon every year from 2008 to 2019 except for 2017, the year he had a triple-bypass heart surgery. He and Carol spent their latter summers in Ocean Grove on the New Jersey shore. "Ocean Grove is paradise," said Dan often. He also visited the Institute for Advanced Study to work on Univalent Foundations of Mathematics.

Throughout his life, Dan traveled around the world to see family and friends, research genealogy, do math, and run marathons. In particular, he spent significant time in Germany, Norway, and China.

In 2021, Dan and Carol moved to Henderson, Nevada, where Carol passed away in 2024. Dan's health slowly declined due to bvFTD, and he passed away peacefully in Henderson on August 28, 2026. He is survived by sons Paul and David, grandchildren Tiko, Lina and Alan Grayson, daughter-in-law Fang Li (李芳), and sisters Kristin Grayson, Rebecca Jaxon, and Janelle Ream.

Dan's memorial service will be on October 17th at 3pm at Grace Presbyterian Church, located at 5885 S. Durango Dr., Las Vegas, NV. Memorial donations to the church and to Garfield Farm Museum are welcome.

For more information about Dan, see his home page:

<https://www.graysonfamily.org/dan/>

This obituary was written by David Grayson with input from Paul Grayson, Randy McCarthy III, and Michael Stillman. Last updated 2026-09-10. The photo is from 2025-08-23.