

Eos

James N. Pitts Jr. (1921–2014)

Pitts's contributions to understanding what drives atmospheric pollution and his dedication to teaching and mentoring made him a preeminent leader in atmospheric chemistry.

By D. R. Blake, B. J. Finlayson-Pitts, and S. Nizkorodov

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James N. Pitts. Credit: UCI

Longtime American Geophysical Union member James “Jim” N. Pitts Jr. passed away peacefully at his home in Irvine, Calif., on 19 June 2014.

Jim was once described by a colleague as having “parallel processors but serial output,” an apt description for those who had the privilege of being part of his scientific and personal lives. He was bursting with such energy and so many ideas at times that how fast he could speak became the rate-determining step in transmission. One could not be around him and avoid getting caught up in his enthusiasm for life and all things in it.

Early Life and the War Effort

Jim was born in Salt Lake City, Utah, on 10 January 1921. His parents moved to Los Angeles when he was 6 months old, which gave rise to his saying he was from Los Angeles “within experimental error.”

He started as an undergraduate at the University of California, Los Angeles (UCLA), in 1939, where he carried out gas photochemistry research with Professor Francis Blacet, an experience that shaped his career. After the bombing of Pearl Harbor, a civilian Chemical Corps was created, and Professor Blacet, along with many other scientific leaders, was tapped to leave his academic position to help develop and test gas masks that would be effective if chemical warfare were used on Allied troops. When Professor Blacet asked Jim to join this effort, he took a leave of absence from UCLA, returning to complete his B.S. in chemistry in 1945 and his Ph.D. in 1949.

His remarkable experiences are described in “[The Past as Prologue: An Interview with James N. Pitts, Jr.](#),” published by the Bowling Green State University Center for Photochemical Sciences (*Spectrum*, 20(1), 2007), and in an interview published by the [American Meteorological Society](#). Both are fascinating accounts of what scientists did during the war.

Professor of Chemistry

Jim joined the Department of Chemistry at Northwestern University in 1949. Despite his great appreciation for the department, he could not resist the draw of returning to California in 1954 as part of the founding faculty of a new University of California campus at Riverside (UCR).

He fulfilled many roles at UCR as he rose through the ranks to full professor, such as mentoring generations of graduate students, postdocs, and undergraduates, including [Richard Schrock](#), who went on to win the Nobel Prize in Chemistry.

Jim continued his research in fundamental photochemistry, coauthoring a book on the subject with colleague Jack Calvert. A number of Jim’s colleagues from around the globe told him that they learned the basics and more from his book [Photochemistry](#), which is still considered a classic.

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Few areas of atmospheric chemistry today escaped his influence. He was author or coauthor of 380 peer-reviewed publications and four books: one on photochemistry, two on atmospheric chemistry, and one directed at helping graduate students navigate the path to obtaining a Ph.D. He was designated [in 2001](#) by the Institute for Scientific Information (now the Thompson-Reuters Web of Science) as one of the “most highly cited researchers.”

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During his career, he mentored several generations of new scientists, many of whom are current leaders in the field, including a number of women in an era when there were few in science. He was always encouraging and supportive—and never short of advice!

Because he was a tennis player, duck hunter, and fly fisherman, his advice was often couched in terms such as “Keep your eye on the ball,” “Don’t flock shoot,” and “Try floating the dry fly past.” “Keep moving so they can’t draw a bead on you!” was another phrase he often used to inspire those around him to always move ahead.

He generously shared research ideas with students and junior faculty at UCI and helped them write more convincing papers. A dedicated teacher, he continued lecturing to the general public until late in his life, telling fascinating stories about the history of air pollution research and policy.

A Focus on Air Pollution

In the early 1960s, Jim became intrigued with the photochemistry of air pollution, which had become a serious problem for Los Angeles. He cofounded the University of California Statewide Air Pollution Research Center (SAPRC), which was located at UCR, and was its director from 1970 until his retirement in 1988. In reality, he never retired from science, and he continued working on air pollution issues for the rest of his life. He was welcomed as a researcher and mentor at the University of California Irvine (UCI) in 1994.

These statistics do not properly represent his impact, however. He opened up many new areas in atmospheric chemistry, such as reactions of [polycyclic aromatic hydrocarbons](#), which before that point had been definitively stated not to react in air. Jim showed not only that they did react but that toxicity often increased as a result.

The Consummate Mentor

Recognition for Improving Air Quality

Jim was deeply dedicated to translating the science of air pollution for policy makers and regulators, giving testimony many times before state legislative and congressional committees. As proof of the regard in which he was held, a number of policy makers, including governors Ronald Reagan and Edmund “Jerry” Brown Jr., presidential candidates George McGovern and Edmund Muskie, and Rep. Jerry Lewis (R-Calif.) visited SAPRC to seek his advice.

Jim was most proud of his work with the California Air Resources Board (CARB) as a scientist, informal adviser, and chair of a number of CARB committees. His prime concern was public health and the application of fundamental science to understanding the atmospheric chemistry that affects people. That California has led the way in developing scientifically based control strategies is in no small part due to Jim’s efforts.

His awards included those not only for his science (e.g., fellow of the American Association for the Advancement of Science and a number of American Chemical Society awards, including the Tolman Medal) but also for his contributions to improving air quality (e.g., from CARB, the Coalition for Clean Air, the South Coast Air Management District, and the California Lung Association).

An Enduring Legacy

Jim is survived by his wife of 38 years, three daughters, six grandchildren, and their families. He was always very appreciative of an undergraduate scholarship at UCLA, and as a fitting memorial, a [scholarship for undergraduate chemistry students](#) has been set up in his name at UCI.

Jim’s World War II involvement, his contributions to better understanding the science driving atmospheric pollution, and his total commitment to his immediate family and those of us fortunate to feel like part of his extended family were Jim’s proudest accomplishments. The world is a better place for having had him in it.

—Donald R. Blake, Barbara J. Finlayson-Pitts, and Sergey Nizkorodov, University of California, Irvine; email: bjfinlay@uci.edu

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