



James O. Schaefer

JAMES D. IDOL, JR.

1928–2015

Elected in 1986

*“For the invention of ammoxidation processes and catalysts,
and for major contributions to the plastics industry.”*

BY FLOYD T. NETH

SUBMITTED BY THE NAE HOME SECRETARY

JAMES DANIEL IDOL, JR. died July 15, 2015, at the age of 86. He was born August 7, 1928, in Harrisonville, Missouri, where he grew up. His father, James D. Idol, Sr., one of seven children, was mayor, and his mother, Gladys, was a high school teacher.

Jim attended public schools and graduated from Harrisonville High School in 1946. He enrolled in William Jewell College, where he studied chemistry under Frank G. Edson, receiving his AB in 1949. He then went to graduate school at Purdue University, where he pursued his interest in industrial chemistry under Earl T. McBee. He received his MS in organic chemistry in 1952 and stayed to earn his PhD in 1955 with a major in organic chemistry and a minor in chemical engineering.

Upon completion of his graduate studies he took a job at Standard Oil of Ohio (Sohio) as a senior chemist, working with other researchers to develop chemicals for commercial enterprise. In 1957 he invented an economical single-step process for the manufacture of acrylonitrile, the key ingredient in acrylic fibers used to make clothing; shatter-proof plastic bottles, computer, automobile, and food casings; and sports equipment. The process was commercialized in 1960 by Sohio and is now used in chemical plants throughout the world. Soon thereafter a plant for producing acrylonitrile was established in Lima, Ohio.

Jim then turned his attention to creating commercially useful derivatives of acrylonitrile. He was research supervisor of the group that discovered and developed the process for the commercialization of Borex packaging plastics, now used for packaging processed foods, drugs, household products, and chemicals.

By the time he left Sohio, he had completed projects in R&D long-range planning, technology assessment and forecasting, foreign licensing support work, and research contract negotiation. He had risen through the ranks from research associate (1959) to research supervisor (1962), project leader (1965), and research manager (1965–1977).

When Sohio was purchased by British Petroleum in 1977 Jim was hired by Ashland Chemical as research manager to lead a newly formed department in the R&D division. He was promoted to vice president for venture research and development in 1979. Combining his management skills with scientific research, he built the group into a corporate R&D division of 150 staff and a budget of \$15.5 million. At Ashland he developed the propylene–carbon monoxide process for the manufacture of methyl methacrylate.

In 1988 he left industry to join the faculty of Rutgers University as Professor II of ceramics and director of the Center for Packaging Science and Engineering. He retired as professor emeritus in about 1995.

Dr. Idol published 59 scientific papers and received 122 US and foreign patents. He was a leader in professional organizations: American Chemical Society (ACS), chair, Industrial and Engineering Division; American Management Association (AMA), Research and Development Council; Industrial Research Institute, chair, Board of Editors; American Institute of Chemists, chair of the board; and member of the American Institute of Chemical Engineers, Society of Plastics Engineers, and the Plastics Industry Association. He served on numerous government committees and councils including the National Science Foundation Council for Chemical Research Government Affairs Committee and the advisory board for the National Institute of Standards and Technology.

He was the recipient of a long list of honors: the Modern Pioneer Award, National Association of Manufacturers (1965); Chemical Pioneer Award, American Institute of Chemists (AIC) (1968); Citation for Achievement, William Jewell College (1971); ACS Joseph P. Stewart Distinguished Service Award (1974) and Creative Invention Award (1975); Special Merit Award, Sohio Board of Directors (1976); AIC Life Fellow (1978); Perkin Medal, Society of Chemical Industry (American Section) (1979); honorary doctor of science, Purdue University (1980); F.G. Ciapetti Award and Lectureship, Catalysis Society of North America (1988); Rutgers University Diploma of Recognition, Distinguished/Named Chairs (1991); and AMA Council Service Award (1994). He was elected to the National Academy of Engineering (1986) and named a fellow of the American Association for the Advancement of Science (1988).

ACS designated the Sohio Acrylonitrile Process a National Historic Chemical Landmark at BP Chemicals Inc. in Warrensville Heights, Ohio, on September 13, 1996, and at INEOS in League City, Texas, on November 14, 2007.

My friendship with Jim Idol began when we both enrolled in William Jewell College and majored in chemistry. He preceded me by a quarter and was an active member in Phi Gamma Delta fraternity when I became a pledge in the fall of 1946. Our friendship blossomed when we were together in Quantitative Analysis our second year. We used to "break in" to work in the lab after hours: We would leave a window unlocked so that we could climb out on the ledge, open the window, and get into the lab. Thus began our serious dedication to chemistry, which only increased as we progressed through organic and physical chemistry.

I lived on a farm and commuted five miles to college. On one occasion a blizzard made it unsafe for me to drive home. Jim kindly shared his dormitory room with me for the night and even loaned me his razor the next morning with a fresh Gillette Blue Blade. It converted me from an electric shaver to a safety razor.

After receiving our PhDs, he at Purdue and I at Ohio State, we communicated periodically by telephone. After Jim moved

to Rutgers University we spoke several times about working together on converting methane to motor fuels but time ran out before we could do more than theorize.

In 1995 on a visit to Russia, I connected with scientists at the St. Petersburg State University. This led to organizing Russian-American Technology Associates Inc. to develop with Russian physicists a medical device for treating degenerative diseases. Jim served as an advisory board member until 2005.

On more than one occasion Jim told me that I was his best friend. What an honor to have been the best friend of such a talented and respected individual!

His brother-in-law, Hale Montgomery, remembers:

Growing up in Harrisonville, Missouri, on the western edge of the state, Jim showed early signs of his later illustrious career in chemistry. According to family history, Jim spent many hours with a beginner's chemistry set—a childhood birthday gift from a neighbor—in the basement of the Idol home on West Washington St., a house sometimes filled with strange odors from below.

But chemistry became his big draw later.

The Idol family owned the local newspaper, the *Cass County Democrat Missourian*. It was only natural that Jim would follow family tradition. Thus, at age 10, he and two buddies established *The Home Weekly*, a gossipy four-pager, circulation about 100, that elicited some angry phone calls to the Idol household. "You'd be surprised at what kind of news a 10-year-old can pick up around the dinner table," Jim said in a 1970s interview with John F. Hanahan, senior editor of *Chemical & Engineering News*.

I relished his visits to our house in Arlington, VA, where his sister Carol (Idol) Montgomery and I lived. He always came bearing a gift bottle of fine cognac. After a sibling "Jimmie Dan and Carol Sue" talk, he would head for the piano, where he would bang out Broadway show tunes and classics with gusto—and "in any key you can name," he once offered. He also had a fine bass voice that he earlier put to use in Cleveland's oldest musical group, the Singers' Club, a men's chorus with a wide repertoire, such as drinking songs, concert pieces, carols, and other fare.

My brother-in-law—beyond his singular, ground-breaking, award-winning, professional achievements—was a great friend, very warm and human, a talented man with a robust sense of humor. We all love him, and miss him.

His niece Patricia wrote:

Uncle Jim was the most wonderful gorilla chemist I ever knew. I couldn't wait for him to visit when I was a little girl. After he greeted everyone with bear hugs, he'd drop down on all fours and play gorilla, complete with ape-like grunts.

As the years progressed, I had a vague feeling that he was pretty famous. I remember staying at the Plaza Hotel in NYC in 1979 when he won the Perkins Award. As I grew up and learned more about his professional career, I was truly awed. In effect, Uncle Jim and his colleagues changed the world; not just the plastics and packaging industry but the world! That's brilliance, but he'd never tell you. He understated his accomplishments and never strayed too far from his humble Missouri roots.

When I lived in Los Angeles at age 22, he treated me to a rare five-star dinner complete with a bottle of Rothschild wine. He joked in the elevator on the way down: "Patsy, I think the maître d' thought I was your sugar daddy!" I laughed and said, "No you're just my famous gorilla chemistry uncle!"

His niece Anne commented:

As a girl, I thought Uncle Jim was hilarious. He was a clown, as Trish says—the uncle who grunted when he saw you and circled around you bent over in an excellent imitation of a gorilla, but one with black hair, shiny shoes, and a coat and tie! He loved big cars, a good scotch-and-water, and immensely enjoyed playing the piano.

He was well read, though almost totally in science, and thought that what I was interested in as I grew up—liberal arts—was a bit odd. He loved to talk, and loved company, and was a generous person. His laugh is one that sticks in my memory—gentle, and frequent, and he had a genuine old-fashioned sense of courtesy.