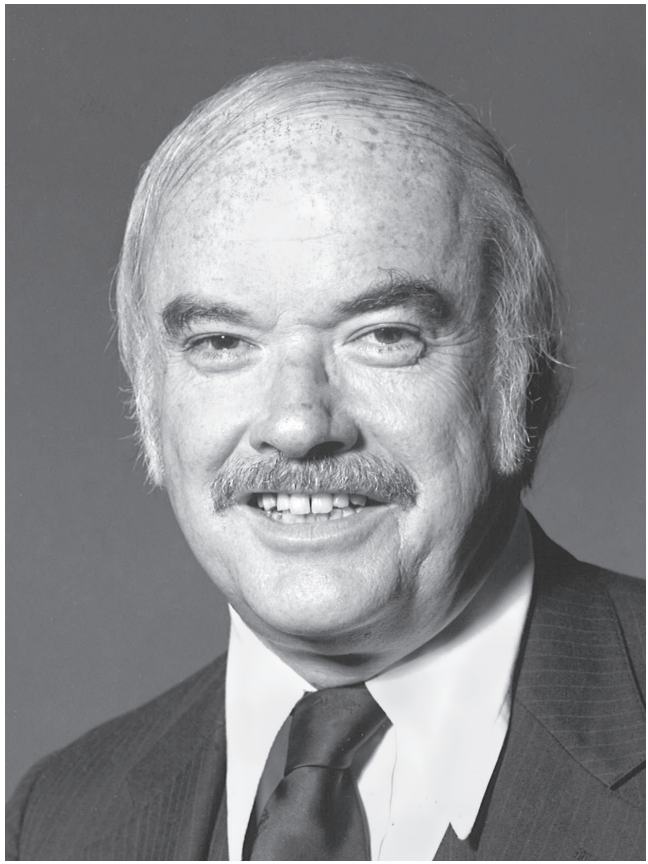

James E. McGrath

JAMES E. McGRATH

1934–2014

Elected in 1994

"For integration of synthesis with the performance and applications of polymeric materials and their composites."

BY DONALD R. PAUL

JAMES E. McGRATH, a world-reknowned polymer scientist who straddled the industrial-academic interface with great skill, died of brain cancer on May 18, 2014, in Blacksburg, Virginia.

Jim was born on July 11, 1934, in Easton in upstate New York and grew up on a farm there. He received a BS degree in chemistry in 1956 from Siena College and did graduate studies at the University of Akron, where he received an MS degree in 1964 under the direction of Alan N. Gent, working in the area of ozone cracking of rubber, and then a PhD in 1967 working under Maurice Morton in the area of synthesis and characterization of block copolymers. Before entering the University of Akron, he worked on cellulose fibers for Rayonier, Inc. and then during his first years of graduate study he worked for Goodyear Tire and Rubber Co. After his PhD, he joined Union Carbide Corp., where he was involved in research on various engineering thermoplastics and polyolefins. His industrial career spanned 17 years, during a prolific period of invention in polymer technology.

In September 1975 he joined the chemistry faculty of the Virginia Polytechnic Institute and State University, where until his death he had a very successful career in cutting-edge research and education in broad aspects of polymeric materials. Through his leadership and vision, Virginia Tech

developed one of the world's leading educational and research programs in polymer science and engineering. He was also director of one of the first science and technology centers sponsored by the National Science Foundation, under the title High-Performance Polymeric Adhesives and Composites, from 1989 to 2000.

Jim and his colleagues established a series of enormously popular short courses on polymer science and polymer chemistry, sponsored by the American Chemical Society (ACS), that remain popular today with over 6,000 alumni. His collaborative research with Garth Wilkes in the Department of Chemical Engineering led to the Polymeric Materials and Interfaces Laboratory, predecessor of the university's Macromolecules and Interfaces Institute.

With his broad experience, Jim naturally gravitated toward complex and challenging problems in polymer science with societal and economic impact, and his students carried with them his great enthusiasm for interdisciplinary research. He supervised over 100 PhD and 17 MS students and more than 80 postdoctoral associates; they have gone on to populate leading university and industrial research laboratories around the world.

Jim received many awards and honors, among them election to the National Academy of Engineering (1994), the Society of Plastics Engineers International Research Award (1998), Virginia Scientist of the Year (1999), Herman F. Mark Award from the ACS Polymer Chemistry Division (1996), ACS Award in Applied Polymer Science (2002), George S. Whitby Award for Distinguished Teaching and Research from the ACS Rubber Division (2009), election as ACS fellow (inaugural class of 2009), ACS Award in Polymer Chemistry (2008), and the Charles G. Overberger International Prize for Excellence in Polymer Research (2013). He shared the Paul J. Flory Award in Polymer Education with his Virginia Tech colleagues Tom Ward and Garth Wilkes in 2004 and was a member of the Society of Plastics Engineers Hall of Fame.

Jim McGrath was one of the giants in polymer science and engineering. His pioneering research resulted in more than

500 publications, an equal number of preprints, and over 50 patents. His coauthored book *Block Copolymers: Overview and Critical Survey* (with Allen Noshay; Academic Press, 1977) had significant impact in this important field. His broad-based research ranged from new high-temperature polymers for adhesives and composites to creative multiphase polymeric systems, novel ionic polymerization systems, fundamental mechanistic understanding of cyclic siloxane polymerizations, and important new materials based on this chemistry. His latest research focused on high-performance polymeric membranes for fuel cells, water purification, and gas separations.

He was in great demand as an industrial consultant and was a familiar visitor at many industrial polymer research organizations. His contributions in the area of composites enabled many models of commercial jet aircraft, and his wide-ranging papers are frequently cited. He dedicated much time to professional activities, serving the ACS Division of Polymer Chemistry in every office. He pioneered the enormously successful workshops of the ACS Polymer Chemistry Division and continued to chair workshops through 2013. He also served on a number of journal editorial boards and advisory boards for government agencies and professional societies.

Jim had a bigger-than-life personality and was a wonderful friend for many in the polymer community. His infectious smile and his fun-loving participation in meetings around the world, where he often was seen wearing his Virginia Tech cap while singing and playing the trombone or piano, will be long remembered. His stimulating lectures on advances from his research group generated much enthusiasm and will be greatly missed.

To recognize his approaching 80th birthday, his friends planned a workshop, "From Anionic Polymerization to Aerospace Materials to Membranes," in southern Italy June 29–July 2, 2014, sponsored by the ACS Polymer Division. Unfortunately, Jim passed away a few weeks before this event; the workshop was held anyway and became a wonderful tribute to his career and life that was attended by approximately 100 friends, colleagues, and their families.

Jim and his wife, Marlene, had six children—Colleen Kraft, Patricia McGrath Hoover, Matthew McGrath, Barbara McGrath Costain, Elizabeth Throckmorton, and Joseph McGrath—and ten grandchildren. Jim spent the last 30 years of his life with his partner and collaborator Professor Judy Riffle, who provided constant care for him during his final days.