



Robert E. Hughes

May 24, 1924 – April 2, 2017

Dr. Robert E. Hughes, who taught, did research, and served Cornell for many years, passed away in Round Hill, VA on April 2, 2017. He will be remembered by his colleagues and students as a wise mentor, a man of excellent judgment, and a good friend.

Bob was born in New York City May 24, 1924. He grew up in Brooklyn and Queens, then on Long Island. After high school he started work at Union Carbide and Bakelite, at the same time going to “night school” at Cooper Union. Shortly thereafter he entered military service in World War II, working a meteorologist. In 1946, he considered Cornell, but instead studied at Lehigh.

Cornell was his only choice for graduate school, which he began in 1949. It was the beginning of his long career in X-ray crystallography. And what a beginning! Together with his supervisor, the legendary crystallographer Lynn Hoard, Hughes determined the structure of boron, a problem that had eluded the efforts of many crystallographers. Elemental boron has complex structure (that puts it mildly), with characteristic icosahedra. Linus Pauling said “This is the most beautiful structure I have ever seen.” Hughes went on to do a second boron structure, just as complex and beautiful. In just three years, he completed his Ph.D., in 1952, Bob Hughes began his career at the University of Pennsylvania, and entered a new field for him, polymer chemistry (there is a relation here to his early work at Bakelite) and then returned to Cornell in 1964. He did important crystallographic research, with excellent students and postdocs. He also served as the Director of the Cornell Materials Research Center, an important Cornell facility. Hughes played a role in the committee at ARPA that established the Materials Research Centers, and three years after returning to Cornell became CCMR’s third director.

His service to the nation was diverse and valuable. He was at one or another time Assistant

Director of the National Science Foundation for National and International Programs, Assistant Director for Astronomical, Atmospheric, Earth and Ocean Science, and Assistant Director of the National Science Foundation for Scientific, Technological and International Affairs. Hughes has also headed U.S. Delegations to the Eighth Antarctic Treaty Consultative Meeting and a Special Preparatory Meeting on the Antarctic Treaty. He was also a member of several U.S.-U.S.S.R. Joint Committees or Commissions, and served as a delegate to the Board of the Binational U.S.-Israel Science Foundation and to the U.S.-India Joint Committee for Science and Technology.

Perhaps most significant in those years was Hughes's service as President of Associated Universities, a non-profit association which manages national research laboratories for Government Agencies. The most important of their wards in Hughes's time was Brookhaven National Laboratory- today they also run the National Radio Astronomy Observatory, the Very Large Array (VLA) in New Mexico, and the North American portion of the Atacama Large Millimeter/submillimeter Array (ALMA), Green Bank Observatory, and the Long Baseline Observatory (LBO). Hughes took a special interest in Brookhaven.

Dr. Hughes was a member of the American Association for the Advancement of Science, the American Astronomical Society, the American Chemical Society, the American Crystallography Society, the American Physical Society, Sigma Xi and Phi Beta Kappa.

Bob Hughes was long married to LaVelma (Lou) Hughes, Cornell M.A. '53, Ph.D. '71. They had one son, Jeffrey. What all of his colleagues remember was the Hughes family hospitality at their lovely house in Cayuga Heights. Every summer they had a 4th of July party that became a Department institution, something we would look ahead to all summer. The party continued long after the Hughes family moved to the Washington area, as the Hughes family kept their Ithaca home.

There was a special wisdom to Bob Hughes. One immediately sensed no self-interest, and felt that his complete attention centered on you. He had good sense, good judgment, and was at ease with anyone. We and many others have benefitted over decades from talking with him, and his friendship.

Written by Roald Hoffmann (Chair), Benjamin Widom and Robert A. Plane