

Elliot Volkin '42

Elliot Volkin and his research partner Lazarus Astrachan first observed and described what later came to be known as messenger RNA, or mRNA, in 1956 while working at the Oak Ridge National Laboratory in Tennessee. They labeled their finding "DNA-like RNA" in their paper in the *Journal of Virology*. Fellow microbiologists have called the discovery of mRNA—which transmits genetic information from the cell's nucleus to the protein-building ribosomes—"probably the most important event in the history of molecular biology next to the discovery of the molecular structure of DNA just three years earlier." But French researchers ultimately received credit and the 1965 Nobel Prize in Medicine and Physiology for discovering mRNA.



Several scientists in recent years have made the case that subsequent researchers' work was built on Volkin and Astrachan's findings and, therefore, they were really "rediscovering" what had already been discovered in Tennessee.

Volkin is reluctant to comment on the subject, saying only, "I have no hard feelings; that's the way things were." But he is proud of his contribution to molecular science. "Although DNA was the 'poster boy' of nucleic acids," he says, "I felt that the molecular structure of RNA was one of the kudos of our research group." Volkin grew up near Pittsburgh, the youngest of seven children of Lithuanian immigrants. He chose to attend Penn State because it was affordable. Biological sciences and biochemistry were then housed in the College of Agriculture, where Volkin enrolled as an agricultural and biological chemistry major on the advice of an older brother. To help pay for school, he worked after class in the Poultry Husbandry Department cleaning up after the chickens and mixing feed.

After graduating in 1942, Volkin continued onto graduate school at Duke University, where he earned a master's and doctoral degree in biochemistry and completed a post-doctoral fellowship. At Duke he met Sylvia Fine, a graduate student in French. They married and moved to Oak Ridge, Tenn., where Volkin would work from 1948 to 1984.

From 1969 to 1980 he served as scientific director of the biochemistry section in the Biology Division, Oak Ridge National Laboratory. During his tenure at Oak Ridge, he published more than 80 scientific papers and articles and was frequently selected to chair meetings at international conferences. Following his work on RNA associated with bacteriophage, Volkin says he continued his research with mammalian cells in tissue culture, trying to determine how cancer cells differ from normal cells. "While not Earth shaking, it was good, fundamental science," he says.

Volkin is a member of the American Society of Biological Chemists and the American Chemical Society, among other professional societies. He was elected a Fellow of the American Association for the Advancement of Science, in recognition of his meritorious efforts to advance science.

Volkin is a life member of the Penn State Alumni Association. He was married to his late wife, Sylvia, for 55 years and they have two grown daughters. Volkin lives in Oak Ridge, Tenn.