

Stanley Cohen, Nobel Prize winner in Physiology or Medicine in 1986, was an emeritus faculty member at Vanderbilt University. In early February, 2020 he passed away at 97 years old. His memory and legacy will live on for generations.

Stanley Cohen was born in Brooklyn, New York, in 1922, the child of Russian Jewish immigrants who came to the United States in the early 1900s. Although he grew up with limited resources, his parents encouraged his academic proclivities, and he eventually attended Brooklyn College, a city college with a policy of no tuition. He graduated with a degree in biology and chemistry, motivated by his desire to understand the chemistry that drives embryo development.

Cohen joined the Washington University faculty in 1953, and established a fruitful collaboration with Dr. Rita Levi-Montalcini. Previously, Levi-Montalcini had discovered nerve growth factor, a small peptide that regulates the growth, maintenance, proliferation, and survival of certain neurons. Cohen and Levi-Montalcini worked together to isolate the peptide, which directs embryonic cells to develop into the vast network of neurons that make up our nervous system. The discovery and characterization of NGF

Cohen came to Vanderbilt University as an Assistant Professor in the Department of Biochemistry in 1959, determined to understand what exactly was accelerating the development of the newborn mice. He set up his own research group, made up of only himself and a handful of postdocs, and was intimately involved in the experiments and interpretation of data. He eventually purified the element responsible for the increase in epidermal (skin) cell number and size: and named it EGF or, epidermal growth factor. This protein, he would find out, stimulates cell growth and differentiation by binding to its receptor, EGFR.

The discovery of EGF and EGFR was seminal, as it laid the groundwork for our understanding of both embryonic and cancer

Stanley Cohen

A lasting source of inspiration

To save enough money for graduate school, Cohen briefly worked as a bacteriologist at a milk processing plant. He then went on to earn a master's degree in zoology from Oberlin College and a Ph.D. in biochemistry from the University of Michigan in 1948.

After completing his doctorate, Cohen pursued postdoctoral studies focused on new radioisotope techniques at Washington University in St. Louis. While there, he worked with the new chair of the Department of Microbiology, Dr. Arthur Kornberg, who went on to earn the Nobel Prize in Physiology or Medicine in 1959. Along with Kornberg, Cohen participated in a daily journal club in which he and other scientists discussed and debated a paper's findings in depth. This experience was, in his own words, the best education he ever had.

led scientists to the realization that a variety of soluble factors regulates the growth and differentiation of different cell types across the body.

One such scientist was Cohen himself. While conducting experiments with mice, he noticed a peculiarity when he injected newborn pups with extracts containing adult NGF: although mice normally open their eyes ~12–14 days after birth, the injected mice were opening their eyes after only ~7 days. What seemed like a curious observation—one that his peers repeatedly discouraged him from seriously pursuing—eventually led Cohen to determine that an impurity in the extract he was using was responsible for the precocious eyelid opening in the injected mice.

Furthermore, it led to the development of numerous anticancer drugs that target the EGF pathway, many of which are still used today. The importance of Cohen's work on EGF was recognized by the Nobel Committee in 1986, when he shared the Nobel Prize in Physiology or Medicine with Levi-Montalcini, who was recognized for her own work on NGF.

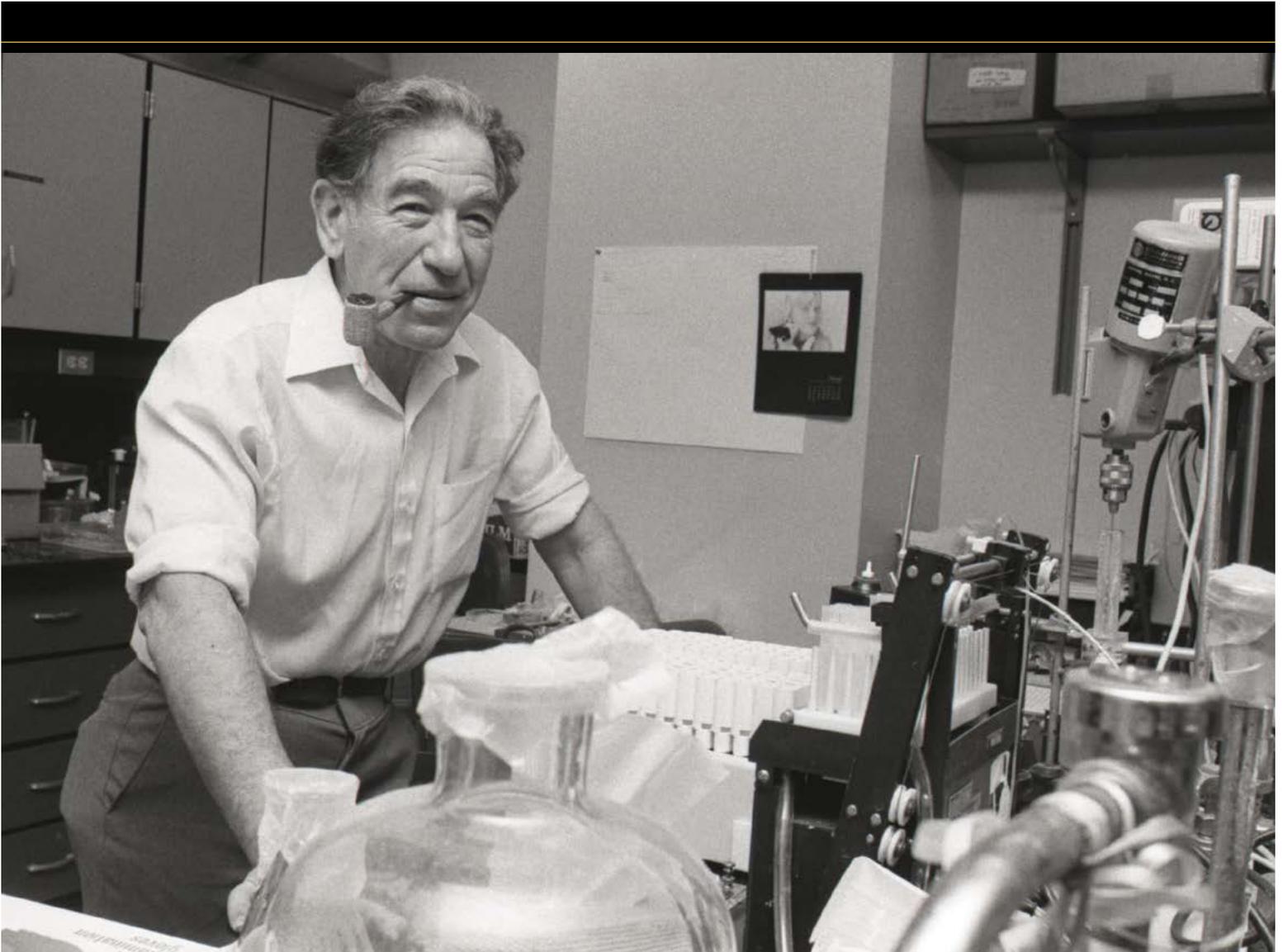
Cohen's passing came with great sadness to those who knew him, and at great loss to the scientific community. He—and his ubiquitous yet often waylaid pipe—are remembered fondly by current and former members of the Department of Biochemistry, and beyond. — Lorena Infante Lara



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“Stanley Cohen was an extraordinary scientist and a great colleague who was loved by everyone at Vanderbilt. His studies of growth factor signaling illustrate the powerful impact of basic research. Stan’s work not only provided key insights into how cells divide but led to the development of many drugs that are used to treat cancer. It was a privilege to have him as a colleague and we celebrate his accomplishments and his humanity.”

– Larry Marnett, dean of Basic Sciences



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