

# Books

## Medicine, Science, and Merck



**Roy Vagelos and Louis Galambos**  
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Roy Vagelos was president and CEO of Merck during the period that the pharmaceutical and health-related industries became large employers of graduate chemical engineers who previously looked mainly to the petrochemical industry for employment. One interesting aspect of his autobiography is that it shows how chemical engineers captured the attention of a busy CEO with a diverse range of responsibilities.

The main focus of CEOs at Merck and other pharmaceutical firms is on drug development, marketing and government relations. *Medicine, Science, and Merck* pays special attention to all these areas and defers to chemical engineering as environmental and manufacturing problems arise.

Merck had worked for years to decrease the volume of gases and chemicals released to the atmosphere and had a good record. But, during his tenure as CEO, "the government sounded a wake-up call by publishing data on emissions of known and suspected carcinogens." Merck reacted to the information, which identified Merck as the largest polluter in Georgia, with a major program to reduce emissions by targeted dates. "Many of Merck's chemical engineers are very talented," says Vagelos. "They just need to be pushed." Merck kept the pressure on. Ultimately, the chemical engineers eliminated the toxic substances and enabled Merck to cut production costs at the same time.

Although he was satisfied that the company was systematically upgrading the quality of its chemical engineering, Vagelos was concerned about manufacturing at Merck. The company could not control or gain maximum efficiencies in its country-oriented production facilities, which produced the same products in three, four or five sites around the world. "A new global manufacturing organization was established, which consolidated manufacturing [operations], reduced costs and led to the development of international standards in everything from environmental protection to production and marketing issues." The improvement in manufacturing costs was part of a larger business strategy that would enable Merck to market patented products, even after they became generic.

Vagelos sees his life as one shaped by circumstance and opportunity, but defined by clear goals. The family is integral. It is considered before any change. Born in 1929 of Greek immigrants, Vagelos resided in New Jersey with his father, mother and siblings. His father operated a candy

shop in Westfield and also speculated in the stock market, a habit that forced the Vagelos family into economic straits in 1936. By 1938, the family's finances had improved, and Vagelos' father purchased a luncheonette in Rahway, NJ, called "Estelle's," which was patronized by several Merck employees. Vagelos, who tended the soda fountain, befriended these professionals, and longed to be as educated as they were.

That desire sparked a career path that included college, a medical degree and a research position at the National Institute of Health (NIH), where Vagelos was recognized for his achievements in biochemistry, a fairly new field at the time. He became the head of Washington Univ.'s dept. of biological chemistry in the school of medicine — a move aided by government grants to support Vagelos' research activities in the biosynthesis of fatty acids, which led to early work on cholesterol, as its relationship to the risk of heart attack became known. Vagelos' research caught the attention of Merck, which enticed him to be president of the Merck Research Laboratory.

Over time, Vagelos changed the direction of Merck's research in drug discovery from that using blind screening experiments to targeting enzymes that are involved in a disease process and developing a medicine that reacts directly with those molecules. The book discusses how this approach was used to develop a series of blockbuster drugs that launched Merck's leadership in the industry for a decade.

In 1984, Merck CEO John Moran promoted Vagelos to the position of executive vice president. Vagelos was asked to focus on manufacturing and marketing — fields that were new to him; but he saw ways to improve things. A year later, Moran, close to retirement, consulted four senior executives regarding who his successor should be. Vagelos replied, "John, if I don't get the job, I'll probably become CEO of some other pharmaceutical firm. I know what is in the Merck pipeline, and what I've done to put it there." Vagelos got the job.

As CEO, he became personally involved in all the issues facing pharmaceutical companies today. His thoughts and actions on drug pricing, HIV research, vaccine development, selling practices, managed care, government relations (including a chapter on getting to know the Clintons and affirmative action) are consistently insightful, often controversial, and primarily responsible for Merck's recognition in the stock market and in the print media — the firm was named *Fortune* magazine's most admired company for seven consecutive years.

Retirement from Merck in 1994 was difficult for Vagelos. But he quickly found new worlds to conquer. He served as chairman of the board of trustees of the Univ. of Pennsylvania until reaching a mandatory retirement age, and is now chairman of two startup companies in the field of medicine.