



HEALTH

George Yancopoulos: Doing Well by Trying to Do Good

A 1976 Westinghouse finalist goes from studying regeneration in a single-celled organism to chief scientific officer of Regeneron

By Laura Vanderkam on October 6, 2008

IN BRIEF

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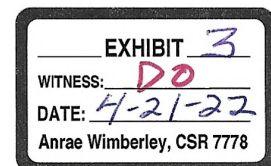
His finalist project: Studying how organisms can regenerate parts of themselves

What led to the project: As a little kid, George Yancopoulos was fascinated by such questions as how lizards can regrow their tails and how the body works. A New York City native whose parents had immigrated from Greece, "the whole reason I went to the Bronx High School of Science is that it had 'science' in the name," he says. He wanted to become a scientist.

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He got a good start on that endeavor with his Westinghouse project, which occupied much of his high school career. He studied a single-celled organism called *Blepharisma*, which generally eats bacteria from decomposing vegetation. Parts of this organism function as a rudimentary digestive system; for instance, little external hairlike structures called cilia sweep bacteria into a cavity which functions as a mouth. *Blepharisma* can regenerate its digestive parts if they're destroyed, and Yancopoulos would tinker with the organism to study exactly how it was managing to accomplish this.

The project fascinated him—which was a good thing, given his schedule. Because he lived in a different borough, Queens, a two-hour commute from the Bronx, he had to leave his house at 4 A.M. in order to start experiments around 6:30. The experiments would run while he was in class, and he'd check them after school before heading home. It made for some long days, but the lack of sleep paid off: He entered his project in the 1976 Westinghouse Science Talent Search, and was named a finalist.

The effect on his career: Yancopoulos's experience cemented his desire to become a scientist, but his father—who had immigrated to the U.S. where he worked as a furrier, a life insurance salesman and finally a financial planner to support his family—said he hadn't sacrificed just for George to become an underpaid academic researcher. He thought he should become a practicing doctor. There was, however, one scientist he told George that it would be all right to emulate: P. Roy Vagelos, who was at the time a rising star at the pharmaceutical giant Merck and later became its CEO. Vagelos just happened to be a doctor, and he just happened to be Greek.

Yancopoulos earned an MD and PhD at Columbia University in biochemistry and molecular biophysics, finishing in 1987. He then accepted a junior faculty position, studying the immune system. Shortly thereafter, he won an eight-year grant worth well over \$1 million in today's money from the Lucille P. Markey Charitable Trust, a foundation that specialized in promoting young biomedical researchers. It was a great start for an academic career. He marched back to his father, triumphantly. His father pointed out that although he might have lots of money for lab equipment, his own salary was still about \$35,000. Surely, if his work was important to people, he could earn more than that?

Right around this time, Yancopoulos got a phone call from Leonard Schleifer, who was recruiting talent for a new biotechnology company. This start-up would try to figure out ways to regrow nerve cells to potentially treat nervous system disorders such as

Alzheimer's or Parkinson's diseases. Yancopoulos was intrigued. With his father's voice ringing in his ears and, aware of the financial rewards that getting in on the ground floor of a company could bring, he decided to join the company which became known as Regeneron.

What he's doing now: Two decades later, Yancopoulos is now the chief scientific officer at Regeneron, headquartered in Westchester County, N.Y. Over the years, he's helped direct the company's research into a variety of areas beyond the original nervous system scope, from eye diseases to cancer. Their first drug, ARCALYST, was approved earlier this year by the U.S. Food and Drug Administration for the treatment of an incredibly rare inflammatory condition—it affects about one in one million—known as the cryopyrin-associated periodic syndromes. It is also currently being tested as a treatment for gout.

Yancopoulos oversees Regeneron's labs which, in addition to drugs, have developed what he calls "the most valuable mouse ever made." Bred to have immune systems that respond just like a human's would, these little critters can quickly show how the human body will react to different compounds.

One aspect of Yancopoulos's life came full circle when, a few years into Regeneron's existence, the company's small staff of scientists realized that curing diseases might be slightly more difficult than simply regenerating cells. They decided that they needed to hire some veteran pharmaceutical leadership. Top on their list? Vagelos of Merck who, to their great surprise, agreed to take the chairman job. Yancopoulos and Vagelos have now been working together for 13 years.

"George Yancopoulos is one of the most accomplished biomedical scientists I know," Vagelos says. Not only did he lay the groundwork for Regeneron's first commercial product, "he has dedicated his career to improving human health through scientific discovery, and he will surely continue to succeed in this endeavor." He's not the only person who is impressed with Yancopoulos's discoveries—the latter was elected to the National Academy of Sciences in 2004, one of the top honors a U.S. scientist can earn.

In recent years Yancopoulos has helped build a program at Westchester's Yorktown High School that gives students the opportunity to do the kind of research that he undertook for the Westinghouse competition many years ago. And he's also realized that his father was right: Research can be worth a lot more than \$35,000. According to Regeneron's 2007

Securities and Exchange Commission filings, Yancopoulos earned \$1.14 million in salary and bonus that year, and held 563,094 Regeneron shares, worth about \$12 million.

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