

UC San Diego Alum Wins Nobel Prize

Dr. Bruce Beutler, who graduated with a bachelor's in biology from the University of California, San Diego in 1976 at the age of 18, has been awarded the 2011 Nobel Prize in Physiology or Medicine. Beutler is chair of the Department of Genetics at The Scripps Research Institute. He is in the process of leaving La Jolla, however, to take a new position as a professor and director of the Center for the Genetics of Host Defense at UT Southwestern Medical Center.



beutler

One of four siblings to attend UC San Diego, Beutler was awarded half of this year's prize along with Jules A. Hoffmann of Strasbourg University in France for their discoveries concerning the activation of innate immunity, the body's first line of defense against invading organisms; the other half goes to Ralph Steinman for his discovery of the dendritic cell and its role in adaptive immunity. Steinman, formerly of Rockefeller University in New York, died Friday of pancreatic cancer.

Beutler said he first learned of winning the Nobel Prize when he checked his cell phone in the middle of the night.

"I noticed that I had a new email message," he said in an [interview](#) with the editorial director of Nobel Media. "And, I squinted at it and I saw that the title line was 'Nobel Prize', so I thought I should give close attention to that. And, I opened it and it was from Goran Hansson, and it said that I had won the

Nobel Prize, and so I was thrilled."

Beutler said he couldn't quite believe the news was true. "I went downstairs and looked at my laptop, and I couldn't get into the Nobel site for quite a while because it was all packed. So, I went to Google News and in a few minutes, I saw my name there and so I knew it was real," he said.

Bestowed annually by the Royal Swedish Academy of Sciences for achievements in physics, chemistry, medicine, literature, economics, and peace, the Nobel Prize recognizes individuals who, as

stipulated in Alfred Nobel's will, "have conferred the greatest benefit on mankind." The prize carries a cash award of about a million dollars.

"UC San Diego offers congratulations to our esteemed alumnus, Bruce Beutler, for winning the Nobel Prize for his groundbreaking work in immunology," said UC San Diego Chancellor Marye Anne Fox. "He is a shining example of the innovation that is central to UC San Diego and our students. Dr. Beutler's work in physiology and medicine is helping to build the future for us all."

According to the prize committee, this year's winners have "revolutionized our understanding of the immune system by discovering key principles for its activation... The discoveries of the three Nobel Laureates have revealed how the innate and adaptive phases of the immune response are activated and thereby provided novel insights into disease mechanisms. Their work has opened up new avenues for the development of prevention and therapy against infections, cancer, and inflammatory diseases."

Beutler followed his older brother Earl to UC San Diego in 1974 at the age of only 16. "I was the third son and UCSD had become somewhat of a family school," he recalled.

All four Beutlers selected the same major – biology. Bruce Beutler, who had a keen interest in biology since he was a child, participated in research activities on campus, with a particular interest in genetics. In addition to taking several genetics courses taught by Dan Lindsley, now a professor emeritus in the UC San Diego department of biology, he worked in Lindsley's lab and credits him for his success.

"Alongside my father, he taught me to be a rigorous scientist," Beutler said in a recent interview.

Indeed, all four Beutler siblings count their UC San Diego education as an invaluable launching pad that prepared them for a lifetime of success. Dr. Steven Beutler went on to become an infectious disease specialist, while Deborah Beutler opened her own practice as an internist. In a family of doctors, Earl Beutler, '75, used his education to forge his own path as an entrepreneur, investor and CEO.

Even as a teenager, Bruce felt at home in the lab. He craved answers to questions that were not yet answered – questions that he would go on to help answer in his illustrious career as a physician scientist. "At that time, genes were theoretical. We knew they were there, but we couldn't actually sequence them, nor actually 'see' mutations in the way we can today. We could only see their effects. I suppose that was a little unsatisfying, and when genetics blossomed with the new technologies of the past two decades, it seemed a miracle to me, and I was ready for it."

Bruce graduated early from UC San Diego, after only two years and a quarter. At only 18, he followed his brother Steven to medical school at the University of Chicago.

He later went on to spearhead the use of a technique called "forward genetics" to study genes used by the mammalian innate immune system to clear pathogens from the body. He is credited with the identification of the key receptors that inform the body when an infection is present. The same receptors also initiate inflammation and shock when an infection becomes widespread. Together with his colleagues at The Scripps Research Institute, he continued to analyze these receptors and pursued an ambitious search for all proteins that protect mammals against defined infections.

A member of the U.S. National Academy of Sciences and Association of American Physicians American Society for Clinical Investigation, Beutler is also the recipient of the 2011 Shaw Prize, 2009 Albany Medical Center Prize among many other prizes

Jade Griffin contributed to this report

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