

Fathers inspired Nobel winners' work

October 3 2011

A love of nature combined with inspiration from their fathers helped drive the careers of two scientists [who were awarded the Nobel Prize on Monday for their work on the immune system](#).

American Bruce Beutler and Luxembourg-born French national Jules Hoffman shared the Nobel Prize for Medicine on Monday, along with fellow co-winner Ralph Steinman, a Canadian native who died days earlier of pancreatic cancer.

The trio was hailed for work that "opened up new avenues for the development of prevention and therapy against infections, cancer and inflammatory diseases," said the [Nobel Foundation](#) in Stockholm.

Hoffman, 70, recalled looking up to his father, who came from a farming family and worked as a high school life sciences teacher while fostering a growing bug collection on the side.

"All his life, he spent his free time collecting and identifying insects and he conveyed his passion for this exceptionally diverse and important group of animals to me during our numerous field studies," Hoffman wrote in a bio he sent to AFP.

As a teenager, Hoffman said he struggled for direction, but "finally I decided to follow the ways of my father and to study biology with the goal of becoming a high school teacher in that field in Luxembourg."

It turned out he would go on much further, taking a lab position with the

French National Research Agency where he began studying antimicrobial defenses in grasshoppers.

In the 1990s, as director of the lab, Hoffman pushed for a new direction, studying the innate immunity of the [drosophila](#), often called fruit flies.

In 1996, he found that a certain gene called the Toll had to be activated for the flies to mount a successful defense against bacteria and [fungi](#).

Hoffman is married with two grown children with academic careers who live in Paris with their spouses.

Beutler, whose research also centered on the immune systems of mice and [fruit flies](#), said he too emulated his father, a physician and scientist who allowed him to work at his lab when he was 14 years old.

"From the age of seven or so, I wanted to be a biologist, and nothing else," he wrote in a statement upon receiving the Shaw Prize in Hong Kong last month. Beutler, now 53, showed an unusual eagerness to learn and skipped several grades in school, graduating from the University of California at San Diego when he was just 18.

His father encouraged him to go to medical school at the University of Chicago.

"I believe this was excellent advice, since biomedical inquiry sometimes yields profound insight into how living systems operate," Beutler wrote.

"My interest in biology grew from a deep fascination with nature, animals in particular.

"The ability of atoms and molecules to assemble themselves into living creatures, endowed with consciousness, volition and mobility, and

seeming much more than the sum of their parts, inspired awe."

In 1998, he made a major discovery in the receptor for lipopolysaccharide, which revealed how mammals sense infection, and how certain [inflammatory diseases](#) begin.

"I'm delighted to receive this award, particularly in the company of my distinguished colleagues Ralph Steinman and Jules Hoffmann," Beutler said in an email.

"It affirms that the work we did in the 1990s to find the LPS receptor was valuable and important, and I hope to carry on using the same general approach for many years to come."

Beutler and Hoffman shared the 2007 Balzan Prize for Innate Immunity and, last week, the Shaw Prize.

They share one half of the 10 million Swedish kronor (\$1.48 million) [Nobel prize](#), while the other half goes to the family of Steinman, who died Friday after a four-year battle with cancer.

Beutler, who chairs the department of genetics at The Scripps Research Institute in California, has three grown sons. But none of them took up science as a profession but who are interested in the topic, often leading to what the scientist called "animated discussion."

"They witnessed much of my career in science, and saw first hand the commitment, rewards and traumas that science entails: relentless work punctuated sometimes by joyful enlightenment, and sometimes by frustration," he added.

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Citation: Fathers inspired Nobel winners' work (2011, October 3) retrieved 27 April 2024 from <https://medicalxpress.com/news/2011-10-fathers-nobel-winners.html>

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