

# Nobel winner sees insect research helping humans

October 4 2011, by Bill Savadove

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Nobel laureate Jules Hoffmann, whose father helped foster his study of bugs, said his decades of research into the immunity of insects could enable scientists to find a cure for human disorders.

The Luxembourg-born French national was awarded the Nobel Prize for medicine on Monday along with fellow scientists American Bruce Beutler and Canadian Ralph Steinman, who died days earlier of pancreatic cancer.

The trio were 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.

"I started working with insects at the age of 17 with my father," Hoffmann, 70, told AFP in the Chinese city of Shanghai, where he is visiting.

"It has been a long, long exciting story with ups and downs. It wasn't a straightforward story but it went -- in the end -- well."

Hoffmann said he last heard from Steinman six months ago and only learned of his death after the Nobel was awarded.

"It's too bad. We didn't directly collaborate in publishing papers. But intellectually we were close," Hoffmann said.

He described Beutler as a friend and long-time colleague with whom he had shared research findings.

Hoffmann's own work has focused on the immune system of insects.

After studying biology, he took a lab position with the French National Research Agency where he began looking at the antimicrobial defences in [grasshoppers](#).

In the 1990s, as director of the lab, Hoffmann 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 defence against bacteria and fungi.

"The implications are that innate immunity, which was totally neglected 30 years ago, has now come to the fore and people realise that this plays a very important role in defences against microbes, said Hoffmann, now president of the French Academy of Sciences.

This research into the immunity system of insects had implications for humans, he said.

"The greatest surprise to me certainly was to see that things are so similar between flies and mammals. We didn't anticipate that," he said.

Hoffmann's work, along with Beutler and Steinman, helps open the door to new drugs and tackling human immune disorders, in which the body mysteriously attacks itself.

"What we do is uncover the molecular mechanisms," he said, adding others could research how these discoveries might apply to humans.

Hoffmann has received a string of awards this year, including Asia's Shaw Prize, Canada's Gairdner Award and France's highest scientific decoration -- the CNRS Gold Medal, awarded by the National Centre for Scientific Research.

"They will let me work until my brain tires and my legs go," he joked, referring to the impact of the awards on his work.

But he played down the award of the Nobel Prize and asked that the contributions of his team and others in the field be acknowledged.

"I didn't really think it would happen. People mentioned (the Nobel), but I didn't want to get my mind involved in thinking about such aspects," he said.

The Nobel committee initially failed to reach Hoffmann by telephone in Shanghai, where he is visiting friends and meeting scientists, before his Chinese host finally broke the news after receiving frantic calls.

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