



# Intouch

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## Boosting crop yields

**Murdoch alumnus Dr Derek Goto is seeking a solution to an agricultural problem which causes significant losses of crop yields worldwide.**

Dr Goto (Bachelor of Science (Hons) 1997) has an independent laboratory in the Creative Research Initiative Sousei at Hokkaido University, Japan.

His research team is investigating how parasitic root-knot nematodes interact with plant cells at the molecular level.

Root-knot nematodes are small worms that invade the root systems of plants



Derek Goto (centre) with lab members Takashi Ikeno (right) and Yosuke Maruyama (left)

and rob them of nutrients, making them more susceptible to disease and causing significantly lower crop yields.

Agriculturalists have long struggled to control these nematode infections because their ability to live completely inside the plant's roots system means the infected plant cannot be treated unless its roots are destroyed.

Dr Goto's research team is seeking insight into how the nematode reprograms plant cells during the early stage of infection to develop safer control strategies.

In a rare appointment for an Australian, Dr Goto gained a five-year tenure track position from December 2007 to operate the independent laboratory.

Dr Goto, who was known as Derek Bartlem before taking his wife's surname, obtained his Masters degree from Hokkaido University in 1999 and his PhD in 2002.

His research path then took him to the globally-renowned Cold Spring Harbor Laboratory in the United States where he worked under the guidance of Professor Rob Martienssen.

He also found himself rubbing shoulders with many of the world's leading scientists including Jim Watson, the geneticist who received the 1962 Nobel Prize for unravelling DNA structure with Francis Crick.

To learn more about Dr Goto's research visit: <http://gotolab.cris.hokudai.ac.jp>