Te Pūnaha Matatini
The University of Auckland
Private Bag 92019
Auckland 1011
New Zealand

Modelling cooperative and competitive behaviour in the exploitation of marine resources.

What size fish should I catch? The answer to this question depends on many factors, including the ecology of the fish in question. But if there are other fishers independently facing the same question, the answer will also depend on their actions. This is therefore a problem in game theory. This project will analyse this problem using a combination of size-structured models of the ecological dynamics, agent-based models of fisher behavior and catch data. Key questions include: what information and regulatory framework is needed to promote cooperative behavior and sustainable fishing? How sensitive is cooperation to noisy data and natural variability in the ecological dynamics?

The student will be enrolled at the University of Canterbury and will work under the supervision of Dr Michael Plank. The student will be co-supervised by Dr Suzi Kerr of Motu Research. There may also be an opportunity for a placement at the Institute of Marine Research in Bergen, Norway as part of the PhD.

Applicants for this scholarship should hold an Honours or Masters level qualification in Mathematics, Economics or related discipline and have a strong interest in ecology and/or fisheries.

The scholarship is tenable for three years and will pay for tuition fees (for a domestic or international student) and a stipend of $x per annum.