

Prize Boosts Research in Model Organisms

The winner of the 2007 *Australasian Science* Prize, Prof Paul Fisher of La Trobe University, says that the award “is a great honour that reinforces my belief in the importance and value of the work we are doing. For most of my life as a scientist, the slime mould ‘Dicty’ – and the work I have done with it – has been regarded by others in this country as interesting, strange, curious but in the final analysis unimportant.

“Winning the Prize for me means that I no longer need feel quite so alone in believing that what I do matters,” Fisher said. “And in a world where the level of your research funding is used as a surrogate measure of the quality of your science, the Prize is recognition that I and my students are doing world-class science. We knew that, but it is enormously uplifting to have others recognise it as well.”

Fisher was speaking after the presentation of the Prize at La Trobe University on 15 November. The award recognises the originality and potentially far-reaching applicability of Fisher’s discovery of how an alarm protein that senses energy can cause cellular damage in mitochondrial diseases (*AS*, Nov/Dec 2007, p.6; September 2007, pp.22–26).

“Since the Prize was announced, I have received a stream of congratulatory emails and messages from colleagues around the world as well as from within Australia,” Fisher said. “My receipt of the Prize has been announced on the web site of the International *Dictyostelium* research community because it is an encouragement to the whole field. Prizes like the *Australasian Science* Prize help to keep people like me going.”

Prof David Vaux, a Federation Fellow at La Trobe University who nominated Fisher for the Prize, said that the prize-winning research illustrated the value of model systems. Compared with the USA and Europe, Australia has very few labs studying the roundworm *Caenorhabditis elegans*, *Drosophila* flies, yeasts or slime moulds.

“Paul Fisher’s work shows how basic research in a simple model organism – in his case the slime mould *Dictyostelium* – can have



Prof Paul Fisher (left) is presented with the *Australasian Science* Prize by the Editor, Guy Nolch. Photo: Kalli Karcelas

major implications for treatment of human disease,” Vaux said at the presentation, which was co-convened with the Australian and New Zealand Association for the Advancement of Science. “Paul Fisher’s work in *Dictyostelium* shows that disease is mainly caused by an over-reaction to a slight drop in mitochondrial energy production. If similar processes happen in human cells, it means there may be a totally different approach to treatment. This is the key next step to be confirmed.”

Vaux believes that funding of medical research in Australia is “not bad, but it would still have to be increased fivefold to equal the USA’s per capita spending. However, funding for university research in physics, chemistry and non-medical biology is dreadful.”

A new feature of the *Australasian Science* Prize this year was the staging of a special public lecture by the winner, which Fisher delivered to a packed theatre.

Peter Pockley

Fisher comments on the dearth of support for research on non-mammalian model systems in this month’s *conSCIENCE* column (see p.42).

Double Cancer Discovery

In both breast cancer and the brain tumour neuroblastoma, tumour cells show raised levels of Myc proteins. Until now the association has been a mystery.

“Our results show that Myc proteins cause cancer by switching off genes involved in cancer prevention, such as transglutaminase-2 (TG2),” says Prof Glenn Marshall, Director of the Centre for Children’s Cancer and Blood Disorders at Sydney Children’s Hospital. “We have also shown that when the neuroblastoma and breast cancer cells are treated with a new class of anti-cancer drugs called histone deacetylase inhibitors (HDACIs), they are able to turn the TG2

gene back on, which then inhibits tumour growth.”

The findings are the result of a collaboration between the Children’s Cancer Institute Australia for Medical Research and Italian researchers. Most cases of neuroblastoma occur in children younger than 10, and it accounts for around one in six childhood cancer deaths.

Marshall says the work makes “TG2 a potential drug development target” and demonstrates the value of HDACIs for these cancers.

The work was published in the 13 November edition of the *Proceedings of the National Academy of Sciences USA*.