

News Release



Super scientists share the Liley Medal honours

Two leading scientists have been honoured for their outstanding work which will lead to new cures for illness and a better standard of health for the most vulnerable people in society.

The Health Research Council of New Zealand's (HRC) Liley Medal was tonight (*Tuesday 11 November*) jointly awarded to Professor Edward Baker and Professor Philippa Howden-Chapman at the Science Honours Dinner in Wellington.

Professor Baker, of The University of Auckland, has made significant findings that could lead to new treatments to fight the organism that causes Strep throat, *Streptococcus pyogenes*.

Professor Philippa Howden-Chapman, of the University of Otago, Wellington, led the landmark Housing Insulation and Health Study. It showed people's health could be transformed by keeping homes warm and dry and has had a positive impact on housing policy in New Zealand.

Professor Baker said he was thrilled to win the Liley Medal for an outstanding contribution to the health and medical sciences in the field of molecular structure.

His winning paper, featured in the journal *Science*, had major findings that transform understanding of the atomic structure of protein assemblies called pili, which stick out from the surface of step bacteria and attach to human cells.

These discoveries are also likely to apply to bacteria that cause other life-threatening diseases such as pneumococcal disease and diphtheria.

The paper described how the pili are held together and which parts are exposed to the immune system. This information could lead to strategies to block the formation of pili, and prevent infection from occurring.

The findings are now being used for vaccine development against the bacterium, which is also responsible for other more severe illnesses, such as acute rheumatic fever, toxic shock and flesh-eating disease.

"The paper itself and the discoveries that led to it were tremendously exciting and reward enough in themselves. So this is the icing on the cake," he said.

"But this was a team effort and I would like to thank in particular two important co-authors - HaeJoo Kang, a wonderful PhD student who did almost all the work and was runner up in the MacDiarmid Awards, and Thomas Proft, who had the idea for our investigation in the first place."

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Professor Philippa Howden-Chapman won the Liley Medal for an outstanding contribution to the health and medical sciences in the field of public health.

Her Housing Insulation and Health Study, which featured on the cover of the *British Medical Journal*, involved fitting insulation to 1,370 households in low income communities in New Zealand.

The study concluded that insulation provided a significantly warmer, drier environment which resulted in improved health, less wheezing, fewer sick days off work and less GP visits and hospital admissions for respiratory conditions.

There have been calls for the study to be reproduced around the world and several ministers in New Zealand have referenced the positive health effects as the evidence underpinning large government budget allocations for retrofitted insulation.

“I feel very humble to be awarded the Liley Medal,” said Professor Howden-Chapman.

“It’s been very rewarding that our research has been able to identify material ways of improving the health of people, who are often the most vulnerable in our society. I’m excited that the Government here and many agencies overseas have heeded the results.

“The academic recognition from my scientific peers for the results of this long period of sustained work by my fantastic team is wonderful,” she added.

HRC Chief Executive Dr Robin Olds said: “Our winners had equally great papers and their findings are so important because they will really make a difference to people’s lives.”

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About the Health Research Council of New Zealand (HRC)

The HRC is the Crown agency responsible for the management of the Government’s investment in public good health research. Ownership of the HRC resides with the

Minister of Health, with funding being primarily provided from Vote Research, Science and Technology. A Memorandum of Understanding between the two Ministers sets out this relationship.

Established under the Health Research Council Act 1990, the HRC's statutory functions include:

- advising the Minister and administering funds in relation to national health research policy
- fostering the recruitment, education, training, and retention of those engaged in health research in New Zealand
- initiating and supporting health research
- undertaking consultation to establish priorities in health research
- promoting and disseminating the results of health research to encourage their contribution to health science, policy and delivery
- ensuring the development and application of appropriate assessment standards by committees or subcommittees that assess health research proposals.

About Sir William Liley

Sir William Liley KCMG, BMedSc, MB, ChB, PhD (ANU), Hon. DSc (VUW), Dip Obs, FRSNZ, FRCOG, Hon. FACOG (1929 – 1983)

Although it is more than 20 years since his passing Sir William Liley's contribution to medical science, particularly in the area of obstetrics, is still celebrated.

Born in Auckland in 1929 Albert William Liley – who always preferred to be known as Bill – was educated at Royal Oak Primary School before moving on to Auckland Grammar where his intellectual capacity began to blossom.

Awarded a University National Scholarship in 1947 Bill Liley distinguished himself at both Auckland and Otago Universities. He was gold medallist in anatomy in 1950, secured a Senior Scholarship in medicine and was awarded the Travelling Scholarship in medicine in 1954.

Instead of taking up the scholarship he headed for the Australian National University where he took up a research scholarship in physiology, working on various aspects of synaptic transmission. Despite being a recently qualified medical graduate he had four papers published in the Journal of Physiology.

Bill Liley returned to Auckland as a Sandoz Research Fellow and in 1958 was awarded a Research fellowship in obstetrics by the Medical Research Council of New Zealand, the HRC's predecessor. From that time until his premature death in 1983 he held a series of appointments with the MRC, including being a council member between 1972 and 1978 and Chairman of the South Pacific Health Committee between 1973 and 1978.

In 1968 Bill Liley was appointed to a personal Chair in Perinatal Physiology at the University of Auckland's Postgraduate School of Obstetrics and Gynaecology. He was particularly attracted to the problems of unborn and newly born children and his major focus became Rh haemolytic disease of the newborn – a major issue in obstetrics. At the time he entered the field perinatal mortality was about 25 per cent.

One of his great contributions lay in extending the use of spectrophotometry of amniotic fluid to a much wider range of potentially affected pregnancies – work that gained him an international reputation. The technique he developed made it possible to identify which baby could be retained safely in utero for a normal gestation period and which should be delivered. As a result perinatal mortality from haemolytic disease at National Women's Hospital fell to 8 per cent.

A CMG in 1967 and was followed in 1973 by a knighthood (KCMG). Sir William's work was also internationally recognised by a variety of organisations. He served as a member of the WHO Expert Advisory Panel on maternal and child health from 1968 until his death. He was an Honorary fellow of the American College of Obstetricians and Gynaecologists and was appointed a member of the International Association for Advice and Research on Mental Deficiency. He also held several other honorary fellowships and memberships of prestigious societies overseas.

An extended biography prepared by Sir John Scott sums up his life in this way:

“Sir William Liley embodied many characteristics which have typified the leaders and giants of scientific endeavour in New Zealand. He combined top-flight intellectual ability with practical skills, humanity and humility. His accomplishments indicated to his generation and those coming after that achievement on a world scale was very much within the grasp of dedicated scientists who chose to return or remain in New Zealand.”