



LA TROBE
UNIVERSITY

**UNDERSTANDING
DISEASE**



Understanding disease

THE CHALLENGE - MITIGATING AND ERADICATING DISEASE

La Trobe University is committed to making a difference and addressing the big issues that matter to our world. We have a long and proud history of bold thinking and interdisciplinary research.

La Trobe already has an international reputation for research on understanding disease. We are now fostering new partnerships to build on our strengths.

Technological advances mean we are now in a prime position to make important advances in research to mitigate and eradicate disease.

THE CHALLENGE: MITIGATING AND ERADICATING DISEASE

Recent technologies have revolutionised our understanding of the molecular basis of disease. We now know more than ever about the building blocks of life. The long-promised transition to personalised human health care is becoming a reality, although medicine still relies heavily on a generalised approach to therapy often with devastating side effects. Scientists at La Trobe are in a strong position to contribute significantly to this move to personalised medicine.

We can develop better diagnostic tools for disease inherited early in life. We can better understand the origin of diseases gained during our lifetime – such as cancer, dementia, cardiovascular disease and diabetes – to gain more insight into treatments.

We can also improve current therapies and treatments to reduce side effects and optimise therapeutic benefits and quality of life. Our research will look for ways to develop personalised nutrition and lifestyle strategies to both prevent disease and ensure the best treatment of chronic disease.

La Trobe's scientists and researchers are ideally placed to discover prognostic markers of disease and therapies that target processes uniquely related to specific diseases as a prelude to taking these findings into clinics and the community.

Our researchers are also working to understand the biology of disease in land and marine plants and animals, with immense consequences globally for food supply, health and economics. Applied technologies and the molecular sciences are revolutionizing food sources, identifying novel pathways to combat diseases that impact food chains and improving our ability to ensure adequate and safe nutrition worldwide.

SOLUTIONS THAT MATTER

La Trobe has an international reputation for research into the molecular basis of disease, frontier biomedical technologies and cancer biology. The University also has internationally recognised expertise in public health, epidemiology and health care, particularly in the areas of dietetics and human nutrition, sexually transmitted diseases, autism, neurological disorders and diseases of ageing more generally.

By strengthening collaboration between these two complementary disciplines, we are creating unique opportunities to increase our understanding of health and disease.

Our research will provide answers that allow governments, health care providers and communities to better target prevention strategies, diagnosis and treatment to improve individual and community health and welfare.

To do that we will address three key themes, each comprising specific research questions around:

1. Diseases of early origin, including inherited diseases.
2. Diseases acquired during a lifetime, including cancer, cardiovascular disease, diabetes, infections and neurological disorders.
3. Prevention, diagnosis and treatment.

Solutions will be found at the intersection of different disciplines and we will emphasise and encourage cross-disciplinary research to find new solutions to old problems.



OUR INVESTMENT IN ACHIEVEMENT

The 2015 ERA ranked the disciplines of Analytical Chemistry, Biochemistry and Cell Biology, Microbiology, Physiology, Plant Biology, Neurosciences, Veterinary Sciences and Zoology as above world standard (5).

WORKING TOGETHER

In an increasingly interconnected world, problems will only be solved by a collective response. We are seeking partners and supporters who share our vision. By working together, we can focus our research effort where it is needed most.

YOUR SUPPORT IS CRUCIAL

We will develop deep partnerships for research programs to broaden the range of avenues for funding support and to transform our research scope, scale and capability.

We are seeking to foster partnerships with business, government departments and other institutions that are interested in supporting or taking part in this research.

We want to hear from academics interested in joining the team and participating in research and welcome future higher degree students who would like to join this research and gain access to scholarship top-up funds, workshops and seminars. Opportunities will also be available for undergraduate students to gain experience through cadetships and our Hallmark Program.

WHERE TO FIND MORE INFORMATION

For more information about Understanding Disease:

E: ud@latrobe.edu.au

FUTURE READY TO ADDRESS THE BIG ISSUES

La Trobe has set an overarching goal to be known for our excellence and innovation in addressing the big issues of our time, for bold thinking with a conscience and our commitment to making a difference.

We have identified five cross-disciplinary research areas that build on our strengths and which address some of the biggest issues affecting the future of people and communities in the world today.

- Securing food, water and the environment
- Sport, exercise and rehabilitation
- **Understanding disease**
- Building healthy communities
- Transforming human societies

These five research areas will contribute significantly to our research goals and will continue to provide our researchers with the opportunity to open their minds and to innovate in areas of global importance.