



**CAIRNS
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PASSION IS IN OUR NATURE

TROPICAL HEALTH FACT SHEET

Cairns is world-renowned for advances in tropical health and works collaboratively with researchers from across the globe to protect health and prevent disease for those living in tropical communities both locally, and worldwide.

The Australian Institute of Tropical Health and Medicine (AITHM) is a modern \$65m research facility at James Cook University, with 119 researchers and 603 members committed to creating a brighter future for those living in the tropics.

Its research is developing lifesaving therapeutics, protecting Australia's borders from the risk of disease spread, and improving healthcare delivery for those living in the Tropics.

The AITHM has established a world class reputation in the field of disease research, and the work being undertaken here is vital to the continued advancement of modern medicine.



“Our work is internationally recognised, internationally funded and carried out by some of the best research groups in the world.”

ALEX LOUKAS
RESEARCH PROFESSOR
AITHM, JAMES COOK UNIVERSITY



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Research Outcomes

Up close with deadly creatures

Getting up close with Australia's most deadly creatures is all in a day's job of AITHM structural biologist Professor Norelle Daly and biochemist Dr David Wilson, who are on the frontline of JCU's Reef to Rainforest venom research into new life-saving drugs.

The Nuclear Magnetic Resonance facility at the AITHM Cairns, allows them to characterise peptides extracted from spiders, cone snails and scorpions, so these peptides can be further explored as promising sources to treat conditions, including cancer.

New test to detect Malaria

After nearly a decade of research, a new test that detects the magnetic properties of malaria-infected blood could soon be used to help eliminate the mosquito-borne disease. Dr Stephan Karl, a Senior Research Fellow in Malaria and Vector Biology at JCU's AITHM, has led an international study to field-test a new tool in the fight to eliminate the disease, which had 229 million reported cases in 2019.

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Research Outcomes



Developing a Cross-Species Vaccine Against Malaria

Professor Doolan and her team at the AITHM at JCU are on the road to developing a vaccine that protects against all five species of the Malaria parasite. Through examining more than 5,500 proteins expressed by the malaria parasite, the Doolan Group have identified antigens for vaccine development with the aim of inducing T-cell responses as a primary outcome, and antibody responses as a back up measure.

According to Professor Doolan, “Nearly half the world’s population is at risk from malaria, with more than 200 million clinical cases each year and almost half a million deaths”. They are currently hoping to secure funding to move the research forward. e disease, which had 229 million reported cases in 2019.

DENISE DOOLAN
PROFESSORIAL RESEARCH
FELLOW AND AITHM DEPUTY
DIRECTOR

“The Australian Institute of Tropical Health and Medicine at James Cook University is improving healthcare delivery for those living in the Tropics via the latest innovations in biomolecular, molecular, genomic, epidemiological, entomological and health systems research.

The Institute is strategically positioned, and holds close ties with clinical partners to undertake translational research that addresses key health issues affecting people who live in the Tropics.”

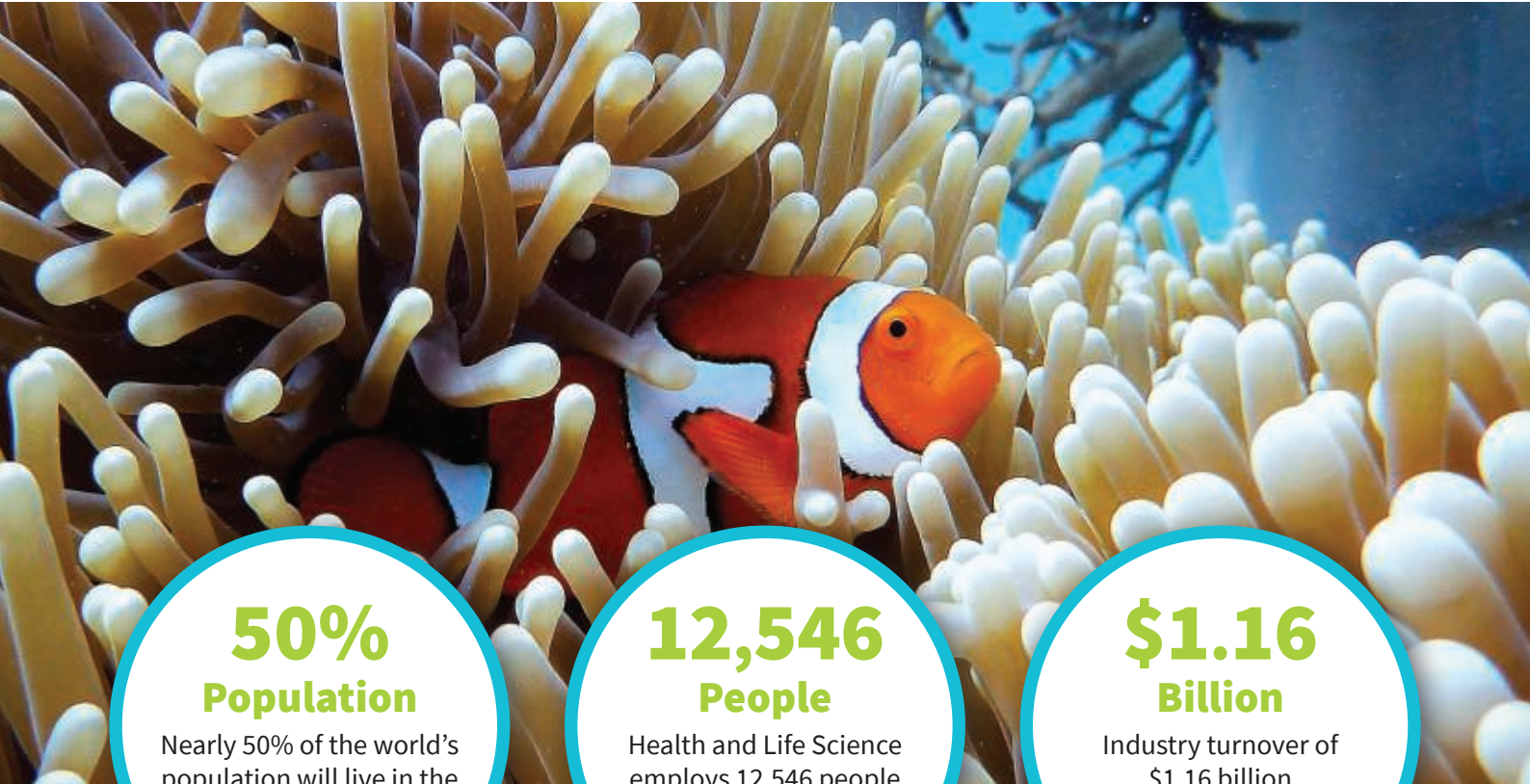
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50%
Population

Nearly 50% of the world's population will live in the tropics by 2050

(source: State of the Tropics 2020 report)

12,546
People

Health and Life Science employs 12,546 people

(source: Cairns Regional Council Investment Prospectus, 2019)

\$1.16
Billion

Industry turnover of \$1.16 billion

(source: Cairns Regional Council Investment Prospectus, 2019)

Partnering with Australia's custodians to discover new medicines

Researchers from the Australian Institute of Tropical Health and Medicine have joined forces with Traditional Owners from Far North Queensland, to discover if medicinal plants found in the Tropics could yield new drugs to treat inflammatory disease.

Natural products chemist Dr Phurpa Wangchuk aims to bring together ancient Indigenous knowledge with modern science to learn more about rainforest plants traditionally used by the Aboriginal and Torres Strait Islander People of the area.

Inflammatory Bowel Disease (IBD) is a primary target of the medicinal plant research project, in light of evidence that Aboriginal and Torres Strait Islander People possess far greater immunity to the condition.

The disease afflicts around 80,000 Australians and costs an estimated \$2.18m in treatment and lost productivity each year.

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AUSTRALIA**