

Perkins Student Projects | 2020

Welcome

Students form an integral part of the Harry Perkins Institute of Medical Research which is Western Australia's premier adult medical research institute.

With more than 200 staff and students, our mission is to improve the health of Western Australians through cutting edge research that translates into new ways to prevent and treat disease.

Our research focuses on the major diseases that face Western Australians today including cardiovascular disease, cancer, diabetes and obesity, ageing and nerve and muscle disease.

We provide project opportunities for students from any university enrolled in degrees including:

- Bachelor of Engineering with Honours
- Bachelor of Science with Honours
- Bachelor of Biomedical Science
- Relevant masters programs
- PhD studies

New facilities and technology

We have entered an exciting new era with our two new research centres at Nedlands and Murdoch. The new buildings combine the talent, technology and facilities available for medical research in Western Australia and enable greater collaboration between many of the State's major research groups.

The building at Nedlands, the main headquarters of the Perkins, is located at the QEII Medical Centre. The building at Murdoch is located on the Fiona Stanley Hospital campus.

Get in touch

We welcome contact from potential students. Details of how to get in touch with Perkins Laboratory Heads are provided in this leaflet or on our website at www.perkins.org.au

Cancer and Cell Biology

Cancer Epigenetics Laboratory

Laboratory Head: Associate Professor Pilar Blancafort
pilar.blancafort@uwa.edu.au

Project 1: Manipulating the epithelial to mesenchymal transition by targeted epigenetic editing in breast cancer

Project 2: Development of novel therapeutic strategies to silence oncogenic fusions in childhood sarcomas

Project 3: Using Epi-CRISPR systems to sensitize breast and brain cancers to chemo and radiotherapies

Project 4: Targeted epigenetic reactivation of dormant tumour suppressors in liver cancer

Project 5: Development of a novel Epi-CRISPR platform to manipulate pro-immunogenic and immune-suppressive genes in breast cancer

Project 6: Epigenetic remodelling through the manipulation of Rab GTPases in breast cancer

Laboratory for Cancer Medicine

Laboratory Head: Professor Peter Leedman

For further information

peter.leedman@perkins.org.au

Cell Signalling Group

Laboratory Head: Associate Professor Evan Ingley
evan.ingley@perkins.uwa.edu.au

Project 1: Hitting the off-switch to stop cancer cells spreading - Control of migration and invasion by the invadopodia regulator AFAP1L1 in sarcoma

Project 2: Personalized Medicine for Sarcoma Patients - Using next generation sequencing and bioinformatic analysis to match the most effective chemotherapy to each sarcoma patient

Project 3: Improving the quality of blood during storage and transfusion for cancer patients - Investigating the role of tyrosine kinases in regulating integrity and longevity of red blood cells

Melanoma Discovery Laboratory

Laboratory Head: Professor Jonas Nilsson
jonas.a.nilsson@surgery.gu.se

Project 1: Development of CAR-T therapies for melanoma

Project 2: Epigenetic regulation of immunotherapy of melanoma

Project 3: Modeling and Interrogating the immune system in humanised animal models

Clinical Science

Bioimaging Research and Innovation or Translational Engineering Laboratory

Laboratory Head: Dr Brendan Kennedy

For further information

brendan.kennedy@uwa.edu.au

Centre for Clinical Research in Emergency Medicine

Laboratory Head: Professor Daniel Fatovich

Daniel.Fatovich@health.wa.gov.au

Project 1: Relationship between fluid resuscitation and the endothelium in sepsis

Project 2: MicroRNAs as biomarkers for the diagnosis of critical illness

Project 3: Unravelling the association between delirium and attendance by older people from aged care to the emergency department

Project 4: Creating a 3-D blood vessel-on-a-chip: investigating vascular responses in critical illness.

Translational Renal Research Laboratory

Laboratory Head: Dr Aron Chakera

aron.chakera@uwa.edu.au

Project 1: Developing novel diagnostics for the earlier detection and treatment of peritonitis

Project 2: The role of mesothelial cells in peritoneal-dialysis associated peritonitis

Project 3: Understanding bacterial factors that predict more severe disease

Project 4: Using peritoneal dialysis as a uniquely accessible human system to study host-pathogen interactions linked to standardized clinical outcomes

Vascular Engineering Laboratory

Laboratory Head: A/Prof Barry Doyle

barry.doyle@uwa.edu.au

For further information please visit our website and contact Barry.

<http://vasclab.mech.uwa.edu.au>

Translational 3d Printing Laboratory for Advanced Tissue Engineering (T3mPLATE)

Laboratory Head: Dr Elena Juan Pardo

For further information

elena.juanpardo@uwa.edu.au

Molecular Medicine

Epigenetics and Genomics Laboratory

Laboratory Head: Professor Ryan Lister
ryan.lister@uwa.edu.au

Project 1: Developing new molecular tools to edit the epigenome

Project 2: Investigating epigenome reconfiguration during learning and memory

Project 3: Artificial manipulation of human cell identity

Molecular Endocrinology and Pharmacology Laboratory

Laboratory Head: Professor Kevin Pflieger
kevin.pflieger@uwa.edu.au

Project 1: Investigation of G Protein-Coupled Receptor Molecular Pharmacology

Mitochondrial Medicine and Biology Laboratory

Laboratory Head: Professor Aleksandra Filipovska
aleksandra.filipovska@uwa.edu.au

Project 1: Energy dysfunction in prostate cancer

Project 2: The role of metabolism in obesity and insulin resistance

Project 3: Characterising the pathology of heart disease

Project 4: Developing new models of disease using CRISPR/Cas technologies

Project 5: The role of protein syntheses in health and disease

Neurogenetic Diseases Laboratory

Laboratory Head: Professor Nigel Laing AO
nigel.laing@perkins.uwa.edu.au

Project 1: Gene discovery in foetal akinesia and other severe early onset genetic diseases

Project 2: Gene discovery for late onset neurodegenerative disorders

Project 3: Investigating the muscle regulome

Project 4: Genetic muscle disease therapy

Project 5: Muscle in a dish - patient iPSCs

Project 6: Muscle snRNAseq

Synthetic Biology and Drug Discovery Laboratory

Laboratory Head: Professor Oliver Rackham
oliver.rackham@curtin.edu.au

Project 1: Beyond CRISPR-Cas9: new tools to manipulate genes

Project 2: Mitochondrial protein synthesis – a master regulator of disease?

Project 3: Using synthetic biology to create new therapeutics

