HONOURS AND GRADUATE RESEARCH
2020 PROJECTS
CENTRAL CLINICAL SCHOOL

A partnership between:

MONASH MEDICINE, NURSING AND HEALTH SCIENCES

monash.edu/medicine/ccs
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Honours and Graduate Research study through Central Clinical School

Monash University’s Central Clinical School (CCS) undertakes translational research – developing insights from laboratory bench research for use in clinical therapies and treatments. Our departments and research affiliates have strong links with health care providers, ensuring that our research rapidly translates to clinical practice.

Undertaking Honours and postgraduate study with us will give you a wide range of opportunities to continue your studies and develop your career path into many areas of medical and clinical research.

Projects are listed under the following headings

- Australian Centre for Blood Diseases (ACBD)
- Baker Institute
- Burnet Institute
- Department of Diabetes
- Department of Gastroenterology
- Department of Immunology and Pathology
- Department of Infectious Diseases
- Department of Medicine (Peninsula)
- Department of Neuroscience
- Department of Surgery
- Medical Education
- Melbourne Sexual Health Centre (MSHC)
- Monash Alfred Psychiatry research centre (MAPrc)

How to use this index booklet

This index booklet lists the Honours/PhD projects on offer for 2020. For further information about a particular research project, see the project description in the online database at:

supervisorconnect.med.monash.edu/research-projects

For further information regarding individual research projects, students should approach the nominated researcher associated with that project. This booklet is meant as a guide only, as project ideas will be refined between student and supervisor.

Making your application

Applications are completed centrally through Monash University. Prospective applicants should complete an application form, which can be downloaded or obtained from the Faculty Office.

Further information links and entry requirements:

BMedSc(Hons) at CCS:
https://www.monash.edu/medicine/ccs/education/future-students/bmedsc-honours

Immunology & Human Pathology:
https://www.monash.edu/medicine/ccs/education/future-students/honours

Scholarships:
https://www.monash.edu/study/fees-scholarships/scholarships

GR & Grad Cert:
https://www.monash.edu/medicine/ccs/translational/about

For information regarding Honours and postgraduate study at CCS

CCS General Honours Coordinators
A/Prof Justin Hamilton (Human Pathology)
E: justin.hamilton@monash.edu
A/Prof Margaret Hibbs (Immunology)
E: margaret.hibbs@monash.edu
Dr Vilija Jokubaitis (Neuroscience)
E: vilija.jokubaitis@monash.edu

CCS BMedSc(Hons) Coordinators
Prof Karin Jandeleit-Dahm
E: karin.jandeleit-dahm@monash.edu
Prof Merlin Thomas
E: merlin.thomas@monash.edu

For general information regarding Honours and postgraduate study at CCS

Dr Joanne Mouser
CCS Honours Student Services
E: ccs.honours@monash.edu
P: 9903 0784

Ms Sharmila Ramesh
CCS Graduate Research Student Services
E: ccs.hdr@monash.edu
P: 9903 0368
Key for projects at the Central Clinical School

This booklet lists projects suitable for a number of streams at the Central Clinical School, listed below.

Each project has a key for the applicable stream:

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<th>Key</th>
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<td>BMedSc</td>
<td>Bachelor of Medical Science (Honours)</td>
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<tr>
<td>Hons</td>
<td>General Honours (Bachelor of Biomedical Science and Bachelor of Science)</td>
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<tr>
<td>M</td>
<td>Masters in Biostatistics or Biomedical and Health Sciences</td>
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<tr>
<td>PhD</td>
<td>PhD in Translational Research</td>
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Translational Research Pathways

Intake and Education Options

- Domestic and International Applications
- Undergraduate
  - Biomedical Science
  - Science
  - Medical Science
  - Health Sciences
  - Allied Health Degree

- Domestic and International Applications
  - Postgraduate
    - Graduate Certificate in Translational Research
    - Masters in Biostatistics
    - Masters in Biomedical and Health Sciences

- Domestic and International Applications
  - Doctoral
    - Translational Research

Career Paths

- Medicine
- Science
- Allied Health

Flexibility with career prospects

Clinician-Scientist, Biopharmaceutical Industry, Clinical Research Associate, Clinical Trials, Business Development Manager, Patent Law, Spin-out Company Director, Research and Development Scientist, Post-doctoral Scientist, Academic, NHMRC Administrator
Australian Centre for Blood Diseases (ACBD)

ACBD has many research groups investigating blood clotting and cancer diseases.

The Australian Centre for Blood Diseases (ACBD) is a national and international blood diseases centre with recognised research, treatment, and educational programs for blood diseases. ACBD is affiliated with Monash University, Alfred Health, Eastern Health and Southern Health, and is organised into three integrated divisions:

- Clinical and Diagnostic Haematology/Oncology
- Clinical and Basic Research Programs
- Teaching and Education

The ACBD’s research falls into two main areas, Non-Malignant Haematology, and Malignant Haematology & Stem Cell Transplantation.

See more:

www.monash.edu/medicine/ccs/blood-disease

PROJECTS AVAILABLE:

**Molecular interactions between cancer immunotherapy targets in myeloid cells**

Supervisor(s): Assoc Prof Ross Dickins and Dr Katharine Goodall

Email: Ross.Dickins@monash.edu

Applicable for: PhD, M, Hons, BMedSc

**The role of novel haematological tests in evaluating splenic function**

Supervisor(s): Dr Ian Woolley and Assoc Prof Rob Andrews

Email: Ian.Woolley@monash.edu

Applicable for: Hons, BMedSc

**Adhesion-receptor-independent platelet mechano-sensing of shear acceleration gradients at stenosis**

Supervisor(s): Dr Warwick Nesbitt and Assoc Prof Justin Hamilton

Email: Warwick.Nesbitt@monash.edu

Applicable for: PhD, Hons, BMedSc

**Identification of self-renewal networks in T-cell leukemia**

Supervisor(s): Assoc Prof Matthew McCormack and Dr Benjamin Shields

Email: Matthew.McCormack@monash.edu

Applicable for: PhD, M, Hons, BMedSc

**Releasing the differentiation block in acute myeloid leukaemia**

Supervisor(s): Assoc Prof Ross Dickins and Assoc Prof Matthew McCormack

Email: Ross.Dickins@monash.edu

Applicable for: PhD, M, Hons, BMedSc

**The role of the homeobox transcription factor Hhex in Acute Myeloid Leukaemia**

Supervisor(s): Assoc Prof Matthew McCormack and Dr Benjamin Shields

Email: Matthew.McCormack@monash.edu

Applicable for: PhD, M, Hons, BMedSc

**Development and engineering of novel automated microfluidic systems for high content drug screening**

Supervisor(s): Dr Warwick Nesbitt, Prof Harshal Nandurkar and Assoc Prof Justin Hamilton

Email: Warwick.Nesbitt@monash.edu

Applicable for: PhD, Hons, BMedSc

**Platelet Analysis**

Supervisor(s): Assoc Prof Robert Andrews

Email: Rob.Andrews@monash.edu

Applicable for: PhD, Hons, BMedSc

**Using new drugs to target a novel mechanism for improved anti-thrombotic therapy**

Supervisor(s): Assoc Prof Justin Hamilton

Email: Justin.Hamilton@monash.edu

Applicable for: PhD, M, Hons, BMedSc

**Inhibition of the platelet thrombin receptor PAR4 to prevent thrombosis in coronary artery disease**

Supervisor(s): Assoc Prof Justin Hamilton

Email: Justin.Hamilton@monash.edu

Applicable for: PhD, M, Hons, BMedSc

**Targeting (homing) stem cells for the treatment of atherosclerosis, myocardial infarction and stroke**

Supervisor(s): Assoc Prof Christoph Hagemeyer and Dr Ting-Yi Wang

Email: Christoph.Hagemeyer@monash.edu

Applicable for: PhD, M, Hons, BMedSc, Short projects
Targeted virus particles for genetic transfer of fusion proteins to inhibit atherosclerosis
Supervisor(s): Assoc Prof Christoph Hagemeyer and Dr Ting-Yi Wang
Email: Christoph.Hagemeyer@monash.edu
Applicable for: PhD, M, Hons, BMedSc, Short projects

Single-chain antibody-targeted nanoparticles for diagnosis of vascular diseases
Supervisor(s): Assoc Prof Christoph Hagemeyer and Dr Karen Alt
Email: Christoph.Hagemeyer@monash.edu
Applicable for: PhD, M, Hons, BMedSc, Short projects

Recombinant agents for efficient and safe anticoagulation and thrombolysis
Supervisor(s): Assoc Prof Christoph Hagemeyer and Dr Be’eri Niego
Email: Christoph.Hagemeyer@monash.edu
Applicable for: PhD, M, Hons, BMedSc, Short projects

Glucose responsive insulin nanoparticle for the treatment of diabetes
Supervisor(s): Assoc Prof Christoph Hagemeyer and Dr Ting-Yi Wang
Email: Christoph.Hagemeyer@monash.edu
Applicable for: PhD, M, Hons, BMedSc, Short projects
The Baker Institute is an independent medical research facility. The Institute’s work extends from the laboratory to wide-scale community studies with a focus on diagnosis, prevention and treatment of diabetes and cardiovascular disease. The Institute’s main laboratory facilities are located at the Alfred Research Alliance.

See more: https://www.baker.edu.au

PROJECTS AVAILABLE:

**Novel Regulation of Lipid Metabolism**  
Supervisor(s): Dr Anna Calkin and Dr Brian Drew  
Email: anna.calkin@monash.edu  
Applicable for: PhD, Hons

**Plasmalogen modulation: a potential therapeutic approach for metabolic diseases**  
Supervisor(s): Prof Peter Meikle and Dr Graeme Lancaster  
Email: Peter.Meikle@monash.edu  
Applicable for: PhD

**The role of branched chain amino acids and fatty acids in type 2 diabetes**  
Supervisor(s): Prof Peter Meikle and Dr Graeme Lancaster  
Email: Peter.Meikle@monash.edu  
Applicable for: PhD, M, Hons

**The effect of statins on lipid metabolism and the risk of cardiovascular disease**  
Supervisor(s): Prof Peter Meikle and Dr Anna Calkin  
Email: Peter.Meikle@monash.edu  
Applicable for: PhD, M, Hons

**Investigating the role of protein phosphatases in the heart**  
Supervisor(s): Dr Kate Weeks and Assoc Prof Julie McMullen  
Email: Kate.Weeks@monash.edu  
Applicable for: PhD, M, Hons

**Targeting novel regulators of exercise induced heart growth to treat heart failure and complications including atrial fibrillation**  
Supervisor(s): Adj Assoc Prof Julie McMullen, Dr Bianca Bernardo, Dr Kate Weeks and Dr Jenny Ooi  
Email: Julie.McMullen@monash.edu  
Applicable for: PhD, M, Hons

**Antioxidant and anti-inflammatory effect of pomegranate polyphenols on diabetic cardiovascular disease**  
Supervisor(s): Dr Judy De Haan-Klein and Prof Rebecca Ritchie  
Email: Judy.De.Haan-Klein@monash.edu  
Applicable for: PhD, Hons
Burnet Institute

The Burnet Institute combines medical research in the laboratory and at a population level with public health action and advocacy to address major health issues of disadvantaged populations in Australia and communities in the developing world. Three major health themes underpin the Burnet’s work: Infectious diseases, maternal and child health, and young people’s health.

See more: https://www.burnet.edu.au

PROJECTS AVAILABLE:

**Novel tools and approaches for malaria elimination**
Supervisor(s): Dr Jack Richards and Dr Ricardo Ataide
Email: Jack.Richards@monash.edu
Applicable for: PhD, M, Hons

**Advancing vaccine development for infectious diseases by identifying targets and mechanisms of protective immunity**
Supervisor(s): Dr Jack Richards and Dr Ricardo Ataide
Email: Jack.Richards@monash.edu
Applicable for: PhD, M, Hons

**Developing new diagnostic tests for malaria and other infectious diseases**
Supervisor(s): Dr Jack Richards and Assoc Prof David Anderson
Email: Jack.Richards@monash.edu
Applicable for: PhD, M, Hons
The Department of Diabetes has state-of-the-art laboratory facilities.

The newly instituted Monash University Department of Diabetes has a broad range of translational research investigating both causes and clinical therapies for diabetes and its complications including kidney disease, heart disease and blindness. It is the first and only university department in Australia solely dedicated to diabetes research.

See more: www.monash.edu/medicine/ccs/diabetes

PROJECTS AVAILABLE:

Role of AP1 transcription factor JunD in atherosclerosis
Supervisor(s): Dr Waheed Khan and Prof Karin Jandeleit-Dahm
Email: Waheed.Khan@monash.edu
Applicable for: M, Hons, BMedSc

Role of acetyltransferase KAT2A in diabetes and atherosclerosis
Supervisor(s): Dr Waheed Khan and Prof Karin Jandeleit-Dahm
Email: Waheed.Khan@monash.edu
Applicable for: M, Hons, BMedSc

Determining the mechanism of NET gene suppression in cardio-metabolic disease
Supervisor(s): Dr Waheed Khan and Prof Karin Jandeleit-Dahm
Email: Waheed.Khan@monash.edu
Applicable for: M, Hons, BMedSc

Dietary fibre as an adjunct therapy for reducing kidney injury in diabetes
Supervisor(s): Assoc Prof Melinda Coughlan
Email: Melinda.Coughlan@monash.edu
Applicable for: Hons, BMedSc

Clinical epigenetics and molecular based therapies
Supervisor(s): Prof Sam El-Osta, Dr Harir Krishnan K.N. and Dr Jun Okabe
Email: Sam.El-Osta@monash.edu
Applicable for: PhD, Hons, BMedSc

Set7 methyltransferase as a target to reduce the burden of diabetic complications
Supervisor(s): Prof Sam El-Osta and Dr Jun Okabe
Email: Sam.El-Osta@monash.edu
Applicable for: PhD, Hons, BMedSc

The legacy of memory
Supervisor(s): Prof Sam El-Osta and Dr Harir Krishnan Kaipananickal
Email: Sam.El-Osta@monash.edu
Applicable for: PhD, Hons, BMedSc

Epigenetics of diabetes, mapping the human methylome and building the epigenomic atlas of Type 1 Diabetes
Supervisor(s): Prof Sam El-Osta, Dr Ishant Khurana, Prof Mark Cooper and Dr Scott Maxwell
Email: Sam.El-Osta@monash.edu
Applicable for: PhD, Hons, BMedSc

Role of non-coding RNAs in vascular disease
Supervisor(s): Prof Sam El-Osta and Dr Harir Krishnan Kaipananickal
Email: Sam.El-Osta@monash.edu
Applicable for: PhD, Hons, BMedSc

Investigating pathways of mitochondrial quality control in diabetic kidney disease
Supervisor(s): Assoc Prof Melinda Coughlan
Email: Melinda.Coughlan@monash.edu
Applicable for: PhD, Hons, BMedSc

Characterization of the prototype inhibitor of CDA1, CHA-061, in diabetic nephropathy in Akita mice
Supervisor(s): Dr Zhong-Lin Chai and Prof Mark Cooper
Email: Zhonglin.Chai@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Novel anti-inflammatory agents targeting atherosclerosis development in diabetes
Supervisor(s): Dr Phillip Kantharidis
Email: Phillip.Kantharidis@monash.edu
Applicable for: PhD, Hons, BMedSc

Characterising the complement cascade in diabetic kidney disease
Supervisor(s): Assoc Prof Melinda Coughlan and Dr Sih Min Tan
Email: Melinda.Coughlan@monash.edu
Applicable for: Hons, BMedSc

The protective effects of Lipoxin A4 against diabetic nephropathy
Supervisor(s): Dr Phillip Kantharidis
Email: Phillip.Kantharidis@monash.edu
Applicable for: PhD, Hons, BMedSc

Exploring the molecular consequences of processed food intake
Department of Gastroenterology

A/Prof Jane Muir (left) and Dr Marina Iacovou

Department of Gastroenterology (DoG) undertakes research in gastroenterology and intestinal health and disease in a variety of specialist areas. It is internationally recognised for its high-impact research and clinical expertise, including the invention of the low FODMAP diet.

See more: www.monash.edu/medicine/ccs/gastroenterology
Department of Immunology and Pathology

Monash Immunology and Pathology graduate students and postdocs are actively involved in community outreach, including the annual international Day of Immunology.

The Monash University Department of Immunology and Pathology is internationally renowned for its combined expertise in research, teaching and service delivery in immunology and immuno-pathology.

There are extensive research programs in basic and translational immunology, including highly successful collaborations with The Alfred hospital and other AMREP partners. The department’s research activities target diseases including allergy, asthma, autoimmunity, inflammation, diabetes, lupus, organ fibrosis, cancer and malaria. The department also focuses on engineering novel treatments such as nanoparticle-based vaccines in cancer and infection.

See more: www.monash.edu/medicine/ccs/immunology

PROJECTS AVAILABLE:

- **Targeting the blood feeding pathway of the hookworm parasites**
  Supervisor(s): Prof Nicola Harris and Dr Tiffany Bouchery
  Email: Nicola.Harris@monash.edu
  Applicable for: Hons

- **Are immunometabolic processes perturbed in chronic inflammatory disease?**
  Supervisor(s): Assoc Prof Margaret Hibbs and Dr Evelyn Tsantikos
  Email: Margaret.Hibbs@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Defining the factors underpinning steroid-insensitive asthma**
  Supervisor(s): Assoc Prof Margaret Hibbs
  Email: Margaret.Hibbs@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Exploring new pathways that control microglial signalling and neuroinflammation**
  Supervisor(s): Assoc Prof Margaret Hibbs and Dr Bridgette Semple
  Email: Margaret.Hibbs@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Do lymphatic growth factors play an important role in the immune system?**
  Supervisor(s): Assoc Prof Margaret Hibbs
  Email: Margaret.Hibbs@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Manipulating immunisation to achieve preferred outcomes**
  Supervisor(s): Prof David Tarlinton and Dr Isaak Quast
  Email: David.Tarlinton@monash.edu
  Applicable for: PhD

- **Clinical implications of trans-kingdom microbial interactions in the transplanted lung**
  Supervisor(s): Prof Benjamin Marsland
  Email: Benjamin.Marsland@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Targeting fungal and bacterial cross-talk for the prevention of asthma**
  Supervisor(s): Prof Benjamin Marsland
  Email: Benjamin.Marsland@monash.edu
  Applicable for: PhD, M, Hons

- **The use of diet as a mechanism to subvert the progression of chronic lung disease**
  Supervisor(s): Assoc Prof Margaret Hibbs
  Email: Margaret.Hibbs@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

**Investigating the contribution of a newly identified myeloid cell gene - resistin-like gamma (mRetnlg) - during host immune responses**
 Supervisor(s): Prof Nicola Harris and Prof Benjamin Marsland
 Email: Nicola.Harris@monash.edu
 Applicable for: PhD

**Investigating immunity during “trickle” infection by helminth parasites**
 Supervisor(s): Prof Nicola Harris and Dr Gillian Coakley
 Email: Nicola.Harris@monash.edu
 Applicable for: Hons

**The role of the microbiota in the protection against re-infection with intestinal parasitic worms**
 Supervisor(s): Prof Nicola Harris and Dr Mati Moyat
 Email: Nicola.Harris@monash.edu
 Applicable for: Hons

See more: www.monash.edu/medicine/ccs/immunology
Department of Infectious Diseases

The Department of Infectious Diseases (DID), Central Clinical School and Alfred Health, incorporates a large clinical service with active research programs in the fields of HIV, viral hepatitis, infections in the immunosuppressed (such as those with malignancy, in intensive care and post-splenectomy), influenza, drug resistant organisms, antibiotic use and infection prevention and hospital epidemiology. DID integrates clinical services with clinical and basic science research. It offers undergraduate and postgraduate study programs.

See more: www.monash.edu/medicine/ccs/infectious-diseases

PROJECTS AVAILABLE:

Surrogate Markers of Cardiovascular Disease in People with HIV
Supervisor(s): Dr Janine Trevillyan and Prof Jennifer Hoy
Email: Janine.Trevillyan@monash.edu
Applicable for: BMedSc

Which bug to blame? Determining the impact of co-infections on heart disease risk in people living with HIV
Supervisor(s): Dr Janine Trevillyan and Prof Jennifer Hoy
Email: Janine.Trevillyan@monash.edu
Applicable for: BMedSc

Pathogenesis of Heart Disease in People with HIV
Supervisor(s): Dr Janine Trevillyan and Prof Jennifer Hoy
Email: Janine.Trevillyan@monash.edu
Applicable for: BMedSc

Investigating plasmid transmission in clinical pathogens
Supervisor(s): Dr Margaret Lam and Prof Kathryn Holt
Email: Margaret.Lam@monash.edu
Applicable for: M, Hons, BMedSc

Genomics and metabolic modelling of Klebsiella, a drug resistant priority pathogen
Supervisor(s): Dr Kelly Wyres, Prof Kathryn Holt and Dr Jane Hawkey
Email: Kelly.Wyres@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Applying genomics to track the evolution and spread of hospital pathogens
Supervisor(s): Prof Kathryn Holt, Dr Jane Hawkey and Dr Kelly Wyres
Email: Kathryn.Holt@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Pathogen detection and genotyping by sequencing direct from specimens
Supervisor(s): Prof Kathryn Holt, Dr Kelly Wyres and Dr Jane Hawkey
Email: Kathryn.Holt@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Appraisal of Injecting-Drug related infections at the Alfred (AIDA)
Supervisor(s): Dr Andrew Stewardson and Dr Joseph Doyle
Email: Andrew.Stewardson@monash.edu
Applicable for: Hons, BMedSc

Elimination of hepatitis C through rapid testing and treatment
Supervisor(s): Dr Joseph Doyle, Prof Margaret Hellard and Alisa Pedrana
Email: Joseph.Doyle@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Assessing the number of people in Victoria in HIV care and methods to improve retention in HIV care
Supervisor(s): Dr James McMahon and Prof Jennifer Hoy
Email: James.McMahon@monash.edu
Applicable for: Hons, BMedSc

Barriers to hepatocellular carcinoma screening uptake in Victoria
Supervisor(s): Dr Joseph Doyle and Dr Jessica Howell
Email: Joseph.Doyle@monash.edu
Applicable for: M, Hons, BMedSc
Eliminating hepatitis C infection in Victoria through treatment scale up: helping prescribers initiate treatment
Supervisor(s): Dr Joseph Doyle, Dr Alisa Pedrana and Prof Margaret Hellard
Email: Joseph.Doyle@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Predicting and reducing hepatitis C reinfection following treatment
Supervisor(s): Dr Joseph Doyle and Prof Margaret Hellard
Email: Joseph.Doyle@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Hepatitis B screening and antiviral prophylaxis during immunosuppression: understanding current clinical practice and acceptability of clinical guidelines
Supervisor(s): Dr Joseph Doyle and Dr Jess Howell
Email: Joseph.Doyle@monash.edu
Applicable for: Hons, BMedSc

Clinical utility and cost-effectiveness of screening for latent tuberculosis among health care workers in Australia
Supervisor(s): Dr Joseph Doyle and Prof Allen Cheng
Email: Joseph.Doyle@monash.edu
Applicable for: Hons, BMedSc
A/Prof Richard Beare (left) and Prof Velandai Srikanth

The Academic Unit, Medicine, Peninsula Health, is comprised of researchers with different and complementary skill sets whose goal is to conduct high quality translational research into chronic conditions affecting the ageing population. Expertise spans from clinical medicine, bioinformatics and imaging, health services research including data linkage, and biostatistics. Major initiatives include the study of poor metabolic health (e.g. obesity, type 2 diabetes) and dementia, cerebrovascular disease and dementia, frailty and delirium in hospitalized older people, novel technologies for designing health service delivery for stroke, and community systems of care for people with dementia. Members of the group have several local, national and international collaborations.

See more: https://www.monash.edu/medicine/ccs/medicine-alfred/research/srikanth-group

PROJECTS AVAILABLE:

- **Utilisation of aged care packages following stroke**
  Supervisor(s): Dr Nadine Andrew and Prof Velandai Srikanth
  Email: Nadine.Andrew@monash.edu
  Applicable for: PhD, M, Hons

- **Exploring GP care following stroke using linked data**
  Supervisor(s): Dr Nadine Andrew, Prof Velandai Srikanth and Dr Monique Kilkenney
  Email: Nadine.Andrew@monash.edu
  Applicable for: PhD, M

- **The quality of GP care following stroke**
  Supervisor(s): Prof Velandai Srikanth and Dr Nadine Andrew
  Email: Velandai.Srikanth@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Validity of Surface Electromyography (sEMG) for the assessment of ICU acquired weakness**
  Supervisor(s): Prof Velandai Srikanth and Prof Ravindranath Tiruvoipati
  Email: Velandai.Srikanth@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Evaluating sleep in intensive care unit - combining classic and novel tools**
  Supervisor(s): Prof Velandai Srikanth and Prof Ravindranath Tiruvoipati
  Email: Velandai.Srikanth@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **ECG changes with coronary contrast injection as a marker of coronary microvascular dysfunction**
  Supervisor(s): Prof Velandai Srikanth and Dr Jamie Layland
  Email: Velandai.Srikanth@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Non-invasive volume clamp measurement of cardiac output - reliability studies**
  Supervisor(s): Prof Velandai Srikanth, Dr Ashwin Subramanian and Dr Ravindranath Tiruvoipati
  Email: Velandai.Srikanth@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Virtual and augmented reality in surgical training and patient education**
  Supervisor(s): Prof Velandai Srikanth, Prof Warren Rozen and Assoc Prof David Hunter-Smith
  Email: Velandai.Srikanth@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Exploring artificial intelligence in vascular imaging for free-flap reconstructive surgery**
  Supervisor(s): Prof Velandai Srikanth, Assoc Prof David Hunter-Smith and Prof Warren Rozen
  Email: Velandai.Srikanth@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Dupuytrens disease patient-reported outcomes and a new treatment paradigm - multicentre study**
  Supervisor(s): Prof Velandai Srikanth, Assoc Prof David Hunter-Smith and Prof Warren Rozen
  Email: Velandai.Srikanth@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Rehabilitation in elective surgery**
  Supervisor(s): Prof Velandai Srikanth, Dr Ashwin Subramanian and Dr Ravindranath Tiruvoipati
  Email: Velandai.Srikanth@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Depuytrens disease patient-reported outcomes and a new treatment paradigm - multicentre study**
  Supervisor(s): Prof Velandai Srikanth, Assoc Prof David Hunter-Smith and Prof Warren Rozen
  Email: Velandai.Srikanth@monash.edu
  Applicable for: PhD, M, Hons, BMedSc

- **Google-based geospatial mapping of hospital readmissions - towards identifying "hot spots"**
  Supervisor(s): Prof Velandai Srikanth, Assoc Prof Richard Beare and Dr Nadine Andrew
  Email: Velandai.Srikanth@monash.edu
  Applicable for: PhD, M, Hons, BMedSc
Google based geospatial mapping of primary care uptake in patients with stroke
Supervisor(s): Prof Velandai Srikanth, Dr Nadine Andrew and Assoc Prof Richard Beare
Email: Velandai.Srikanth@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Differences in physical activity predict differences in cognition between twin pairs discordant for diabetes
Supervisor(s): Prof Velandai Srikanth and Dr Chris Moran
Email: Velandai.Srikanth@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Correlates of physical activity and brain structure in mid life in the UK Biobank
Supervisor(s): Prof Velandai Srikanth and Dr Chris Moran
Email: Velandai.Srikanth@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Studying the patterns of emergency call-out and outcomes for older people living with a personal alarm system
Supervisor(s): Prof Velandai Srikanth and Dr Nadine Andrew
Email: Velandai.Srikanth@monash.edu
Applicable for: M, Hons, BMedSc
Department of Neuroscience

One of the Department of Neuroscience’s many research groups. Featured here is Prof Patrick Kwan (far left) and his group who research epilepsy.

The Department of Neuroscience has over 150 researchers and graduate students across a wide spectrum of neurological disorders. The specialist areas of the department are investigation of neurological, neuroscience, neurobehavioural, pharmacological and imaging with respect to cognition and various brain disorders including epilepsy, neuroinflammation, neurodegenerative diseases, brain tumours, stroke and traumatic brain injury.

See more: www.monash.edu/medicine/ccs/neuroscience

PROJECTS AVAILABLE:

A pilot randomised trial of transcutaneous tibial neurostimulation treatment to enhance continence rehabilitation after stroke
Supervisor(s): Prof Geoffrey Cloud and Mr Enrique Cruz (External)
Email: Geoffrey.Cloud@monash.edu
Applicable for: Hons, BMedSc

Epilepsy in a Dish - Finding cures for epilepsy using a stem cell-based disease models
Supervisor(s): Dr Ana Antonic-Baker, Dr Ben Rollo, Prof Patrick Kwan and Prof Terence O’Brien
Email: Ana.Antonic-Baker@monash.edu
Applicable for: Hons

Investigating interhemispheric plasticity following paediatric traumatic brain injury (pTBI)
Supervisor(s): Dr Akram Zamani and Dr Bridgette Semple
Email: Akram.Zamani@monash.edu
Applicable for: Hons, BMedSc

The Effects of Orexin Modulation on Sleep, Glymphatic Function, and Recovery from Repetitive Mild Traumatic Brain Injury (TBI)
Supervisor(s): Assoc Prof Richelle Mychasiuk and Assoc Prof Sandy Shultz
Email: Richelle.Mychasiuk@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Investigating the Transition from Acute to Chronic Pain Following Mild Traumatic Brain Injury
Supervisor(s): Assoc Prof Richelle Mychasiuk and Dr Rhys Brady
Email: Richelle.Mychasiuk@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Exploring new pathways that control microglial signalling and neuroinflammation
Supervisor(s): Dr Bridgette Semple and Assoc Prof Margaret Hibbs
Email: Bridgette.Semple@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Diet and Multiple Sclerosis
Supervisor(s): Dr Vilija Jokubaitis, Ms Neha Kaul, Assoc Prof Anneke van der Walt and Prof Helmut Butzkueven
Email: Vilija.Jokubaitis@monash.edu
Applicable for: M, Hons, BMedSc

Dynamic Modelling of Prognosis in Epilepsy: Towards a New Treatment Algorithm
Supervisor(s): Dr Zhibin Chen and Prof Patrick Kwan
Email: Ben.Chen1@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Real-World Health Economic Impact of First Seizure and Newly Diagnosed Epilepsy
Supervisor(s): Dr Zhibin Chen and Prof Patrick Kwan
Email: Ben.Chen1@monash.edu
Applicable for: M, Hons, BMedSc

Exploring the cognitive profile of the migraineur
Supervisor(s): Assoc Prof Joanne Fielding, Dr Meaghan Clough and Prof Owen White
Email: Joanne.Fielding@monash.edu
Applicable for: PhD, M, Hons

Electrophysiological changes after tonic-clonic seizures
Supervisor(s): Assoc Prof Piero Perucca, Prof Terence O’Brien and Ms Shobi Sivathamboo
Email: Piero.Perucca@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Linking brain and behaviour using cognitive eye movement tasks and functional MRI
Supervisor(s): Dr Scott Kolbe, Assoc Prof Joanne Fielding and Dr Meaghan Clough
Email: Scott.Kolbe@monash.edu
Applicable for: PhD, M, Hons

Advanced MRI for monitoring neurological disease
Supervisor(s): Dr Scott Kolbe and Prof Meng Law
Email: Scott.Kolbe@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Assessing the effects of Neuropeptide Y in drug-resistant epilepsy
Supervisor(s): Dr Ana Antonic-Baker, Prof Terence O’Brien, Prof Patrick Kwan and Dr Ben Rollo
Email: Ana.Antonic-Baker@monash.edu
Applicable for: Hons, BMedSc

| 15 |
Visual snow: a behavioural perspective
Supervisor(s): Assoc Prof Joanne Fielding, Dr Meaghan Clough and Prof Owen White
Email: Joanne.Fielding@monash.edu
Applicable for: PhD, Hons, BMedSc

Oculomotor function in autoimmune encephalitis
Supervisor(s): Dr Mastura Monif, Assoc Prof Joanne Fielding, Dr Meaghan Clough and Prof Owen White
Email: Mastura.Monif@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Does sugar really impair cognition?
Supervisor(s): Assoc Prof Nigel Jones
Email: Nigel.Jones@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Evaluating novel therapies to prevent post-stroke epilepsy and associated neurological impairments
Supervisor(s): Mr Pablo Casillas-Espinosa, Assoc Prof Sandy Shultz and Prof Terence O’Brien
Email: Pablo.Casillas-Espinosa@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Early Identification of Psychological Comorbidities in People with Epilepsy to Improve Outcomes
Supervisor(s): Dr Charles Malpas, Dr Genevieve Rayner and Assoc Prof Rubina Alpitis
Email: Charles.Malpas@monash.edu
Applicable for: M, Hons, BMedSc

PET imaging of neuroinflammation as biomarker of post-traumatic epilepsy
Supervisor(s): Mr Idrish Ali, Dr Lucy Vivash and Prof Terence O’Brien
Email: Idrish.Ali@monash.edu
Applicable for: Hons, BMedSc

Modelling the dynamics of fundamental cognitive functions during video electroencephalography monitoring
Supervisor(s): Dr Charles Malpas, Dr Genevieve Rayner and Assoc Prof Rubina Alpitis
Email: Charles.Malpas@monash.edu
Applicable for: M, Hons, BMedSc

Understanding personality profiles of the epilepsy syndromes
Supervisor(s): Dr Charles Malpas, Dr Genevieve Rayner and Assoc Prof Rubina Alpitis
Email: Charles.Malpas@monash.edu
Applicable for: M, Hons, BMedSc

Stress and seizures
Supervisor(s): Assoc Prof Nigel Jones
Email: Nigel.Jones@monash.edu
Applicable for: PhD, M, Hons, BMedSc

NMDA receptors, neural oscillations and cognition
Supervisor(s): Assoc Prof Nigel Jones and Dr Matt Hudson
Email: Nigel.Jones@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Is telomere length associated with cardiac dysfunction in chronic epilepsy
Supervisor(s): Dr Kim Powell, Prof Terry O’Brien and Assoc Prof Richelle Mychasiuk
Email: Kim.Powell@monash.edu
Applicable for: M, Hons, BMedSc

How do concussive head impacts affect the skull?
Supervisor(s): Dr Bridgette Semple, Assoc Prof Sandy Shultz and Dr Stuart MacDonald (External)
Email: Bridgette.Semple@monash.edu
Applicable for: M, Hons, BMedSc

Investigating the genetics of focal epilepsies
Supervisor(s): Assoc Prof Piero Perucca, Prof Terence O’Brien, Prof Patrick Kwan and Prof Samuel Berkovic (External)
Email: Piero.Perucca@monash.edu
Applicable for: PhD, M

Treatment Gap in People with Newly Diagnosed Epilepsy in Australia
Supervisor(s): Prof Patrick Kwan and Dr Zhibin Chen
Email: Patrick.Kwan@monash.edu
Applicable for: M, Hons, BMedSc

Environmental determinants of disability accumulation in Multiple Sclerosis
Supervisor(s): Dr Vilija Jokubaitis, Prof Helmut Butzkueven and Dr Jim Stankovich
Email: Vilija.Jokubaitis@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Long-term Prognosis of Antiepileptic Drug Therapy in People with Newly Diagnosed and Treated Epilepsy
Supervisor(s): Prof Patrick Kwan and Dr Zhibin Chen
Email: Patrick.Kwan@monash.edu
Applicable for: M, Hons, BMedSc

Genotype-Phenotype Correlations in Multiple Sclerosis
Supervisor(s): Dr Vilija Jokubaitis, Prof Helmut Butzkueven and Dr Jim Stankovich
Email: Vilija.Jokubaitis@monash.edu
Applicable for: PhD

Effects of Drugs on Gamma Frequencies and other Cognition-Related Signals in the Rat
Supervisor(s): Dr Christopher French
Email: Christopher.French1@monash.edu
Applicable for: PhD, M, Hons

Predictors and mechanisms of cutaneous adverse drug reactions: a multi-omic approach
Supervisor(s): Prof Patrick Kwan and Dr Alison Anderson
Email: Patrick.Kwan@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Pharmacogenomic studies in Multiple Sclerosis
Supervisor(s): Dr Vilija Jokubaitis, Prof Helmut Butzkueven and Dr Jim Stankovich
Email: Vilija.Jokubaitis@monash.edu
Applicable for: PhD, M, Hons, BMedSc
<table>
<thead>
<tr>
<th>Research Project</th>
<th>Supervisor(s)</th>
<th>Email</th>
<th>Applicable for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical utility and cost-effectiveness of genomic sequencing for epilepsy</td>
<td>Prof Patrick Kwan and Dr Alison Anderson</td>
<td><a href="mailto:Patrick.Kwan@monash.edu">Patrick.Kwan@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>Whole genomic sequencing analysis of genetic and acquired rat strains</td>
<td>Prof Terence O'Brien, Dr Pablo Casillas-Espinosa and Dr Bridgette Semple</td>
<td>Terence.O'<a href="mailto:Brien@monash.edu">Brien@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc, Short projects</td>
</tr>
<tr>
<td>Wearable devices for non-invasive, ambulatory seizure monitoring and prediction</td>
<td>Prof Patrick Kwan and Prof Terence O'Brien</td>
<td><a href="mailto:Patrick.Kwan@monash.edu">Patrick.Kwan@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>Sodium Selenate as a Disease Modifying Treatment for Probable Behavioural Variant Front-temporal Dementia</td>
<td>Prof Terence O'Brien, Dr Lucy Viviash, Dr Charles Malpas and Prof Dennis Velakoulis(External)</td>
<td>Terence.O'<a href="mailto:Brien@monash.edu">Brien@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc, Short projects</td>
</tr>
<tr>
<td>Women's Health in Multiple Sclerosis: Investigating long-term impact of hormones and pregnancy on MS outcomes, and the impact of MS therapies on cervical dysplasia risk</td>
<td>Dr Vilija Jokubaitis, Assoc Prof Anneke van der Walt, Dr Jim Stankovich and Assoc Prof Julia Brotherton(External)</td>
<td><a href="mailto:Vilija.Jokubaitis@monash.edu">Vilija.Jokubaitis@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>Management and prognosis of first seizure and newly diagnosed epilepsy</td>
<td>Prof Patrick Kwan and Dr Zhibin Chen</td>
<td><a href="mailto:Patrick.Kwan@monash.edu">Patrick.Kwan@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>Sodium Imaging in mild Traumatic Brain Injury</td>
<td>Mr David Wright</td>
<td><a href="mailto:David.Wright@monash.edu">David.Wright@monash.edu</a></td>
<td>PhD, M</td>
</tr>
<tr>
<td>Monocytes in Multiple Sclerosis</td>
<td>Prof Terry O'Brien and Prof Helmut Butzkueven</td>
<td><a href="mailto:Mastura.Monif@monash.edu">Mastura.Monif@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>Development and characterisation of an animal model of neurological heterotopic ossification</td>
<td>Dr Rhys Brady, Assoc Prof Sandy Shultz and Assoc Prof Richelle Mychasiuk</td>
<td><a href="mailto:Rhys.Brady@monash.edu">Rhys.Brady@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>Keeping the Brain and the Heart in Sync - HERG channels in the CNS</td>
<td>Dr Christopher French</td>
<td><a href="mailto:Christopher.French1@monash.edu">Christopher.French1@monash.edu</a></td>
<td>PhD, M, Hons</td>
</tr>
<tr>
<td>Does epilepsy cause a secondary cardiac channelopathy?</td>
<td>Dr Kim Powell and Prof Terry O'Brien</td>
<td><a href="mailto:Kim.Powell@monash.edu">Kim.Powell@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>Biomarkers for sports concussion</td>
<td>Assoc Prof Sandy Shultz</td>
<td><a href="mailto:Sandy.Shultz@monash.edu">Sandy.Shultz@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>New Biomarkers for mild Traumatic Brain Injury: CEST MRI</td>
<td>Mr David Wright</td>
<td><a href="mailto:David.Wright@monash.edu">David.Wright@monash.edu</a></td>
<td>PhD, M</td>
</tr>
<tr>
<td>Microglial activation and neurological disease</td>
<td>Dr Pablo Casillas-Espinosa, Prof Terence O'Brien, Assoc Prof Piero Perucca, Dr Alison Anderson and Dr Bridgette Semple</td>
<td><a href="mailto:Pablo.Casillas-Espinosa@monash.edu">Pablo.Casillas-Espinosa@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>Multi-Electrode Recording in the Rat Brain</td>
<td>Dr Christopher French</td>
<td><a href="mailto:Christopher.French1@monash.edu">Christopher.French1@monash.edu</a></td>
<td>PhD, M, Hons</td>
</tr>
<tr>
<td>Cardiac dysfunction in epilepsy: A translational study investigating molecular and epigenetic mechanisms</td>
<td>Dr Kim Powell and Prof Terry O'Brien</td>
<td><a href="mailto:Kim.Powell@monash.edu">Kim.Powell@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>Can a common parasite alter brain injury outcomes?</td>
<td>Assoc Prof Sandy Shultz</td>
<td><a href="mailto:Sandy.Shultz@monash.edu">Sandy.Shultz@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>Acquired epilepsy in Alzheimer's disease</td>
<td>Prof Patrick Kwan and Assoc Prof Nigel Jones</td>
<td><a href="mailto:Patrick.Kwan@monash.edu">Patrick.Kwan@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
<tr>
<td>Plasma biomarkers for epileptogenesis and epileptic seizures</td>
<td>Mr Idrish Ali, Prof Terence O'Brien, Dr Pablo Casillas and Assoc Prof Nigel Jones</td>
<td><a href="mailto:Idrish.Ali@monash.edu">Idrish.Ali@monash.edu</a></td>
<td>PhD, M, Hons, BMedSc</td>
</tr>
</tbody>
</table>
Biomarkers of epileptogenesis and epilepsy disease progression
Supervisor(s): Mr Pablo Casillas-Espinosa, Prof Terence O’Brien, Dr Idrish Ali, Assoc Prof Nigel Jones, Assoc Prof Sandy Shultz
Email: Pablo.Casillas-Espinosa@monash.edu
Applicable for: PhD, M, Hons

How do Antipsychotic Drugs Trigger Seizures?
Supervisor(s): Dr Christopher French
Email: Christopher.French1@monash.edu
Applicable for: PhD, M, Hons

Investigating the role of a Cav3.2 calcium channel mutation in contributing to the epileptic phenotype using congenic rat strains
Supervisor(s): Mr Pablo Casillas-Espinosa, Prof Terence O’Brien and Dr Kim Powell
Email: Pablo.Casillas-Espinosa@monash.edu
Applicable for: PhD, M, Hons

How does aging affect traumatic brain injury pathology and outcomes?
Supervisor(s): Assoc Prof Sandy Shultz
Email: Sandy.Shultz@monash.edu
Applicable for: PhD, M, Hons, BMEdSc

Network Activity in Brain Tissue Recorded with Combined Calcium, Voltage-Sensitive Dye and Genetically Encoded Voltage Sensors and Electrophysiology
Supervisor(s): Dr Christopher French
Email: Christopher.French1@monash.edu
Applicable for: PhD, M, Hons

Development of a low cost, point-of-care diagnostic platform
Supervisor(s): Prof Patrick Kwan and Dr Jianxiong Chan
Email: Patrick.Kwan@monash.edu
Applicable for: PhD, M, Hons, BMEdSc

Identifying Predictors of Death in Patients with Epileptic and Psychogenic Seizures
Supervisor(s): Prof Terence O’Brien, Prof Patrick Kwan, Dr Anne Macintosh and Dr Charles Malpas
Email: Terence.OBrien@monash.edu
Applicable for: PhD, M, Hons, BMEdSc, Short projects

Neuropharmacological strategies for disease modification and prevention of the development of epilepsy
Supervisor(s): Mr Pablo Casillas-Espinosa, Prof Terence O’Brien, Assoc Prof Sandy Shultz and Assoc Prof Nigel Jones
Email: Pablo.Casillas-Espinosa@monash.edu
Applicable for: M, Hons, BMEdSc

How do Anti-Epileptic Drugs Work?
Supervisor(s): Dr Christopher French
Email: Christopher.French1@monash.edu
Applicable for: PhD, M, Hons

Social rehabilitation to rescue social deficits after pediatric brain injury
Supervisor(s): Dr Bridgette Semple and Dr Akram Zamani
Email: Bridgette.Semple@monash.edu
Applicable for: PhD, M, Hons, BMEdSc

Investigating whether mild traumatic brain injuries cause neurodegenerative disease
Supervisor(s): Assoc Prof Sandy Shultz
Email: Sandy.Shultz@monash.edu
Applicable for: PhD, M, Hons, BMEdSc

Sodium Channels in Epilepsy
Supervisor(s): Dr Christopher French
Email: Christopher.French1@monash.edu
Applicable for: PhD, M, Hons

Neural oscillations and cognition
Supervisor(s): Assoc Prof Nigel Jones and Dr Matt Hudson
Email: Nigel.Jones@monash.edu
Applicable for: PhD, M, Hons, BMEdSc

A Pharmacogenomics study of the teratogenicity of valproate based on the prospective Australian Register for Anti-epileptic Drugs in Pregnancy
Supervisor(s): Prof Terence O’Brien, Prof Frank Vajda(External), Dr Alison Anderson, Dr Charles Malpas and Dr Piero Perucca
Email: Terence.OBrien@monash.edu
Applicable for: PhD, M, Hons, BMEdSc, Short projects

Assessing Glymphatic Pathway function in Motor Neuron Disease using MRI
Supervisor(s): Mr David Wright
Email: David.Wright@monash.edu
Applicable for: PhD, M

In vitro brain tumour model - studying epileptic seizure development and sensitivity to anti-cancer therapy
Supervisor(s): Dr Christopher French
Email: Christopher.French1@monash.edu
Applicable for: PhD, M, Hons

Neuroimaging and neuropathological biomarkers of social dysfunction after paediatric brain injury
Supervisor(s): Dr Bridgette Semple and Dr Akram Zamani
Email: Bridgette.Semple@monash.edu
Applicable for: PhD, M, Hons, BMEdSc

The effect of epilepsy on bone
Supervisor(s): Dr Rhys Brady, Assoc Prof Sandy Shultz and Dr Pablo Casillas-Espinosa
Email: Rhys.Brady@monash.edu
Applicable for: M, Hons, BMEdSc

Modelling Epilepsy and Epilepsy Drug Effects - Computational Neuroscience Project
Supervisor(s): Dr Christopher French
Email: Christopher.French1@monash.edu
Applicable for: PhD, M, Hons
Does stress contribute to epilepsy?
Supervisor(s): Assoc Prof Nigel Jones and Dr Idrish Ali
Email: Nigel.Jones@monash.edu
Applicable for: PhD, M, Hons, BMedSc

The role and treatment of inflammation in brain injury and polytrauma
Supervisor(s): Assoc Prof Sandy Shultz
Email: Sandy.Shultz@monash.edu
Applicable for: PhD, M, Hons

Elucidating the neuropathological underpinnings of visual snow
Supervisor(s): Assoc Prof Joanne Fielding, Dr Meaghan Clough and Dr Scott Kolbe
Email: Joanne.Fielding@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Circulating microRNAs as biomarkers of concussion
Supervisor(s): Dr Stuart McDonald and Assoc Prof Sandy Shultz
Email: Stuart.McDonald@monash.edu
Applicable for: PhD, M, Hons, BMedSc

The effect of human amnion epithelial cells on traumatic brain injury outcomes
Supervisor(s): Dr Stuart McDonald and Dr Bridgette Semple
Email: Stuart.McDonald@monash.edu
Applicable for: Hons

Novel neuro-cognitive markers of epileptiform activity
Supervisor(s): Dr Rubina Alpitsis, Dr Charles Malpas and Dr Genevieve Rayner
Email: Rubina.Alpitsis@monash.edu
Applicable for: M, Hons, BMedSc

Making sense of the evidence regarding prevention of stroke and other arterial disease complications using non-procedural methods
Supervisor(s): Assoc Prof Anne Abbott and Prof Terry O’Brien
Email: Anne.Abbott@monash.edu
Applicable for: PhD, M, Hons, BMedSc, Short projects

Characterising cognitive impairments in patients with neuromyelitis optica spectrum disorder
Supervisor(s): Assoc Prof Joanne Fielding, Prof Owen White and Dr Meaghan Clough
Email: Joanne.Fielding@monash.edu
Applicable for: PhD, M, Hons

Barriers to early epilepsy diagnosis and the impact of diagnostic delay
Supervisor(s): Dr Anne McIntosh and Dr Piero Perucca
Email: Anne.McIntosh@monash.edu
Applicable for: M, Hons, BMedSc
Department of Surgery

The Department of Surgery, part of the CCS's Division of Clinical Sciences, is a centre for clinical and surgical research and education, contributing to Monash's MBBS and offering postgraduate study programs.

Research in the Department of Surgery includes programs in a wide variety of areas including trauma, burns, cardiothoracic, colorectal, endocrine, upper gastrointestinal, urology, orthopaedics, spine injury, general surgery and neurosurgery specialisations.

The Department of Surgery is closely associated with the National Trauma Research Institute.

See more: www.monash.edu/medicine/ccs/surgery-alfred

PROJECTS AVAILABLE:

Examining the inflammatory profile of adipose tissue in oesophageal cancer
Supervisor(s): Dr Paul Burton
Email: Paul.Burton@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Obesity related systemic inflammation as a driver of Non-alcoholic fatty liver disease
Supervisor(s): Dr Paul Burton and Email: Paul.Burton@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Outcomes of gastro-oesophageal cancer in Victoria
Supervisor(s): Dr Paul Burton
Email: Paul.Burton@monash.edu
Applicable for: PhD, M, Hons, BMedSc

The role of oesophageal manometry in Upper GI surgery
Supervisor(s): Dr Paul Burton
Email: Paul.Burton@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Outcomes of major bariatric surgical procedures
Supervisor(s): Dr Paul Burton
Email: Paul.Burton@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Comparative Outcomes of sleeve gastrectomy and adjustable gastric banding
Supervisor(s): Dr Paul Burton
Email: Paul.Burton@monash.edu
Applicable for: PhD, M, Hons, BMedSc

Measuring the inflammatory response to bariatric surgery
Supervisor(s): Dr Paul Burton
Email: Paul.Burton@monash.edu
Applicable for: PhD, M, Hons, BMedSc
The M-Ed Precinct at the Central Clinical School is responsible for coordinating teaching for Monash MBBS students in their final three clinical years (Years 3B, 4C & 5D). The key goals of M-Ed are focused on teaching patient centred bedside skills, as well as providing the students with in depth theoretical medical knowledge and clinical skills training. With these comprehensive teaching elements acting together we hope to give the students the best opportunities within a challenging and supportive learning environment. Here we place emphasis on quality teaching with exceptional resources and using engaging teaching tools to set our medical students up for their future practice.

Our research projects focus on the area of medical education and how educational ideas and tools can be best utilised within the medical education program.

See more: https://www.monash.edu/medicine/ccs/education/umed

PROJECTS AVAILABLE:

Assessing the impact of observing an instructional recording by an expert on the physical examination skills of third year medical students
Supervisor(s): Assoc Prof Anne Powell and Dr Fiona Bodey
Email: Anne.Powell@monash.edu
Applicable for: BMedSc

Does additional practise of simulated urinary catheter insertion increase competency on first attempt on a real patient
Supervisor(s): Assoc Prof Anne Powell and Assoc Prof Laila Rotstein
Email: Anne.Powell@monash.edu
Applicable for: BMedSc
The Melbourne Sexual Health Centre (MSHC) is a specialised unit for the diagnosis and treatment of sexually transmissible infections (STI/HIV) and is a principal centre for training health professionals in Victoria. The Centre conducts epidemiological, public health and clinical research primarily aimed at improving the services offered at MSHC.

See more: [www.monash.edu/medicine/ccs/sexual-health](http://www.monash.edu/medicine/ccs/sexual-health)  [www.mshc.org.au](http://www.mshc.org.au)

**PROJECTS AVAILABLE:**

- **Systematic review of national guidelines for STI screening among HIV PrEP users**
  Supervisor(s): Dr Jason Ong
  Email: Jason.Ong@monash.edu
  Applicable for: Hons, BMedSc

- **Novel approaches to diagnosing and controlling bacterial sexually transmitted infections**
  Supervisor(s): Assoc Prof Eric Chow, Assoc Prof Marcus Chen and Prof Christopher Fairley
  Email: Eric.Chow@monash.edu
  Applicable for: PhD, Hons, BMedSc

- **HIV, sexually transmitted infections and sexual practices among male sex workers in Melbourne**
  Supervisor(s): Assoc Prof Eric Chow and Prof Christopher Fairley
  Email: Eric.Chow@monash.edu
  Applicable for: M, Hons, BMedSc, Short projects

- **Systematic review of national guidelines for STI screening among HIV PrEP users**
  Supervisor(s): Dr Jason Ong
  Email: Jason.Ong@monash.edu
  Applicable for: Hons, BMedSc

- **Predictors of incident early syphilis among gay and bisexual men who have sex with men attending Melbourne Sexual Health Centre**
  Supervisor(s): Assoc Prof Eric Chow and Prof Christopher Fairley
  Email: Eric.Chow@monash.edu
  Applicable for: M, Hons, BMedSc, Short projects

- **Improving miscarriage support care for women, partners and families**
  Supervisor(s): Dr Jade Bilardi and Prof Meredith Temple-Smith (External)
  Email: Jade.Bilardi@monash.edu
  Applicable for: M, Hons, BMedSc

- **Cost-effectiveness of express sexually transmitted infection testing (STI) services for men who have sex with men, compared with “standard” STI services**
  Supervisor(s): Dr Jason Ong, Prof Christopher Fairley and Dr Eric Chow
  Email: Jason.Ong@monash.edu
  Applicable for: M, Hons, BMedSc

- **Comparing access to sexual health services between Medicare beneficiaries and non-Medicare beneficiaries**
  Supervisor(s): Assoc Prof Eric Chow and Prof Christopher Fairley
  Email: Eric.Chow@monash.edu
  Applicable for: Hons, BMedSc, Short projects

- **Patient delivered partner therapy for chlamydia**
  Supervisor(s): Dr Jason Ong
  Email: Jason.Ong@monash.edu
  Applicable for: M, Hons, BMedSc

- **Nudging people to attend medical consultations**
  Supervisor(s): Dr Jason Ong
  Email: Jason.Ong@monash.edu
  Applicable for: Hons, BMedSc, Short projects
Monash Alfred Psychiatry research centre

Monash Alfred Psychiatry research centre (MAPrc) is one of Australia’s largest clinical research centres in psychiatry. The centre has a long track record of producing world class research with direct clinical translation.

The key goal of MAPrc is to conduct clinical research aimed at developing new treatments with direct, effective, and immediate applications. The research covers all ages and many different mental illnesses. MAPrc research is integrated with clinical practice, based in the Alfred Hospital in affiliation with Monash University.

We have a multidisciplinary group of researchers with a research agenda that meets clinical and social needs and has a short 1-5 year timeline to real clinical impact.

See more:
www.maprc.org.au

PROJECTS AVAILABLE:

**Snapchat Dysmorphia: The role of social media in body image concerns**
Supervisor(s): Dr Gemma Sharp and Prof Jayashri Kulkarni
Email: Gemma.Sharp@monash.edu
Applicable for: PhD, Hons, BMedSc

**Targeting oscillations in chronic pain with chronic opioid-use**
Supervisor(s): Dr Bernadette Fitzgibbon
Email: Bernadette.Fitzgibbon@monash.edu
Applicable for: PhD

**Computational phenotyping to profile individual variation in pain disorders**
Supervisor(s): Dr Bernadette Fitzgibbon
Email: Bernadette.Fitzgibbon@monash.edu
Applicable for: PhD

**Genital Self-Image Concerns in Adolescents: The Rise of Cosmetic Genital Surgery**
Supervisor(s): Dr Gemma Sharp and Prof Jayashri Kulkarni
Email: Gemma.Sharp@monash.edu
Applicable for: PhD, Hons, BMedSc

**Is heart rate activity more dynamically modulated by neural activity in mindfulness meditators?**
Supervisor(s): Dr Neil Bailey
Email: Neil.Bailey@monash.edu
Applicable for: PhD, Hons, BMedSc

**Sex hormones and cognitive changes with aging**
Supervisor(s): Dr Caroline Gurvich and Assoc Prof Kate Hoy
Email: Caroline.Gurvich@monash.edu
Applicable for: PhD, Hons, BMedSc

**Investigating comorbid diagnosis of eating disorders and borderline personality disorder: prevalence and symptomatology**
Supervisor(s): Prof Jayashri Kulkarni, Dr Caroline Gurvich and Dr Natalie Thomas
Email: Jayashri.Kulkarni@monash.edu
Applicable for: PhD

**Cross sectional study of borderline personality disorder symptomatology and trauma history in women with polycystic ovary syndrome compared to healthy controls**
Supervisor(s): Prof Jayashri Kulkarni, Dr Caroline Gurvich and Dr Natalie Thomas
Email: Jayashri.Kulkarni@monash.edu
Applicable for: PhD

**Depression and the oral contraceptive pill - substudy of types of pill used and depressive mood**
Supervisor(s): Prof Jayashri Kulkarni, Dr Caroline Gurvich and Dr Natalie Thomas
Email: Jayashri.Kulkarni@monash.edu
Applicable for: PhD

**Cognitive functioning and emotion processing during the menopause transition**
Supervisor(s): Dr Caroline Gurvich, Prof Jayashri Kulkarni and Dr Natalie Thomas
Email: Caroline.Gurvich@monash.edu
Applicable for: PhD, Hons, BMedSc

**Impact of type and timing of childhood trauma on adult cognition and psychopathology**
Supervisor(s): Dr Caroline Gurvich, Dr Natalie Thomas and Prof Jayashri Kulkarni
Email: Caroline.Gurvich@monash.edu
Applicable for: PhD, Hons, BMedSc

**Study of premenstrual dysphoric disorder (PMDD) in women with borderline personality disorder (BPD)**
Supervisor(s): Prof Jayashri Kulkarni, Dr Caroline Gurvich and Dr Natalie Thomas
Email: Jayashri.Kulkarni@monash.edu
Applicable for: PhD
Exploring cognition and personality and its role in pain modulation following transcranial Direct Current Stimulation (tDCS)
Supervisor(s): Dr Bernadette Fitzgibbon
Email: Bernadette.Fitzgibbon@monash.edu
Applicable for: Hons, BMedSc, Short projects

Does regular mindfulness meditation alter neural inhibition / excitation balances? An EEG investigation
Supervisor(s): Dr Neil Bailey
Email: Neil.Bailey@monash.edu
Applicable for: PhD, Hons, BMedSc

Increasing the speed of thought: Using brain stimulation to enhance speed of information processing
Supervisor(s): Assoc Prof Kate Hoy and Dr Bernadette Fitzgibbon
Email: Kate.Hoy@monash.edu
Applicable for: Hons, BMedSc
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