



Curtin University



# PUBLIC HEALTH HONOURS MAJOR

2022 PROJECTS

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# WELCOME

## ABOUT HONOURS

The Public Health honours is a specialised year of study for those students who have demonstrated a high level of academic achievement in their undergraduate degree. The honours year offers an opportunity to immerse yourself in a research topic under the expert guidance of an academic supervisor, providing you with advanced training in contemporary approaches to health research.

If you have performed well in your undergraduate studies, have a capacity for defining and solving problems, enjoy discussing concepts, and exploring ideas, we encourage you to apply for honours.

Honours has the ability to improve your employment opportunities, as many prospective employees view honours as an indicator of advanced skills and knowledge and an ability to work independently. The completion of an honours year shows that you have persistence, the ability to apply yourself to achieving a complex goal, and are able to manage your time when presented with a large task to complete independently.

Public Health honours students are a select group. If you are successful in your application, we look forward to welcoming you to our stimulating, supportive and growing research community.

## YOUR HONOURS COORDINATOR



**Associate Professor Richard Norman**

Curtin Research Fellow  
PHHonours@curtin.edu.au

## INSTRUCTIONS TO STUDENTS

We encourage you to review the available projects listed under the School of Population Health themes in this booklet. We then invite you to contact the academic supervisor responsible for the project to discuss the research project in more detail.

## ABOUT THE SCHOOL OF POPULATION HEALTH

The School of Population Health is one of four within the Faculty of Health Sciences, and was formed in a recent merger of the Schools of Public Health and Psychology. We teach and conduct cutting edge, world-class research across six themes: Nutrition and Dietetics, Occupation, Environment and Safety, Health Economics and Data Analytics, Health Promotion and Sexology, Mental Health Psychology, and General Psychology. The breadth these themes provide gives opportunities for the School to excel in cross-disciplinary, end-user focused research.

The research undertaken within the School has an international outlook supported by a network of strong relationships with universities across Southeast Asia and Europe, making us an attractive destination for international students wanting to pursue education in public health.





# HEALTH PROMOTION PROJECTS

## PROJECT TITLE

Competency development in health promotion student fieldwork

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Dr Linda Portsmouth - [L.Portsmouth@curtin.edu.au](mailto:L.Portsmouth@curtin.edu.au)

Secondary Supervisor: Dr Krysten Blackford - [K.Blackford@curtin.edu.au](mailto:K.Blackford@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Practical skill development during university fieldwork placements is a vital way to prepare graduate health promotion practitioners their early career roles. There is limited literature as to how to enhance the health promotion student fieldwork experience. While generic aspects of the successful fieldwork experience and supervisory relationship can be distilled from the literature with regard to other health disciplines, there is a need for more health promotion specific knowledge which focuses on the development of the IUHPE competencies. This project proposes to interview recent graduates to investigate their perceptions of their: preparation for fieldwork; fieldwork experience; and the supervisory relationship – with a particular focus on how this impacts on their skills and approach to their first job after graduation. Additionally, a survey and key interviews with health promotion practitioners who supervise fieldwork students will also investigate supervisor perceptions of how the health promotion student fieldwork experience can be enhanced.

## GENERAL METHODOLOGICAL SUMMARY

Planning/conducting focus groups/individual interviews with qualitative data analysis (using NVIVO); & online survey using Qualtrics & quantitative analysis.

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

No

## ETHICS

Ethics approval required

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Health promotion graduate (single or double degrees) who undertook a 100 hour PUBH3002 placement in their final year & developed an interest in practical IUHPE competency development & enhancing the student fieldwork experience & the supervisory relationship.

## NUMBER OF STUDENTS FOR PROJECT

1

## PROJECT TITLE

**Mind the Gap: Estimating the costs of best-practice monitoring and enforcement of tobacco control laws at the retail level compared with current practice in WA**

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: A/Professor Jonine Jancey - [j.jancey@curtin.edu.au](mailto:j.jancey@curtin.edu.au)

Secondary Supervisor: TBC

## PROJECT BACKGROUND & OBJECTIVES

Enforcing current tobacco control laws at the retail level is an important component of a comprehensive approach to reducing the harms caused by smoking. These laws cover sales to minors, point of sale display and promotion of tobacco products. The student will undertake a literature review (academic/grey literature) on best practice tobacco licensing and enforcement. Further the student will speak with stakeholders from Western Australia and Tasmania to identify and analyse the costs, resources and current practices relating to tobacco monitoring and compliance. A comparison will be made to identify any gaps between best practice and current practice in WA.

The findings from this research will be used by the Australian Council on Smoking and Health (ACOSH) to advocate for additional resources to be made available to ensure retailers comply with existing tobacco control laws/regulations in WA. For example, the latest WA Health Department survey showed that 10 per cent of retailers sell cigarettes to children. Further resources allocate to compliance monitoring would allow for increased enforcement so that no retailers sell cigarettes to children.

The Honours student will a) undertake a scoping review (academic/grey literature) on best practice tobacco licensing and enforcement; b) collect qualitative data, by way of interviews from stakeholders (to be determined) from WA & Tasmania to identify and analyse the costs, resources and current practices relating to tobacco monitoring and compliance; c) Comparison will be made to identify any gaps between best practice and current practice in WA.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

"Is it banned? Is it illegal?": Navigating Western Australia's regulatory environment for e-cigarettes- located at <https://doi.org/10.1016/j.drugpo.2021.103177>

## GENERAL METHODOLOGICAL SUMMARY

Qualitative methodology - interviews

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

Yes

## ETHICS

Ethics approval required

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Good communication skills and an interest in learning qualitative skills.

## NUMBER OF STUDENTS FOR PROJECT

1 or maybe 2

## PROJECT TITLE

Can you swim? An exploration of water-based activity participation in those from CaLD backgrounds

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Dr Justine Leavy - [j.leavy@curtin.edu.au](mailto:j.leavy@curtin.edu.au)

Secondary Supervisors: Dr Gemma Crawford - [g.crawford@curtin.edu.au](mailto:g.crawford@curtin.edu.au) &

Dr Lynne Millar - [lynne.millar@curtin.edu.au](mailto:lynne.millar@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Participation in water-based activities including swimming is part of the Australian culture. However, swimming persists as a challenge for many groups. Some populations, for example women, including those from culturally and linguistically diverse backgrounds (CaLD) may be less likely to participate in water-based activities due to factors related to migration and acculturation. Effective strategies are required to support CaLD groups to overcome barriers to participating in swimming and other aquatic activities and promote the physical and social benefits of water-based activity.

This project will explore and evaluate the perceptions, barriers and facilitators for participation in aquatic activities (including swimming) for migrant women from CaLD backgrounds living in metropolitan Western Australia.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Della Bona, M., Crawford, G., Nimmo, L., & Leavy, J. E. (2019). What does 'Keep Watch' mean to migrant parents? Examining differences in supervision, cardiopulmonary resuscitation training and water familiarisation. *International journal of public health*, 64(5), 755-762.

Hayward, J., Morton, S., Johnstone, M., Creighton, D., & Allender, S. (2020). Tools and analytic techniques to synthesise community knowledge in CBPR using computer-mediated participatory system modelling. *NPJ digital medicine*, 3(1), 1-6.

## GENERAL METHODOLOGICAL SUMMARY

This study will employ a qualitative research method using community groups and utilising STICKE (Systems Thinking In Community Knowledge Exchange) to collect data. Data will be analysed thematically and models produced to present results.

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

Yes

## ETHICS

Ethics approval required

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Excellent written and oral communication skills. Proficient with technology and interested in using technology as a data gathering tool. A current drivers license and a second-language is desirable.

## NUMBER OF STUDENTS FOR PROJECT

1 - may consider 2



## PROJECT TITLE

Exploring what water safety means to overseas born mothers and carers of children under 5 years

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Dr Justine Leavy - [j.leavy@curtin.edu.au](mailto:j.leavy@curtin.edu.au)

Secondary Supervisors: Dr Gemma Crawford - [g.crawford@curtin.edu.au](mailto:g.crawford@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

People from culturally and linguistically diverse (CaLD) groups are vulnerable to drowning in Australia, and are a priority in national water safety strategies. This project is interested in insights from CaLD mothers and carers regarding drowning and water safety for both themselves and their children.

Project aim: To explore knowledge, attitudes, beliefs and behaviours towards water safety among overseas-born mothers and carers of children under 5 years now living in WA.

Objectives:

- Examine perceptions of water safety and drowning prevention from women in culturally and linguistically diverse (CaLD) groups;
- Explore barriers & facilitators to water familiarisation skills amongst CaLD women;
- Develop recommendations for drowning prevention resources and strategies specifically designed for women from CaLD backgrounds and their children aged under 5 years

Methods: Participants will be recruited from community organisations & playgroups with established CaLD populations e.g. Sudbury House Mirrabooka & Ishar Multicultural Women's Health Centre. Participants will be: overseas born, newly arrived migrants, aged 18 years and older, and the mother or carer to at least one child under 5 years residing in the Perth metropolitan or regional WA. A semi-structured discussion guide will be developed, pilot tested with the target audience, and refined prior to implementation. The initial domains of enquiry will explore: perceptions, experiences and behaviours of water safety and water-based activities and water familiarisation.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Leavy, J. E., Crawford, G., Leaversuch, F., Nimmo, L., McCausland, K., & Jancey, J. (2016). A review of drowning prevention interventions for children and young people in high, low and middle income countries. *Journal of community health*, 41(2), 424-441.

Della Bona, M., Crawford, G., Nimmo, L., & Leavy, J. E. (2019). What does 'Keep Watch' mean to migrant parents? Examining differences in supervision, cardiopulmonary resuscitation training and water familiarisation. *International journal of public health*, 64(5), 755-762.

## GENERAL METHODOLOGICAL SUMMARY

Qualitative research methods will be undertaken using focus groups and/or in-depth one-on-one interviews. Peer-led data collection may also be considered. Data will be recorded, transcribed and thematically analysed by the student.

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

Yes

## ETHICS

Ethics approval required

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Requires a current drivers license and may require travel to regional Western Australia to collect data.

## NUMBER OF STUDENTS FOR PROJECT

1



## PROJECT TITLE

Examining the vulnerability of culturally and linguistically diverse (CaLD) populations to homelessness in a Western Australian context

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Dr Gemma Crawford - [g.crawford@curtin.edu.au](mailto:g.crawford@curtin.edu.au)

Secondary Supervisor: Dr Krysten Blackford - [k.blackford@curtin.edu.au](mailto:k.blackford@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

People from culturally and linguistically diverse (CaLD) groups are vulnerable to homelessness in Australia; however, this group is not currently recognised in the WA Strategy to End Homelessness. This project will explore insights from CaLD people regarding homelessness prevention, and barriers and enablers to accessing homelessness services for both themselves and their communities in the Perth metropolitan area. It will also review the appropriateness of current homelessness evaluation tools for CaLD groups in Australia.

The research objectives are to:

- examine perceptions of homelessness prevention from CaLD people;
- explore barriers & enablers to accessing homelessness services amongst CaLD people;
- review the appropriateness of homelessness evaluation tools for CaLD people; and
- develop recommendations for homelessness prevention resources and evaluation tools specifically designed for people from CaLD backgrounds and their communities.

This research will employ a mixed methods design. A literature review will be conducted to explore current homelessness prevention, service use, and evaluation methods for CaLD populations. Participants will be recruited from community organisations with established CaLD populations and will be invited to participate in qualitative data collection (e.g. semi-structured interviews or focus groups). A semi-structured discussion guide will be developed, pilot tested with the target group, and refined prior to implementation. Commonly used homelessness evaluation tools will be assessed for use in CaLD groups in an Australian context. It is anticipated that this will include validity and reliability testing of the Vulnerability Index – Service Prioritisation Decision Assistance Tool (VI-SPDAT) for use with CaLD populations in WA. VI-SPDAT is an evidence-informed tool used to assess acuity of homelessness and prioritise appropriate intervention.

The information from this research will assist with developing recommendations for homelessness prevention, service provision and evaluation for CaLD groups in WA.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Dawes, G. & Golpalkrishnan, N. (2014). Far North Queensland culturally and linguistically diverse communities (CALD) homelessness project 2014. [https://researchonline.jcu.edu.au/29150/1/29150\\_Dawes\\_Gopalkrishnan\\_2014.pdf](https://researchonline.jcu.edu.au/29150/1/29150_Dawes_Gopalkrishnan_2014.pdf)

Flatau, P., Smith, J., Carson, G., Miller, J, Burvill, A. & Brand, R. (2015). The housing and homelessness journeys of refugees in Australia. Report No.: AHURI Final Report No. 256. [https://www.ahuri.edu.au/\\_\\_data/assets/pdf\\_file/0026/5759/AHURI\\_Final\\_Report\\_No256\\_The-housing-and-homelessness-journeys-of-refugees-in-Australia.pdf](https://www.ahuri.edu.au/__data/assets/pdf_file/0026/5759/AHURI_Final_Report_No256_The-housing-and-homelessness-journeys-of-refugees-in-Australia.pdf)

Fozdar, F. & Hartley, L. (2013). Refugee resettlement in Australia: What we know and need to know. *Refugee Survey Quarterly*, 32(3), 23-51. <https://doi.org/10.1093/rsq/hdt009>

## **GENERAL METHODOLOGICAL SUMMARY**

Mixed methods

## **APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?**

No

## **ETHICS**

Project already has ethics approval

## **ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT**

Requires experience with SPSS and a current drivers license and the ability to travel within Perth to collect data.

## **NUMBER OF STUDENTS FOR PROJECT**

1

## PROJECT TITLE

Qualitative evaluation of Milk Man with rural Dads

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Professor Sharyn Burns - [s.burns@curtin.edu.au](mailto:s.burns@curtin.edu.au)

Secondary Supervisor: Dr Becky White - [becky.white@curtin.edu.au](mailto:becky.white@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Breastfeeding is an important health issue that has significant, well-evidenced health benefits for mothers and infants. Fathers are important breastfeeding supports for their partners and new and innovative methods are needed to reach fathers. The current project is being run in collaboration with the WACHS and aims to build on our earlier research by adapting and releasing the Milk Man app to fathers in regional, rural and remote Western Australia. We will evaluate the usability and impact of the app on breastfeeding among families in these communities and the potential for scalability on a national level. While Milk Man has a breastfeeding focus, the app contains information about a range of early parenting topics including mental health, social support and becoming a new father. We are aiming to have the first person using the app by mid-October 2021.

The Milk Man app uses gamification, social connectivity and push notifications to engage dads in conversation and information about early parenting and breastfeeding. The app was trialled with over 1426 couples in a large RCT in Perth which ended in 2016.

As part of the broader evaluation, a select group of participants (high and low end app users) will be emailed, and invited to participate in a telephone interview to explore their use of the Milk Man app. Interviews will run for up to an hour and aim to understand participant engagement with the app, the usability and acceptability of the app, the effectiveness of each of the app engagement strategies and the usefulness of the content. Interviews will be transcribed and thematically analysed using NVivo. The aim will be to understand what impacts on both high and low levels of engagement of the app.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Scott JA, Burns SK, Hauck YL, Giglia RC, Jorgensen AM, White BK, Martin A, Robinson S, Dhaliwal SS, Binns CW, Maycock BR. 2021. Impact of a Face-To-Face Versus Smartphone App Versus Combined Breastfeeding Intervention Targeting Fathers: Randomized Controlled Trial, JMIR Pediatr Parent 2021;4(2):e24579 doi: 10.2196/24579 PMID: 33843604 PMCID: 8076985

Also see: <http://pifistudy.net.au/> for more details about Milkman and more publications

## GENERAL METHODOLOGICAL SUMMARY

This qualitative study, is part of a broader evaluation, will include the facilitation and analysis of interviews with fathers (approx.. 20).

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

No

## ETHICS

Project already has ethics approval

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Useful to have knowledge of NVIVO (but not essential - we provide opportunities for training).

Confidence to recruit and interview participants.

## NUMBER OF STUDENTS FOR PROJECT

1



## PROJECT TITLE

Understanding perceptions of sugary drinks among culturally and linguistically diverse Australian parents and children

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Dr Zenobia Talati - [zenobia.talati@curtin.edu.au](mailto:zenobia.talati@curtin.edu.au)

Secondary Supervisor: Professor Sharyn Burns - [s.burns@curtin.edu.au](mailto:s.burns@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Over half of Australian children exceed the World Health Organisation's recommended level of sugar intake. Excess sugar intake is a significant but modifiable risk factor for weight gain in Australian children. Sugar-sweetened beverages (SSBs) account for a significant proportion of sugar in the diet of Australian children. Children from culturally and linguistically diverse (CALD) backgrounds have poorer diets and exhibit higher rates of SSB consumption which are linked to higher rates of overweight and obesity compared to non-CALD children.

The Australian marketplace now contains an abundance of sugary drinks that are marketed as 'better-for-you' (e.g. fruit drink, flavoured water, iced tea, coconut water). Fruit drinks (containing added sugar) are consumed in greater quantities by CALD children than non-CALD children. Furthermore, parents (regardless of cultural background) often have difficulty distinguishing between 100% juice (high in naturally occurring sugars), fruit concentrate and fruit drinks. Thus it is important to study CALD children's and parent's perceptions of these drinks and their attitudes towards consuming them. It is important to ensure that CALD families understand the health risks of consuming drinks that are marketed as healthy but contain high levels of sugar and calories.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Scott, B., Bolton, K. A., Strugnell, C., Allender, S., & Marks, J. (2019). Weight status and obesity-related dietary behaviours among culturally and linguistically diverse (CALD) children in Victoria, Australia. *BMC Pediatrics*, 19(1), 511. <https://doi.org/10.1186/s12887-019-1845-4>

## GENERAL METHODOLOGICAL SUMMARY

Interviews with qualitative analysis

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

Yes

## ETHICS

Ethics approval required

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Nil

## NUMBER OF STUDENTS FOR PROJECT

1







# BIOTECHNOLOGY PROJECTS

## PROJECT TITLE

Organ-on-a-chip: the design of an artificial organ using cutting-edge bio-nanotechnologies and bio-printing platforms

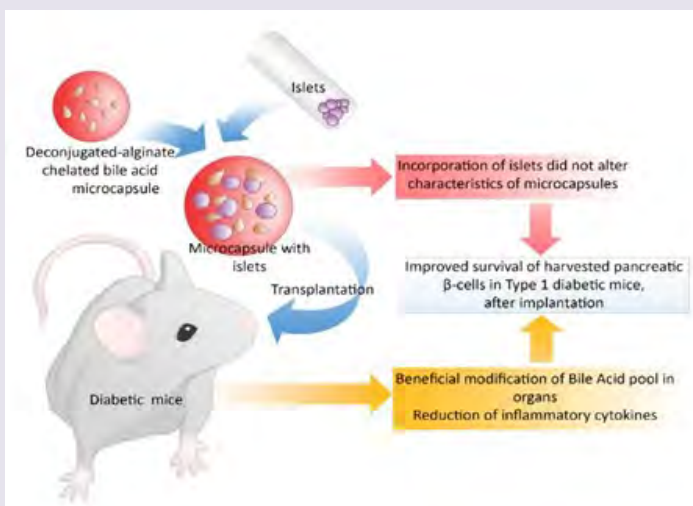
## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: A/Professor Hani Al-Salami - [hani.al-salami@curtin.edu.au](mailto:hani.al-salami@curtin.edu.au)

Secondary Supervisor: A/Professor Ryu Takechi - [R.Takechi@curtin.edu.au](mailto:R.Takechi@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Multiple chronic disorders remain untreated despite best effort and ongoing research to design new therapies. A chronic disease that remains untreated, and a contributing factor to many disorders including hearing impairment, is diabetes. Diabetes is an epidemic and its incidence is rising by 2% every year in Australia and the world. It is costing the Australian government \$10 billion a year with one Australian being diagnosed with diabetes every 5 minutes. There are three types of diabetes mellitus, Type-1 diabetes (T1D), Type-2 diabetes (T2D) and Gestational diabetes (GD). Current antidiabetic drugs remain ineffective in treating the disease and its complications as well as in improving long-term prognosis. Insulin is a widely used antidiabetic drug, and currently being prescribed for all T1D patients, more than third T2D patients and the majority of GD patients. Insulin is administered by injections and since its discovery in 1921, its route of administration has remained largely unchanged. Due to its current way of administration, insulin has many side effects and limitations, which compromise its antidiabetic effects. Ways to revolutionise insulin delivery include either designing a device that measures glucose continuously and pumps insulin from a reservoir carried out by patients, or by creating a healthy pancreas that can be transplanted and replaces currently damaged pancreas (known as islet transplantation). Over the last a few years, cell encapsulation and bio-printing have become new scientific adventures and are gaining significant interests as new technologies to revolutionise islet (and organ) transplantation. In 2014, Dr Al-Salami was the first in the world to introduce a new concept of bile acid incorporation via bio-nanotechnologies to enable organ creation and islet transplantation. This project builds on current findings and will focus on carrying out specific sets of experiments appropriate for innovative and timely completion of an Honour degree.



## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Armin Mooranian, Corina Mihaela Ionescu, Susbin Raj Wagle, Bozica Kovacevic, Daniel Walker, Melissa Jones, Jacqueline Chester, Thomas Foster, Edan Johnston, Momir Mikov, Marcus D. Atlas, Hani Al-Salami. Probuco1 Pharmacological and Bio-Nanotechnological Effects on Surgically Transplanted Graft Due to Powerful Anti-Inflammatory, Anti-Fibrotic and Potential Bile Acid Modulatory Actions. *Pharmaceutics*, 13, 8, 10.3390/pharmaceutics13081304

## **GENERAL METHODOLOGICAL SUMMARY**

Basic lab skills can be taught during induction and all needed training will be provided during the first two months.

## **APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?**

Yes

## **ETHICS**

Does not require ethics approval (does not involve humans or animals)

## **ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT**

Highly motivated to learn lab-based medically oriented projects.

## **NUMBER OF STUDENTS FOR PROJECT**

1 or 2

## PROJECT TITLE

Transforming current drug uptake in patients, via using advanced bio-nanotechnologies.

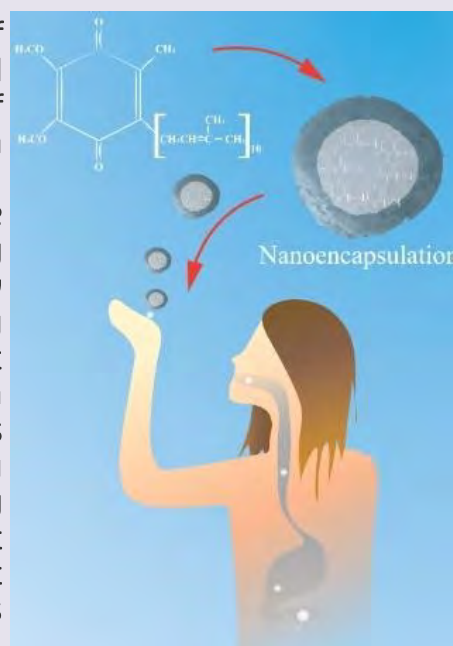
## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: A/Professor Hani Al-Salami - [hani.al-salami@curtin.edu.au](mailto:hani.al-salami@curtin.edu.au)

Secondary Supervisor: A/Professor Ryu Takechi - [R.Takechi@curtin.edu.au](mailto:R.Takechi@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Since early 1900s, oral drugs have been formulated in tablets or capsules to optimise drugs' stability and to control drugs' release (either immediate release for fast effects or slow/controlled release for extended effects). Oral drug absorption occurs when a drug (in a tablet or a capsule) is swallowed and the tablet/capsule breaks down and drug is released in the upper part of the gut, where it moves down until it reaches a specific segment of the lower gut where the drug permeates the gut-membrane into the blood (i.e. absorbed). Different drugs are maximally absorbed from different segments of the gut, with antidiabetic drugs being absorbed mostly from the lower part of the small intestine. Diabetes mellitus is one of the most common chronic diseases in children, occurring more frequently than cancer, cystic fibrosis, multiple sclerosis and muscular dystrophy. Most antidiabetic drugs are not completely absorbed into the body after oral administration in tablets/capsules due to either<sup>1</sup> being degraded during their gut-passage and before reaching the specific gut-segment with maximum drug absorbability, or <sup>2</sup> once reaching the specific gut-segment with best absorbability, fail to permeate gut-membrane and reach blood/systemic circulation. Accordingly, current tablets/capsules carrying antidiabetic drugs are often loaded with far more drug than what patients actually need, in order to compensate and accommodate for two things: <sup>1</sup> poor gut-targeting: inefficient delivery of the tablet/capsule to the drug, to the best gut-segment where most of the drug will be absorbed, and <sup>2</sup> poor gut tissue-permeation: insufficient amount of drug permeating through the gut membrane and reaching blood. Due to both points, current tablets and capsules cause many side effects and damage of healthy tissues. Thus, to date and despite new and sophisticated pharmaceutical formulations, lack of tissue-specificity remains a serious health concern and hence, for every dollar spent on acquiring drugs, another dollar is spent fixing/treating side effects. In order to revolutionise current oral drug administration in diabetes treatment, the new delivery system needs to possess: <sup>1</sup> gut-targeting property, so the drug is released with pin-point accuracy in the specific gut-segment with maximum drug absorbability for optimum effects and safety profile, and <sup>2</sup> the ability to enhance drug gut-membrane permeation and force drug molecules through the cell membrane via direct effect on cellular protein transporters. This project aims at examining new ways to improve how drugs work using nanotechnology.



## **EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC**

Armin Mooranian, Nassim Zamani, Momir Mikov, Svetlana Goločorbin-Kon, Goran Stojanovic, Frank Arfuso, Bozica Kovacevic, Hani Al-Salami. A second-generation micro/nano capsules of an endogenous primary un-metabolised bile acid, stabilized by Eudragit-alginate complex with antioxidant compounds. Saudi Pharmaceutical Journal, doi.org/10.1016/j.jsps.2019.11.017

## **GENERAL METHODOLOGICAL SUMMARY**

Basic lab skills can be taught during induction and all needed training will be provided during the first two months.

## **APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?**

Yes

## **ETHICS**

Does not require ethics approval (does not involve humans or animals)

## **ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT**

Highly motivated to learn lab-based medically oriented projects.

## **NUMBER OF STUDENTS FOR PROJECT**

1 or 2

## PROJECT TITLE

Creation of new therapies for hearing-impaired patients using nanotechnologies with pin-point accuracy: advanced chemical drug analysis using cutting-edge analytical methods for medical applications

## SUPERVISOR/S & CONTACT DETAILS

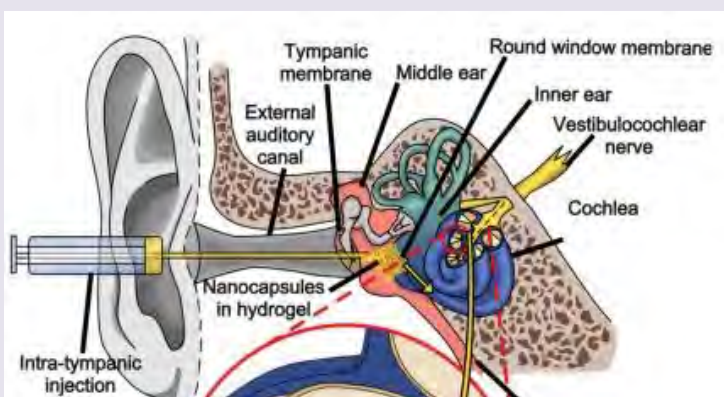
Primary Supervisor: A/Professor Hani Al-Salami - [hani.al-salami@curtin.edu.au](mailto:hani.al-salami@curtin.edu.au)

Secondary Supervisor: A/Professor Ryu Takechi - [R.Takechi@curtin.edu.au](mailto:R.Takechi@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Hearing disorders are affecting significant number of people in Australia and worldwide with the prevalence rising at an alarming rate. Steroids are widely prescribed to treat a range of Hearing and Balance Disorders, such as: Autoimmune Inner Ear Disease, Sudden Sensorineural Hearing Loss, Acoustic Trauma, Meniere's disease, Labyrinthitis and Cochlear Implantation with residual hearing. Steroids can either be delivered systemically or via injection through the eardrum. However, the efficacy and safety profiles of current therapy lacks robustness and consistency and varies greatly between individuals, and this is generally due to the poor permeation and transport of steroids into fluids, compartments, and tissues in the inner ear. Recent research is aimed at developing techniques that enhance the transfer of steroids into the inner ear, and to assess the impact of these techniques the level of steroids in the inner ear fluids or tissues must be measured. The inner ear is very small, and poses a limit on the accuracy of drug level measurement, particularly in the smaller compartments of the inner ear, which are nonetheless vital to the inner ears function.

To date, none of recently developed techniques for inner-ear steroids-targeted delivery, or robust steroids' analytical methods have proved that effective, and hence, this project explores new and highly innovative ways to use nano and micro technologies to target-deliver steroids and enable development of unique HPLC/LCMS analytical systems for measuring steroid permeation and delivery (within the available time frame for Honours). Accordingly, in this project, we will develop new delivery matrices and optimise HPLC/LCMS methods for the detection of the commonly used steroid, dexamethasone, in inner ear, and demonstrate the practicality of measuring dexamethasone in the smallest of tissue spaces in the inner ear.



## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Armin Mooranian, Nassim Zamani, Momir Mikov, Svetlana Golocorbin-Kon, Goran Stojanovic, Frank Arfuso, Bozica Kovacevic, Hani Al-Salami. Bio Micro-Nano Technologies of Antioxidants Optimised Their Pharmacological and Cellular Effects, ex vivo, in Pancreatic  $\beta$ -Cells. Nanotechnology, Science and Applications, doi.org/10.2147/NSA.S212323

## **GENERAL METHODOLOGICAL SUMMARY**

Basic lab skills can be taught during induction and all needed training will be provided during the first two months.

## **APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?**

Yes

## **ETHICS**

Does not require ethics approval (does not involve humans or animals)

## **ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT**

Highly motivated to learn lab-based medically oriented projects.

## **NUMBER OF STUDENTS FOR PROJECT**

1 or 2







HEALTH  
ECONOMICS  
&  
DATA ANALYTICS  
PROJECTS

## PROJECT TITLE

Utilisation of virtual healthcare during COVID-19 Pandemic in WA: Trends and consumers perspective of the enabling factors?

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Dr Judith Daire - [Judith.Daire@curtin.edu.au](mailto:Judith.Daire@curtin.edu.au)

Secondary Supervisor: Dr Mohamed Estai - [mohamed.estai@csiro.au](mailto:mohamed.estai@csiro.au)

## PROJECT BACKGROUND & OBJECTIVES

COVID-19 has seen a significant change in the experience of receiving and providing healthcare by GPs and patients, and thus, sharing stories of change and how change has impacted patients' experiences and outcomes is critical. To meet the growing needs of healthcare during pandemics, it is critical to examine how consumers and users perceive telehealth. This can play a major role in the long-term acceptance and successful implementation of telehealth, and more importantly, in addressing some of the health disparities in rural Australia. This study aims to explore barriers and enablers to virtual healthcare delivery as viewed by health providers and consumers living in urban and regional WA. Findings can be used to inform policymakers about the current challenges impacting virtual healthcare delivery and its continuity beyond the pandemic and guide changing restrictive regulations for telehealth deployment.

The aim of the study is to identify factors impacting the delivery of virtual healthcare and its continuity beyond the pandemic.

Objective:

1. To analyse the trends in utilization of virtual healthcare services in WA
2. To explore Australian consumers' experiences with virtual healthcare during the pandemic.
3. To identify factors impacting the delivery of virtual healthcare and its continuity beyond the pandemic.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Taylor Alan, Caffery Liam J., Gesesew Hailay Abrha, , et al (2021) How Australian Health Care Services Adapted to Telehealth During the COVID-19 Pandemic: A Survey of Telehealth Professionals. *Frontiers in Public Health* (9): 121 <https://www.frontiersin.org/articles/10.3389/fpubh.2021.648009/full>

## GENERAL METHODOLOGICAL SUMMARY

Mixed methods

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

No

## ETHICS

Ethics approval required

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Basic skills in Excel and SPSS recommended but not required.

## NUMBER OF STUDENTS FOR PROJECT

1

## PROJECT TITLE

Utilisation of virtual healthcare during COVID-19 Pandemic in WA: Trends and providers perspective of the enabling factors?

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Dr Judith Daire - [Judith.Daire@curtin.edu.au](mailto:Judith.Daire@curtin.edu.au)

Secondary Supervisor: Dr Mohamed Estai - [mohamed.estai@csiro.au](mailto:mohamed.estai@csiro.au)

## PROJECT BACKGROUND & OBJECTIVES

COVID-19 has seen a significant change in the experience of receiving and providing healthcare by GPs and patients, and thus, sharing stories of change and how change has impacted patients' experiences and outcomes is critical. To meet the growing needs of healthcare during pandemics, it is critical to examine how consumers and users perceive telehealth. This can play a major role in the long-term acceptance and successful implementation of telehealth, and more importantly, in addressing some of the health disparities in rural Australia. This study aims to explore barriers and enablers to virtual healthcare delivery as viewed by health providers and consumers living in urban and regional WA. Findings can be used to inform policymakers about the current challenges impacting virtual healthcare delivery and its continuity beyond the pandemic and guide changing restrictive regulations for telehealth deployment.

The aim of the study is to identify factors impacting the delivery of virtual healthcare and its continuity beyond the pandemic.

Objective:

1. To analyse the trends in utilization of virtual healthcare services in WA
2. To explore Australian providers' experiences with virtual healthcare during the pandemic.
3. To identify factors impacting the delivery of virtual healthcare and its continuity beyond the pandemic.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Taylor Alan, Caffery Liam J., Gesesew Hailay Abrha, , et al (2021) How Australian Health Care Services Adapted to Telehealth During the COVID-19 Pandemic: A Survey of Telehealth Professionals. *Frontiers in Public Health* (9): 121 <https://www.frontiersin.org/articles/10.3389/fpubh.2021.648009/full>

## GENERAL METHODOLOGICAL SUMMARY

Mixed methods

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

No

## ETHICS

Ethics approval required

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Basic skills in Excel and SPSS recommended but not required.

## NUMBER OF STUDENTS FOR PROJECT

1

## PROJECT TITLE

Patients' opinion on taking blood pressure lowering drug treatment at night

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Dr Chau Ho - [chau.ho@curtin.edu.au](mailto:chau.ho@curtin.edu.au)

Secondary Supervisors: Prof Christopher Reid - [christopher.reid@curtin.edu.au](mailto:christopher.reid@curtin.edu.au),

Dr Jun Chih - [h.chih@curtin.edu.au](mailto:h.chih@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

A healthy individual has a decrease of approximately 10-20% in blood pressure (BP) at night. People with a fall of less than 10% in BP at night time are called non-dippers. More than 40% of persons with elevated BP are so afflicted and have an increased risk of major CVD events and deaths (Salles et al. 2016, Kario and Shimada 2004). Changing the time of taking BP-lowering medication from morning to night-time with the aim to reduce night-time BP and to restore a normal dipping pattern may enhance both the prevention of cardiovascular disease and the progression of diabetic nephropathy. This study aims to examine patients' opinion on taking blood pressure lowering drug treatment at night and their interest in participating an online study without face-to-face follow-up visits.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Salles GF, Reboldi G, Fagard RH, et al. Prognostic effect of the nocturnal blood pressure fall in hypertensive patients: the ambulatory blood pressure collaboration in patients with hypertension (ABC-H) meta-analysis. *Hypertension*. 2016;67(4):693-700.

Kario K, Shimada K. Risers and extreme-dippers of nocturnal blood pressure in hypertension: antihypertensive strategy for nocturnal blood pressure. *Clin Exp Hypertens*. 2004;26(2):177-189

Hermida RC, Ayala DE, Mojón A, Fernández JR. Influence of circadian time of hypertension treatment on cardiovascular risk: results of the MAPEC study. *Chronobiology international*. 2010;27(8):1629-1651.

Hermida RC, Crespo JJ, Domínguez-Sardiña M, et al. Bedtime hypertension treatment improves cardiovascular risk reduction: the Hygia Chronotherapy Trial. *European heart journal*. 2019

Ho CL, Chowdhury EK, Doust J, Nelson MR, Reid CM. The effect of taking blood pressure lowering medication at night on cardiovascular disease risk. A systematic review. *Journal of Human Hypertension*. 2021:1-7.

## GENERAL METHODOLOGICAL SUMMARY

Quantitative study

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

Yes

## ETHICS

Ethics approval required

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Literature searching, database management, statistical analysis using Stata, writing manuscript for peer reviewed journal.

## NUMBER OF STUDENTS FOR PROJECT

1

## PROJECT TITLE

Continuity of care in patients with physical and mental illness

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Professor Rachael Moorin - [r.moorin@curtin.edu.au](mailto:r.moorin@curtin.edu.au)

Secondary Supervisor: Dr Marlene Kritz - [marlene.kritz@curtin.edu.au](mailto:marlene.kritz@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

An existing project led by the primary supervisor has examined the associations between continuity of care in general practice (i.e., whether patients consistently visit the same GP or switch between GPs) and hospitalisation outcomes. Most research in this area focuses on cohorts with chronic, physical illnesses. There is little evidence regarding these associations among populations with mental illness. Furthermore, some experts in this area have suggested that definitions of continuity of care developed for populations with chronic, physical illnesses do not translate well to the area of mental health.

The objectives of this project would be to:

1. Compare the definitions and measures of continuity of care applied to populations with mental vs physical illness in the existing literature
2. Examine which factors predict continuity of care among patients with mental illness in comparison to patients with physical illness
3. Assess the relationship between continuity of care and hospital use among patients with mental illness

There is flexibility in the scope and objectives of the project, depending on the student's areas of interest.

Data for this project are already held, although a substantial part of the project will involve preparing these data for analysis.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Barker et al 2017. Association between continuity of care in general practice and hospital admissions for ambulatory care sensitive conditions: cross sectional study of routinely collected, person level data. *BMJ* 356:j84. <https://doi.org/10.1136/bmj.j84>

## GENERAL METHODOLOGICAL SUMMARY

Quantitative

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

Yes

## ETHICS

Project already has ethics approval

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

A high level of experience with SPSS or other statistical software is essential.

## NUMBER OF STUDENTS FOR PROJECT

1

## PROJECT TITLE

Impact of the COVID-19 pandemic on use of hospitals and Emergency departments for non-COVID conditions

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Professor Rachael Moorin - [r.moorin@curtin.edu.au](mailto:r.moorin@curtin.edu.au)

Secondary Supervisor: Dr Marlene Kritz - [marlene.kritz@curtin.edu.au](mailto:marlene.kritz@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

This is part of a larger project being led by the primary supervisor. The larger project aims to understand how the COVID-19 pandemic and associated lockdown measures introduced in March 2020 may have impacted on presentations to emergency departments and hospitalisation rates in Western Australia. The larger project will involve analysis of these questions in relation to a range of physical illnesses including respiratory conditions, cardiovascular conditions, cancer and others. There is scope for a student project to examine how emergency department and hospital use may have changed through this period for other reasons, such as use of these services for mental illness, for injury or illness resulting from external causes, for reasons relating to assault or self-harm and so on.

Literature in this topic area is rapidly evolving; there is scope for the area of focus and specific objectives to be developed further according to the interests of the student and the outcomes of the literature review stage.

Data are already held though a major part of the Honours project will be preparing the existing data for analysis of the project objectives.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Birkmeyer et al 2020. The Impact of the COVID-19 Pandemic on Hospital Admissions in the United States. *Health Affairs* 39:11(2010-2017). <https://doi.org/10.1377/hlthaff.2020.00980>

## GENERAL METHODOLOGICAL SUMMARY

Quantitative

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

Yes

## ETHICS

Project already has ethics approval

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

A high level of experience with SPSS or other statistical software is essential.

## NUMBER OF STUDENTS FOR PROJECT

1

## PROJECT TITLE

Exploring the use of CT and its impacts on hospitalisations and mortality in elderly patients presenting to the emergency departments in Western Australia

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Professor Rachael Moorin - [r.moorin@curtin.edu.au](mailto:r.moorin@curtin.edu.au)

Secondary Supervisor: Dr Ninh Ha - [thi.ha@curtin.edu.au](mailto:thi.ha@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

The ability to accurately and effectively determine diagnosis and treatment plan for elderly patients presenting to emergency departments (ED) is important to optimise health care resource use and improve patients' health outcomes. With dramatic growth in the elderly population, advanced diagnostic imaging such as computed tomography (CT) has been in the spotlight. While CT has been increasingly used in the elderly population, little is known about its impact on hospitalisation and health outcomes.

This study will explore the change in CT utilisation and how the change in CT use impacts on the rate of hospital admissions and mortality in elderly patients presenting to tertiary EDs over the period from 2003 to 2015 using linked administrative data in Western Australia.

In addition to providing knowledge for this particular setting, a major aim of this study is to develop methodology useful for evaluating the growth of health services utilisation more generally.

This project will provide a great opportunity for students to develop skills in manipulating, analysing as well as publishing research using advanced analytic methods and statistical softwares such as STATA and R in large linked administrative data.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Maxwell, S., Ha, N. T., Bulsara, M. K., Doust, J., Mcrobbie, D., O'Leary, P., Slavotinek, J., & Moorin, R. (2021). Increasing use of CT requested by emergency department physicians in tertiary hospitals in Western Australia 2003-2015: an analysis of linked administrative data. *BMJ open*, 11(3), e043315. <https://doi.org/10.1136/bmjopen-2020-043315>

## GENERAL METHODOLOGICAL SUMMARY

This is an observational cross-sectional study over study period from 2003 to 2015 using multivariate regression models.

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

No

## ETHICS

Project already has ethics approval

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Literature searching; critical appraisal of the literature; basic skills in data manipulation and management of data, experience with STATA, SPSS or R is an advantage; writing and publishing research.

## NUMBER OF STUDENTS FOR PROJECT

1 - 2

## PROJECT TITLE

Exploring trends in CT utilisation and its impact on management of acute pain in the tertiary emergency departments in Western Australia

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Professor Rachael Moorin - [r.moorin@curtin.edu.au](mailto:r.moorin@curtin.edu.au)

Secondary Supervisor: Dr Ninh Ha - [thi.ha@curtin.edu.au](mailto:thi.ha@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Computed tomography (CT) scanning is a relatively high radiation dose diagnostic imaging procedure. While CT has many clinical benefits its increasing use is a policy and public health concern, because it accounts for both significant and increasing health care costs and a substantial proportion of the population's radiation exposure. Ionising radiation is a modifiable risk factor for cancer. Health care technologies, such as CT account for a large proportion of the health care budget and concerns have been raising regarding the continued affordability of health care due to the substantial increase in use of these technologies. Recently attention has been given to identifying and preventing low value care (i.e. care that provides no net benefit in specific clinical scenarios) in order to improve quality of care and reduce unnecessary costs. It has been widely accepted that increase utilisation and reduction in diagnostic yield is marker of over-use and potentially indicate low-value care. Technological advances in CT have extended the use of CT scanning such that there have been substantial changes to the volume of examinations, profile of patients (ie age and sex) and clinical indications (type of condition) for which it is used. This has substantially increased health care costs and both individual and population based radiation dose, and thus risks, associated with the procedure. While certain uses of CT have been identified as "low value" (eg CT for chronic low back pain) greater understanding of the trends and underlying factors behind the increased use of CT is needed in order to determine the extent of low value care.

This study will explore trend in CT utilisation and how the change in CT utilisation impact on hospital admission, hospital length of stay and mortality among patients presenting to tertiary ED with acute pain using linked administrative data in Western Australia from 2003 to 2015.

In addition to providing knowledge for this particular setting, a major aim of this study is to develop methodology useful for evaluating the growth of health services utilisation more generally.

This project will provide a great opportunity for students to develop skills in manipulating, analysing as well as publishing research using advanced analytic methods and statistical softwares such as STATA and R in large linked administrative data.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Maxwell, S., Ha, N. T., Bulsara, M. K., Doust, J., Mcrobbie, D., O'Leary, P., Slavotinek, J., & Moorin, R. (2021). Increasing use of CT requested by emergency department physicians in tertiary hospitals in Western Australia 2003-2015: an analysis of linked administrative data. *BMJ open*, 11(3), e043315. <https://doi.org/10.1136/bmjopen-2020-043315>

## GENERAL METHODOLOGICAL SUMMARY

This is an observational cross-sectional study over study period from 2003 to 2015 using multivariate regression models.



## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

No

## ETHICS

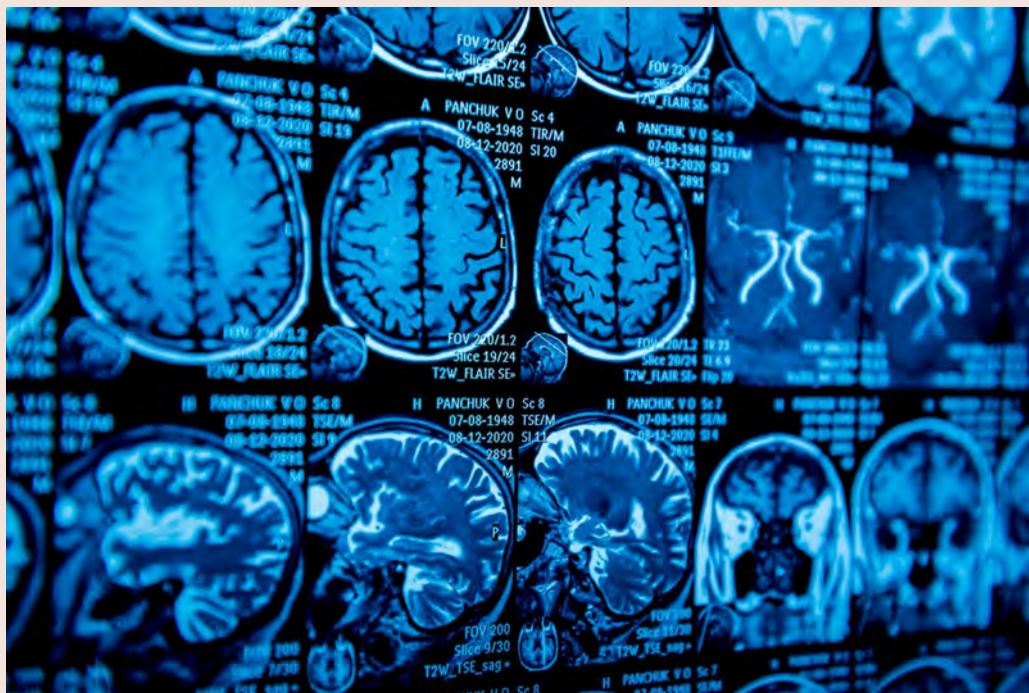
Project already has ethics approval

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

- Literature searching
- Critical appraisal of the literature
- Basic skills in data manipulation and management of data, experience with STATA, SPSS or R is advantage
- Writing and publishing research

## NUMBER OF STUDENTS FOR PROJECT

1 - 2



## PROJECT TITLE

Trends in the use of colonoscopy following surgical resection of colorectal cancer in WA: A linked data analysis

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Professor Rachael Moorin - [r.moorin@curtin.edu.au](mailto:r.moorin@curtin.edu.au)

Secondary Supervisor: Dr Cameron Wright - [cameron.wright@curtin.edu.au](mailto:cameron.wright@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Cancer is a leading cause of morbidity and mortality globally, with changing epidemiology driven by public awareness, structured screening programs for some cancer types, diagnostic and treatment methods and post-diagnosis survivorship. Colorectal cancer is expected to be the fourth most commonly diagnosed cancer in Australia in 2020. Analysing changing trends at a population-level provides a high-level insight into surveillance colonoscopy following a primary colorectal cancer diagnosis and management. Following surgical resection for colorectal cancer, NHMRC guidelines provide clinicians with a structured approach to surveillance colonoscopy, to detect metachronous colorectal cancer (i.e. colorectal cancer occurring > 6 months post-resection). This project will use population-level cancer registry, hospital and mortality data to assess the use of colonoscopy following diagnosis and surgical management of colorectal cancer. This dataset contains information on all cancer registrations in Western Australia, linked with private and public hospitalisations and death registrations. This will provide the successful student with an opportunity to develop their knowledge of cancer in Western Australia, data analysis skills and yield a publishable piece of work within the allotted time constraints. This project will be supervised by Professor Rachael Moorin and Dr Cameron Wright, both experienced in the analysis of linked cancer registry data, with collaboration by Dr Hooi Ee, a gastroenterologist from Sir Charles Gairdner Hospital.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Cone MM, Beck DE, Hicks TE, Rea JD, Whitlow CB, Vargas HD, Margolin DA. Timing of colonoscopy after resection for colorectal cancer: are we looking too soon? *Dis Colon Rectum*. 2013 Nov;56(11):1233-6. doi: 10.1097/DCR.0b013e3182a228d1. PMID: 24104997

## GENERAL METHODOLOGICAL SUMMARY

This will be a quantitative analysis of whole-of-population linked administrative data currently held by the research team.

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

No

## ETHICS

Project already has ethics approval

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Ideally an interest in cancer and cancer epidemiology, experience with statistical analysis using Stata (preferred) or SPSS.

## NUMBER OF STUDENTS FOR PROJECT

1

## PROJECT TITLE

Predicting quality of life in a middle-income nation

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: A/Professor Richard Norman- [richard.norman@curtin.edu.au](mailto:richard.norman@curtin.edu.au)

Secondary Supervisor: Dr Jun Chih - [h.chih@curtin.edu.au](mailto:h.chih@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Population level collection of health-related quality of life (HRQoL) data is common in high-income countries. However, it is less common elsewhere, meaning policymakers in those settings do not have valuable information to inform government policy across health and other sectors. The South East Asia Community Observatory (SEACO) is an unusual and important research platform in population health and well-being in regional Malaysia, a high middle-income country.

Significant data have been collected including information about HRQoL, but also about living conditions, employment, income, and education. There are two leading HRQoL instruments in SEACO, namely the EQ-5D and the WHOQOL.

This project will:

- (1) explore the predictors of HRQoL across this Malaysian population, thus helping decision makers to target services to those in greatest need
- (2) determine the degree to which the two HRQoL instruments are measuring the same underlying concept of health

While the data are already collected, the project will require ethics approval for the use of the data to conduct the analysis.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Norman R, Church J, Van den Berg B, Goodall S. (2013) Australian health-related quality of life population norms derived from the SF-6D. Australian and New Zealand Journal of Public Health 37(1):17-23

## GENERAL METHODOLOGICAL SUMMARY

Quantitative

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

No

## ETHICS

Ethics approval required

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Understanding of regression analysis is necessary

## NUMBER OF STUDENTS FOR PROJECT

2

## PROJECT TITLE

*Observing the unobserved: the causes and consequences of fertility decisions*

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Professor Gavin Pereira - [gavin.f.pereira@curtin.edu.au](mailto:gavin.f.pereira@curtin.edu.au)

Secondary Supervisor: Dr Gizachew Tessema - [gizachew.tessema@curtin.edu.au](mailto:gizachew.tessema@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

We still do not know the causes of stillbirth, preterm birth and many other adverse birth outcomes. One reason for this is because our current understanding is based on knowledge gained retrospectively from birth and pregnancy cohorts, which exclude offspring that are not observed. These offspring are not observed because they are the products of conception who are lost early in pregnancy, such as early miscarriage. They also include "virtual" offspring who are not observed because sub-fertility prevented conception, or because of a conscious decision not to have children.

This primary aim of this honours project involves analysis of data that has already been collected to examine the effects of fertility on birth outcomes. A secondary aim of the project is to provide the foundation for a PhD project by developing a questionnaire to identify the determinants of fertility decisions and fertility outcomes and their subsequent impact on birth outcomes.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Milica Ognjenovic, Gavin Pereira, Gizachew Tessema. Determinants of inter-pregnancy intervals in high-income countries: a systematic review. PROSPERO 2020 CRD42020176311 Available from: [https://www.crd.york.ac.uk/prospero/display\\_record.php?ID=CRD42020176311](https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020176311)

Petraglia F, Serour GI, Chapron C. The changing prevalence of infertility. International Journal of Gynecology & Obstetrics. 2013 Dec;123:S4-8.

## GENERAL METHODOLOGICAL SUMMARY

This is a quantitative research project involving analysis of existing data. The project involves development of a questionnaire.

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

No

## ETHICS

Project already has ethics approval

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Nil

## NUMBER OF STUDENTS FOR PROJECT

1

## PROJECT TITLE

Healthcare workers' preferred mindfulness program

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Dr Jun Chih - [h.chih@curtin.edu.au](mailto:h.chih@curtin.edu.au)

Secondary Supervisor: A/Professor Richard Norman - [richard.norman@curtin.edu.au](mailto:richard.norman@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Mindfulness activities have been shown to be effective in managing anxiety, depression and mindful eating, to name a few. The programs are available face-to-face or online in a structured manner delivered by certified practitioners with focus on different contents (and duration) to suit needs of the attendees. There are also daily practice activities available via self-paced app or recordings, in the form of quiet meditation or body scan, mindful movement, breathing exercises, to name a few. The cost of this variety of programs vary. Meanwhile, preference and long-term uptake of the various mindfulness programs and activities are not widely known. The student will work with the consumer and community involvement representative (Ben Horgan) to recruit healthcare workers who are interested in and/or currently practising mindfulness, collect information about their preferred approach (including the reasons of their preference), then develop a discrete choice experiment that can inform the mindfulness practitioners and the research community of a preferable design. The student will also analyse the data and disseminate findings under the supervision of academic staff.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Shauna Shapiro, Sonica Thakur, Sarah de Sousa, Mindfulness for Health Care Professionals and Therapists in Training, In Practical Resources for the Mental Health Professional, Mindfulness-Based Treatment Approaches (Second Edition), Academic Press 2014, <https://doi.org/10.1016/B978-0-12-416031-6.00014-1>.

## GENERAL METHODOLOGICAL SUMMARY

Mixed methods

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

Yes

## ETHICS

Ethics approval required

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Experience or interest in using analytical software (e.g. Stata, NVivo).

## NUMBER OF STUDENTS FOR PROJECT

1

## PROJECT TITLE

Prevalence of undetected atrial fibrillation in the community (PACIFIC study)

## SUPERVISOR/S & CONTACT DETAILS

Primary Supervisor: Dr Jacquita Affandi - [jacquita.affandi@curtin.edu.au](mailto:jacquita.affandi@curtin.edu.au)

Secondary Supervisor: Dr Chau Ho - [chau.ho@curtin.edu.au](mailto:chau.ho@curtin.edu.au)

## PROJECT BACKGROUND & OBJECTIVES

Atrial fibrillation (AF) is most commonly associated arrhythmia with a high risk of embolic stroke, affecting almost 6% of people over the age of 65 years. More than 45,000 hospitalisations are directly related to AF, impacting annual health system costs in Australia of \$874 million. Within the general population, many people are unaware of their underlying AF until they are admitted to the hospital presenting with a stroke or transient ischaemic attack. The prevalence of undetected AF in the Western Australian community and the association with other cardiovascular risk factors is unclear. Early detection and management of atrial fibrillation is essential to prevent cardiovascular complications at a later stage. The primary aim of this study is to determine the prevalence of undetected/undiagnosed AF in men and women over the age of 55 years. Participants will be invited to present for an electrocardiogram (ECG), blood and urine point of care test, mini mental health questionnaires. Participants will also be given a handheld single lead ECG device to self-collect 2 readings each day for 2 weeks. This project is part of a larger screening project.

## EXAMPLE PAPER THAT REFLECTS THE PROJECT / TOPIC

Lancet. 2021 Aug 27;S0140-6736(21)01785-2. doi: 10.1016/S0140-6736(21)01785-2. Online ahead of print. High-intensity atrial fibrillation screening to prevent stroke Ben Freedman 1, Nicole Lowres 2

## GENERAL METHODOLOGICAL SUMMARY

Mixed methods

## APPROPRIATE FOR A PSYCHOLOGY HONOURS STUDENT?

No

## ETHICS

Project already has ethics approval

## ESSENTIAL SKILLS / PRE-REQUISITE / REQUIREMENTS OF STUDENT

Statistical experience, patient-facing experience, willingness to learn new skills.

## NUMBER OF STUDENTS FOR PROJECT

1



## Contact

**Associate Professor Richard Norman**

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