



iPREP_{WA}
Industry and PhD
Research Engagement Program



**Perth
Biodesign**

**iPREP WA
PRESENTATION
BROCHURE
ROUND 3, 2020**

The team acknowledges the Traditional Custodians of the lands on which we meet and work, the Whadjuk people of the Noongar nation, and pay our respects to the Elders past, present and emerging.



TABLE OF CONTENTS

About iPREP WA	4
VitalTrace	6
Cass Materials	10
South Metropolitan Health Service	14
Emyria Ltd	18
Singular Health	22
Telethon Kids Institute	26
Sustainability Waste Alliance	30
Unearthed	34
Customa Pty Ltd	38
CORE Innovation Hub	42
Get Involved	47
Partners & Sponsors	49

ABOUT iPREP WA

Connecting Researchers to Industry

THE CHALLENGE

With about 51% of PhD students seeking employment in business and public sectors (McCarthy & Wienk, 2019) there is a need to equip them with competitive skills for industry and government organisations. Industry feedback suggests universities need an increased focus on developing non-technical and innovative skills in their doctoral candidates to prepare them for a wide range of future careers.

THE INNOVATION

iPREP WA is a unique collaboration between the five WA universities, established for PhD candidates who may not have had previous industry engagement opportunities. They participate in an induction program focussed on business skills, prior to commencing a seven-week team project under the supervision of an industry mentor. The teams share the project outcomes at the conclusion of the program through a formal presentation, written report and other deliverables.

This year, iPREP WA has collaborated with Perth Biodesign. This collaboration was made possible by the X-TEND WA grant, which is part of the State Government's \$16.7 million New Industries Fund. Perth Biodesign provides educational training in healthcare innovation using the Stanford Biodesign methodology, focussing on a prescription method of identifying clinical needs and inventing solutions that fit within the complex healthcare landscape. iPREP Biodesign is a newly established program which gives PhD candidates placed in healthcare organisations or companies extra training and mentoring in Biodesign Methodology.

THE PROJECTS

Projects focus on solving authentic workplace problems. Projects range from blue sky design thinking to highly technical projects. Examples include: concept design; pilot study; needs assessment; review market trends; create or test a product; develop or evaluate a service; prepare a publication; apply for a grant or tender; program evaluation; or feasibility study.

PARTICIPANTS

THE PHD CANDIDATES

Participating PhD candidates are in the late stages of their research degree and hence possess extensive research expertise. The PhD candidates gain greater and more diverse career opportunities through developing skills and experience in:

- Business acumen
- Project management
- Strategic problem solving
- Interdisciplinary teamwork
- Design Thinking

THE INDUSTRY PARTNERS

Industry partners range from start-ups and SME's through to large corporations and government departments. The industry partners benefit from:

- Value for money consultancy from an interdisciplinary team of experienced researchers
- Innovative, creative and credible solutions to problems
- Increased engagement with WA universities to optimise knowledge translation from research outcomes
- Potential to recruit outstanding PhD graduates

THE FUTURE

Through a regular program of industry based projects, the program will maximise benefits for PhD candidates, industry partners and the universities of Western Australia.

If you would like to become involved in iPREP WA, further information can be obtained by contacting us on:

Email: iprepwa@ecu.edu.au

Website: www.iprep.edu.au

VITALTRACE

Mentors: Arjun Kaushik and Michael Challenor

Students: Ying Wang, Lianzhi Chen, Robert Atkinson

Project Title: First end to end wearable fetal monitoring prototype



Monitoring babies and mothers currently requires guesswork due to deficiencies in monitoring technology, leading to a world of stress, medical guesswork, litigation and poorer outcomes. VitalTrace is developing a new technology for keeping mothers and babies safe during labour and delivery. It provides continuous, accurate data about the baby's status during labour, which allows Obstetricians to make informed decisions about management, intervening only when necessary and allowing mothers to birth in the most natural way possible.

The iPREP Biodesign team worked on developing testing protocols to support a regulatory submission as the company is currently involved in a heavy research and development phase.

This team received extra training and mentoring by Perth Biodesign.



Ying Wang
Edith Cowan University

My thesis examines how obesity was represented in two national newspapers - China Daily and The Australian. The research uncovered significant bias towards individuals as obesity is portrayed primarily as a lifestyle disease and a noticeable absence of analysis and references to other determinants of health, namely the economic, cultural, environmental, and genetic factors.

What were your motivations for studying a PhD?

To be an academic.

What is one skill that you excel at?

Discourse analysis.

What is your ideal profession?

A researcher.



Lianzhi Chen
The University of Western Australia

In my PhD thesis, I collected over 200,000 patients with osteoarthritis receiving total knee replacements and showed that obesity has led to high demand of total knee replacement in young and female population. My findings also challenged the current theoretical model by showing that damage at bone-cartilage interface directly impacts the disease progression.

What were your motivations for studying a PhD?

I enjoy the intellectual challenges of research and I believe that undertaking my research can significantly improve patient outcomes.

What is one skill that you excel at?

My strongest skills are communication skills, research skills, statistical analysis, data management; pathological study; Micro-CT and image processing; molecular and cell biology and tissue culture.

What is your ideal profession?

A biomedical scientist.



Robert Atkinson
Curtin University

My work aims to provide a new solution for inflammation. Indigenous Australians have long used plants as a source of anti-inflammatory compounds and my work aims to isolate and characterise those compounds to develop them as anti-inflammatory drugs.

What were your motivations for studying a PhD?

I started my Ph.D. with the aim of learning more about chemistry and potentially helping my career. But gradually I came to realise that my work was not about the chemistry but what could be done with that chemistry.

What is one skill that you excel at?

My greatest skill is the ability to see the simplest way to a solution and implement it.

What is your ideal profession?

A leadership position as a researcher or as part of a team designing industrial systems, or anything in between.

CASS MATERIALS

Mentor: Gary Cass & Bianca Lee (Cellular Agriculture Australia)

Students: Prathyusha Tangella, Tilsa Guima & Thanh Hoang

Project Title: Growing Mammalian Cells on a Bacterial Nanocellulose Cell Culture Scaffold and Associated Socio-environmental Issues with Cultivated Meat as an Alternative Protein Source.



Cass Materials produces an affordable, edible and high-fibre cell culture scaffold for growing cultivated meat. Cultivated meat (aka cultured, clean or lab-grown meat) is an emerging and rapidly expanding global industries that can deliver an alternative protein source. Scaffolding is one of the major problems facing the cultivated meat industry to achieve commercial scale. Cass Materials' bacterial nanocellulose (BNC) scaffolds are made from 100% nata de coco cellulose, a dietary fibre, so is a perfect match to create cultivated meat.

"It has been amazing working with such highly specialised iPrep post-graduates that can apply their individual skills to very separate activities. As cultivated meat is a relatively new technology with little reference material, it was wonderful to see the iPrep team deal with this and work around it."

Gary Cass, Founder, Cass Materials



Lokeswari Prathyusha Tangella
Edith Cowan University

The potential role of ATP-binding cassette B₅ (ABCB₅) transporter in BRAF inhibitors resistance was investigated. The study showed a strong association between inherent ABCB₅ expression and melanocytic markers in melanoma cells. Our study suggests that ABCB₅ perhaps represents a small population of the melanoma cells with high melanocytic signature contributing to melanoma heterogeneity.

What were your motivations for studying a PhD?

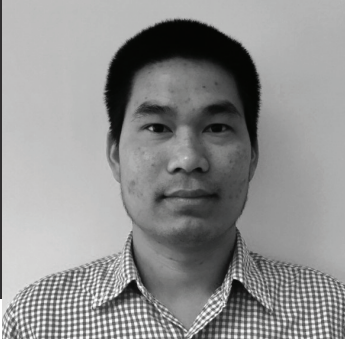
My aspiration to become a scientist and passion for science.

What is one skill that you excel at?

Critical thinking.

What is your ideal profession?

A scientist.



Thanh Hoang
The University of Western Australia

The evolution of social-ecological systems (SESs) can significantly affect the livelihood dynamics of coastal communities and pose challenges for management in developing countries. My study shows that changes in SESs cause disproportionate impacts on natural resource-dependent communities living in a shared place.

What were your motivations for studying a PhD?

I wanted to obtain a deep understanding and knowledge in natural resource management and rural community development that can help protect the environment and improve rural livelihoods.

What is one skill that you excel at?

Working with multiple stakeholders, problem-solving and analytical skills.

What is your ideal profession?

An environmental researcher and trainer or a community development supporter.



Tilsa Guima
Murdoch University

My thesis studies food access among refugee women living in Perth. I use an interdisciplinary approach and a qualitative methodology to explore the challenges that refugee women experience when navigating the Australian food system and the effects on their resettlement process.

What were your motivations for studying a PhD?

It was the perfect challenge opportunity, it not only allowed me to research a topic I feel passionate about, but it also became a journey of self-discovery.

What is one skill that you excel at?

Work Ethic.

What is your ideal profession?

My ideal profession is one that aims to solve social problems with creative methods, ethics and community participation

SOUTH METROPOLITAN HEALTH SERVICE

Mentor: Chloe Goodred, Hazel Hudson, Ashu Gupta, Deirdre Criddle

Students: Jamiu Ekundayo, Rukshima Dabare, Pratima Jain

Project Title: Artificial intelligence for prediction and prevention



South Metropolitan Health Service (SMHS), hospital and community-based public health care services across the southern half of Perth. The network consists of Fiona Stanley Hospital, Rockingham General Hospital, Fremantle Hospital, Murray District Hospital and Peel Health Campus. Artificial intelligence (AI) for prediction and decision support is an emerging tool in healthcare which has much potential but also requires significant development before the benefits will be realised for patients. This iPREP project was about progressing the capability for developing AI decision support at South Metropolitan Health Service, with a focus on two AI projects currently underway:

- Fracture detection and outcome prediction
- Medication safety and readmission prevention

This team received extra training and mentoring by Perth Biodesign



Jamiu Ekundayo
Curtin University

Actual contributions of desorption to gas production is often masked by the use of adsorption isotherms for gas production predictions. My research aims to quantify the effect of such a misrepresentation on gas production where sorption hysteresis is observed.

What were your motivations for studying a PhD?

I wanted to contribute to sustainable global energy production.

What is one skill that you excel at?

Problem solving.

What is your ideal profession?

Data Science with applications to healthcare and energy.



Rukshima Dabare
Murdoch University

My PhD research was focused on investigating methods to enhance the performance of a Deep Neural Network (DNN) classifier when dealing with numerical data by the introduction of improved regularisation techniques.

What were your motivations for studying a PhD?

I love to learn, explore, research and give back to society.

What is one skill that you excel at?

Knowledge sharing.

What is your ideal profession?

Researcher, academic or industrial consultant.



Pratima Jain
Curtin University

My PhD title is “evaluating affective design perceptions of users using fuzzy regression techniques” and “development of an agro prosumer community framework using blockchain”.

What were your motivations for studying a PhD?

I believe in practicing new ways of doing things or working for a good cause.

What is one skill that you excel at?

I am detail oriented.

What is your ideal profession?

Strategic advisor within a company.

EMYRIA LTD

Mentor: Patty Washer

Students: Geordie McLeod, Faiza Owais, Sebastian Roth

Project Title: Emerald's Real-World Evidence Clinical Care Model



Emyria Ltd (including Emerald Clinics) is an Australian publicly listed healthcare technology company, which operates clinics and facilitates access to emerging treatments generating clinical evidence on the safety and effectiveness of these new treatments. Emyria has developed a real-world data model incorporating our network of clinical services to translate real-world patient experiences into clinical evidence and accelerate access to new treatments in a safe, robust and ethical way. Our current programs include development of digital health technologies to improve patient monitoring and evaluation of new treatments for chronic diseases. The iPREP Biodesign team evaluated cannabinoid medicines for treatment of chronic disease symptoms. To assist with analysis of a data registry, the team evaluated existing knowledge on treatment of chronic diseases with cannabinoid medicines.

This team received extra training and mentoring by Perth Biodesign



Geordie McLeod
Edith Cowan University

My research sought to better understand injuries in community cricket players, with a focus on the potential to use data from insurance claims for injury surveillance.

What were your motivations for studying a PhD?

It was an opportunity to improve knowledge in a field I am passionate about and hopefully provide an impetus for future injury prevention.

What is one skill that you excel at?

Collating and conveying complex information in a simple way.

What is your ideal profession?

Something that enables real world/practical advice to improve people's way of life.



Faiza Owais
Curtin University

I am a data analyst and safety expert completing my PhD in Risk Assessment in the mining industry. Throughout my research, I developed a new model for industrial application, called “TRIAC” for hazard identification and prevention.

What were your motivations for studying a PhD?

After working as a project manager and safety coordinator for 8 years, I understand how important safety is in a workplace. This inspired me to study a PhD in this area.

What is one skill that you excel at?

Analysing data.

What is your ideal profession?

Data Analyst or a safety and risk consultant.



Sebastian Roth
The University of Western Australia

My thesis consists of three essays investigating the economic behaviour and preferences of people, both at the aggregate level as well as the micro level. How and why individuals make decisions, but also where such decision-making behaviour may originate in the first place.

What were your motivations for studying a PhD?

An interest in understanding how the world around us shapes our beliefs, expectations, and perception.

What is one skill that you excel at?

Communication, both verbal and written.

What is your ideal profession?

Social scientist or researcher.

SINGULAR HEALTH

Mentor: Guan Tay

Students: Benedicta Santoso, Md. Zakir Hossain, Soodeh Tirnaz

Project Title: MedVR: automating image acquisition, transportation and mapping



Singular Health is developing tools to improve health outcomes, medical planning processes and quality of life through medical imaging visualisation and analysis. In contrast to traditional medical image viewing formats (CT, MRI scans) that are usually visualised on a 2D screen, our proprietary software presents bioimages in fully interactive immersive models within our virtual reality platform. The iPREP Biodesign team assisted the development team with elements of Singular Health's Surgical Planning Platform. The team used a pilot dataset and described a method for differentiating between distinctive characteristics of an organ system. This semi-automated classification of pathology of the organ system contributed to Singular Health's end goal of producing a tool that visualises a tissue of interest effectively and superiorly compared to conventional methods.

This team received extra training and mentoring by Perth Biodesign



Benedicta Santoso
Edith Cowan University

Despite recent increasing demand for fertility treatments observed globally and in Australia, the success rate of the current clinical practices remains suboptimal. My PhD thesis aims to investigate the potential sources and clinical impact of two sperm biomarkers, reactive oxygen species and apoptosis.

What were your motivations for studying a PhD?

I have always been passionate about science and education; and have always been fascinated by how great the impact of the two can be both for individual and for the community.

What is one skill that you excel at?

Critical and analytical thinking.

What is your ideal profession?

I wish to hold a managerial position in a healthcare/ pharmacological or medical device company or in a clinical research institution.



Md. Zakir Hossain
Murdoch University

In my thesis, I focus on advanced deep learning-based image captioning techniques. Image captioning is an important aspect of image understanding. Deep learning-based techniques can handle the complexities and challenges of image captioning.

What were your motivations for studying a PhD?

I am passionate about Information Technology especially in Artificial Intelligence.

What is one skill that you excel at?

Machine Learning and Deep Learning Techniques.

What is your ideal profession?

Machine learning engineer, machine learning researcher, or university lecturer.



Soodeh Tirnaz
The University of Western Australia

I conducted my PhD research with a major focus on investigating the genomics and epigenetics aspects of plant-pathogen interactions in crops.

What were your motivations for studying a PhD?

The crisis that agricultural industries are facing due to climate change motivated me to continue my study in the higher degree (PhD) towards sustainable agriculture.

What is one skill that you excel at?

Quick learning, innovation, critical thinking and collaboration.

What is your ideal profession?

Researcher or working on a project in industry that benefits people and the future.

TELETHON KIDS INSTITUTE

Mentors: Ashley Schoof, Lea-Ann Kirkham

Students: Silvano Paternoster, Farzaneh Eslamloo, Xingang Li

Project Title: Development of a commercialisation plan for a novel bacterial therapy to prevent ear infections in children



Founded in 1990, the Telethon Kids Institute is now the largest medical research institute in Western Australia with more than 800 staff and students and annual revenues from grants, commercial partnerships and philanthropy exceeding \$90 million.

Respiratory infection is a leading global cause of illness and death. We are developing a safe, non-invasive, low-cost prophylactic bacterial therapy for respiratory infections in children and adults. The iPREP Biodesign team was tasked with the development of a commercialisation plan for this project, including target market identification, regulatory pathways, market intelligence and identification of Funding Sources.

This team received extra training and mentoring by Perth Biodesign



Silvano Paternoster
Curtin University

I have studied a novel class of drugs for the treatment of metabolic diseases such as Type 2 diabetes and obesity. I have characterized the pharmacology and activity of natural bio-active lipids, as well as a library of synthetic compounds mimicking their molecular structure.

What were your motivations for studying a PhD?

Learning transferable and technical skills that would improve my employability.

What is one skill that you excel at?

Problem Solving.

What is your ideal profession?

Product management and leadership in biopharma industry.



Farzaneh Eslamloo
Edith Cowan University

My research aims to identify how start-up accelerator programs work to guarantee the commercialisation of start-ups. The research focused on 'literature', 'secondary data', and 'interview data of accelerator professionals' to construct the model of acceleration proposing the influence of start-up ecosystems on mechanisms leading to successful commercialisation.

What were your motivations for studying a PhD?

My extreme passion for research in innovation and start-up commercialisation fields.

What is one skill that you excel at?

Qualitative research and data analysis.

What is your ideal profession?

Industry researcher.



Xingang Li
Edith Cowan University

My PhD project investigated the functionally relevant tissues and relatedly expressed genes for human IgG N-glycosylation. This knowledge will improve understanding of the underlying mechanisms regulating IgG N-glycome in autoimmune diseases, cancer and chronic diseases, serving as an important screening tool for early diagnosis and better treatment.

What were your motivations for studying a PhD?

I enjoy learning new knowledge and upgrading my skills of research.

What is one skill that you excel at?

My interpersonal skills to communicate and interact effectively with other people, including active listening, verbal communicating and teamwork.

What is your ideal profession?

A researcher or developer of biomedicine.

SUSTAINABILITY WASTE ALLIANCE

Mentors: Peter Damen, Christina Chin

Students: Robert Weymouth, Asha Ramachandran, Mona Arabshahi

Project Title: Improving waste diversion from landfill for more sustainable roads



The Sustainability Waste Alliance (SWA) is made up of representatives from Main Roads Western Australia, Bunbury Harvey Regional Councils, the South West Regional Waste Group, South West Development Commission, Regional Development Australia-South West and the Noongar Chamber of Commerce and Industry. The Alliance has a goal of increasing waste diversion of 20% across South West WA and the creation of long term local jobs in the waste sector. The SWA Innovation Hub was established to provide information to increase confidence in the use of recycled materials in transport infrastructure. The iPREP project team contributed to the development of a Recycle First Plan for the Boundary Outer Ring Road (BORR) project. The application is based on a starting assumption that all project materials should be reused or recycled. The Plan supports opportunities for increased recycled content in road construction in the South West beyond the BORR.



Robert Weymouth
Curtin University

My thesis argues that rebuilding trust in government through public partnerships plays an important role in resolving the wicked problems related to transitioning to sustainability. My study shows that deliberative democracy can deliver the partnership relationship that builds the vital trust required for sustainability.

What were your motivations for studying a PhD?

I like the process and outcome of going from a place of not knowing to a place of better understanding.

What is one skill that you excel at?

Tricky question as I have several broad skills at which I excel at.

What is your ideal profession?

Any role that makes the world better.



Asha Ramachandran
Curtin University

My thesis is a novel attempt to underpin the effect of sustainable alternatives such as bacterial biopolymers and biomineralization on stabilization of soil. With the emergence of bio-geotechnology as an environmentally benign alternative to chemical stabilization, there is a paradigm shift in the field of soil stabilization.

What were your motivations for studying a PhD?

The construction industry alone is accountable for 40% of global carbon dioxide emissions. This motivated me to take up research in the area of a sustainable alternative to conventional cement.

What is one skill that you excel at?

Technical writing.

What is your ideal profession?

To continue my research towards a carbon-neutral construction industry.



Mona Arabshahi
Curtin University

My research involves investigating why the adoption of sensing technologies in the construction industry lags behind other industries. The outcome of this research is a governance framework to assist with the adoption of sensing technologies in construction.

What were your motivations for studying a PhD?

Previous industry work was not enough for me. I had to explore new worlds and open new doors.

What is one skill that you excel at?

Multi-tasking, time management and sound collaboration within a team.

What is your ideal profession?

In an industry-based research position.

UNEARTHED

Mentors: Justin Strharsky, Ben Dougherty, Jan Hurst

Students: Xiu Liu, Lydia Maketo, Roberto Minunno

Project Title: Industrial Production Machine Learning and Assessing Environmental Benefits of Open Innovation Crowd Challenges to Industrial Enterprises



Unearthed is the largest community of start-ups, developers, and data scientists making the energy and resources industry more efficient and sustainable. We have helped 20 of the industry's largest companies to solve some of their most pressing engineering and data science challenges. The project was divided into two different areas of work. One area of focus involved the iPREP team contributing to development of a novel technology solution to enable scalable, reproducible, production machine learning for industrial enterprises. The other area of focus involved the iPREP team assessing environmental benefits of open innovation crowd challenges to industrial enterprises.

"The work of the iPrep student team will help make industry more efficient and sustainable. They have contributed to our application machine learning to optimising industrial processes, and to a methodology for estimating the CO₂ equivalent savings that result." - Industry mentor, Justin Strharsky



Xiu Liu
Curtin University

My thesis presented a study on the gas adsorption in carbonaceous materials with more realistic models. A special effort was spent on developing a new mercury potential model to improve the understanding of mercury interaction with carbonaceous materials, which has important practical application in industry.

What were your motivations for studying a PhD?

Strong interest in computer simulation techniques.

What is one skill that you excel at?

Computer simulation and numerical calculation.

What is your ideal profession?

Continuous focus on the area of computer science and its application.



Lydia Maketo
Curtin University

My thesis aims to develop a model for mobile learning for Zimbabwe universities. Mobile learning in higher education is an under researched topic in developing countries.

What were your motivations for studying a PhD?

With my background in Information technology and education, I wanted to upskill my knowledge, so I decided to research mobile learning.

What is one skill that you excel at?

Analytical and problem-solving skills.

What is your ideal profession?

My ideal profession would be one that involves use and application of research skills in an environment that provides me opportunities to learn and grow, utilise my skills and contribute to the organisation.



Roberto Minunno
Curtin University

My thesis explores the environmental benefits of applying the circular economy to buildings. In so doing, I produced a modular movable, disassemblable and transportable research facility, called the Legacy Living Lab.

What were your motivations for studying a PhD?

I have always been passionate about learning, teaching, critical thinking and problem solving. That, together with my deep interest on environmental and societal issues, were my main drivers to undertake a PhD.

What is one skill that you excel at?

I believe to excel in analysing phenomena.

What is your ideal profession?

My ideal profession at this stage is within academia, as it pushes me to think, learn and disseminate what I have learnt.

CUSTOMA PTY LTD

Mentor: Guan Tay

Students: Eghan Arjomand, Muhammad Ikhtlaq, Aswin Rajagopalan

Project Title: Development of Bespoke Ostomy Seals



Customa Pty Ltd develops custom stoma inserts for patients to ensure a “snug fit” within the stoma and over the skin surrounding the stoma. This technology helps prevent stoma leakage, ballooning and coupling failure and improves the overall stoma appearance on the body. Each bespoke device is personalized and manufactured to fit the unique topography of an individual’s abdomen. The iPREP Biodesign team reviewed documentation for polymers used for medical devices and provided recommendations on the optimal polymer for commercial use. They also reviewed TGA and FDA policy documents progressing the device towards certification. They also reviewed 3D scanning and printing technologies to recommend a methodology for acquiring the 3D image of a stoma, transfer to a file for ED printing of the mould for the device and casting of the Customa device.

This team received extra training and mentoring by Perth Biodesign



Eghan Arjomand
Curtin University

This research has compared the multiphase flow characteristics of the CO₂-brine-rock system under the strongly water-wet and CO₂-wet states. This research serves to fill a gap in the literature by providing evidence about the effect of wettability on dynamic multiphase flow characteristics of CO₂-brine system.

What were your motivations for studying a PhD?

To become an expert in my area of interest and to help create a better environment through reduction of greenhouse gases.

What is one skill that you excel at?

Work ethic, problem solving and thinking outside the box.

What is your ideal profession?

Design and innovation.



Muhammad Ikhtlaq
Curtin University

Impinging jets feature in applications ranging from electronic device cooling to the drying of paper and food products. In this PhD study, the effects of operating parameters associated with non-heated turbulent jets are investigated.

What were your motivations for studying a PhD?

Teaching is my passion, so by studying a PhD it has given me more knowledge to share.

What is one skill that you excel at?

Rational thinking and decision-making ability.

What is your ideal profession?

A place where I can teach and innovate will be the ideal profession for me.



Aswin Rajagopalan
Curtin University

My research examines the distribution and location of chemical compounds in plants at a microscopic level, which provides insights into new or alternative uses for these compounds in the area of medicinal chemistry.

What were your motivations for studying a PhD?

I really enjoy chemistry and studying a PhD gave me the opportunity to learn more in this study area.

What is one skill that you excel at?

Organisational skills.

What is your ideal profession?

My ideal profession would be a researcher with opportunities to do community outreach work to get young people engaged in STEM fields.

CORE INNOVATION HUB

Mentor: Tamryn Barker

Students: Fatemeh Nikkhou, Hai Min Dai, Sandra Crewe, Isabeau Tindall

Project Title : CORE Skills Data Fitness Framework Model Development



CORE Innovation Hub is an innovation hub focused on the resources and energy sector. We have hubs in the Perth CBD and Adelaide where we provide co-working services to start-ups and industry as well as deliver growth building programs and skills pathways.

We recognise that all organisations are ‘data organisations’; meaning that data is ubiquitous within a business, and as such is increasingly affecting all roles. As the oil and gas sector succeeded in assessing and managing “Fitness-To-Operate” in terms of safety, we are developing an analogous “Data Fitness” Framework to assess an organisation’s data competence, which includes skills and behaviours, at all levels and across all roles. The iPREP team assisted in researching and building a seed model of this framework. They constructed and undertook industry interviews and assessed the results.



Fatemeh Nikkhrou
Murdoch University

I studied hydrometallurgical processing of sphalerite and galena as potential alternatives to conventional pyrometallurgical methods for extracting zinc and lead. This method consumes less energy, produces elemental sulfur instead of harmful sulfur dioxide gas, and can be used for low-grade ores.

What were your motivations for studying a PhD?

I love research and innovation and aspire to discover and learn new things.

What is one skill that you excel at?

Analytical skills.

What is your ideal profession?

Principal Consulting Engineer.



Hai Min Dai
Murdoch University

My thesis aims to gain more insight into the issue of high dropout rates across Massive Open Online Courses (MOOCs). The insights derived from the research findings can help guide MOOC instructors to improve the learner experience and universities to prepare MOOCs for inclusion in blended classes.

What were your motivations for studying a PhD?

I was curious why learners' feedback and behaviours were so varied with online courses.

What is one skill that you excel at?

Research and publication.

What is your ideal profession?

A researcher in an organization or a university.



Sandra Crewe
Murdoch University

I was interested to explore the impact of nurse managers' leadership behaviours on nurse retention. My research involved understanding what leadership behaviours positively influenced staff outcomes, specifically retention of staff in the organisation.

What were your motivations for studying a PhD?

As a Human Resource Practitioner, I identified several causes for staff attrition in the workplace but wanted academic evidence-based research to justify my personal anecdotal evidence.

What is one skill that you excel at?

I have strong organising skills.

What is your ideal profession?

Human Resource Practitioner.



Isabeau Tindall
The University of Western Australia

My thesis examined the impact of experiencing anxiety and reviewing other-race individuals, on a person's face memory. My findings are highly relevant to the criminal justice setting and indicate that you cannot assume someone is going to be accurate because the viewed face is of the same race, and that inaccuracies for other-race faces are highly pervasive.

What were your motivations for studying a PhD?

A passion for research, specially, in the field of psychology.

What is one skill that you excel at?

Communication.

What is your ideal profession?

A researcher either within a university or in industry.

GET INVOLVED

Industry Partners

Do you have a business problem to solve or an opportunity to address? Could your organisation benefit from university expertise? Do you want to expand R&D capacity on a tight budget?

iPREP WA supports research engagement between the universities and healthcare industries of Western Australia. The program involves interdisciplinary teams of PhD students, from all five WA universities, working on a seven-week project with an industry partner.

Industry Partners are expected to submit a short project outline that can be further scoped once students are selected and provide a mentor from the organisation who is available during the program.

We offer two different levels of engagement for industry partners who wish to be involved with the iPREP Biodesign program.

\$10,000 + GST Partnership

- Team of three PhD students for seven weeks full-time
- Prominent position of logo and link to company website on iPREP WA home page, industry partner page and promotional materials
- Project profile and short video on iPREP WA website
- Opportunity to include flyer in Induction pack
- Banner to be displayed at final celebration event

Not-for-Profit & Startup sponsorship opportunity

- 50% off for eligible startups and not-for-profits (\$5000 + GST)
- All applications will be assessed for the reduced fee

TAKE PART IN iPREP WA

PhD Candidates

WHY PARTICIPATE

- Diversify your career opportunities
- Develop new networks and contacts
- Gain new skills in project management, team work, interdisciplinary problem solving, business awareness and leadership
- You may be eligible for a \$4000 scholarship

ELIGIBILITY

- Enrolled as a PhD candidate at a university in Western Australia
- Applicants should have submitted their thesis for examination prior to the program commencement but their degree must not be conferred before the end date of the program
- Domestic students who have completed 2 EFTSL of their research degree program may also be eligible
- Must be available to complete the project on a full time basis during the scheduled seven-week program

Student guidelines and online application form are available on the iPREP WA website. Check back to see when applications open: www.iprep.edu.au



INDUSTRY PARTNERS



Government of Western Australia
South Metropolitan Health Service



SUPPORTERS



The New Industries Fund is managed by the Department of Jobs, Tourism, Science and Innovation



The iPREP Team

iPREP WA Coordinator: Narelle Jones

iPREP Biodesign Coordinator: Michelle Luca

Perth Biodesign Director: Intan Oldakowska

Contact iPREP Biodesign:

iprepwa@ecu.edu.au

(08) 6304 2069

www.iprep.edu.au

Brochure design: Marziya Mohammedali



Special thanks to:

Professor Joe Luca, Professor Kevin Pflieger, Professor Margaret Jones and the Deans and Directors of WA Graduate Research Schools, Dr Agi Gedeon, Dr Krystyna Haq, Tania Lerch, Kellie O'Toole, Dr Kate Howell, Rochelle Gunn, Jeanne Boles, Catherine Lightfoot, Julia Jarel, Marziya Mohammedali, Dr Tash Ayers, Dr Mayyada Mhanna, Sarah Gray, Kristen Houston and the team at Department of Jobs, Tourism, Science and Innovation.



iPREPWA
Industry and PhD
Research Engagement Program



Perth
Biodesign