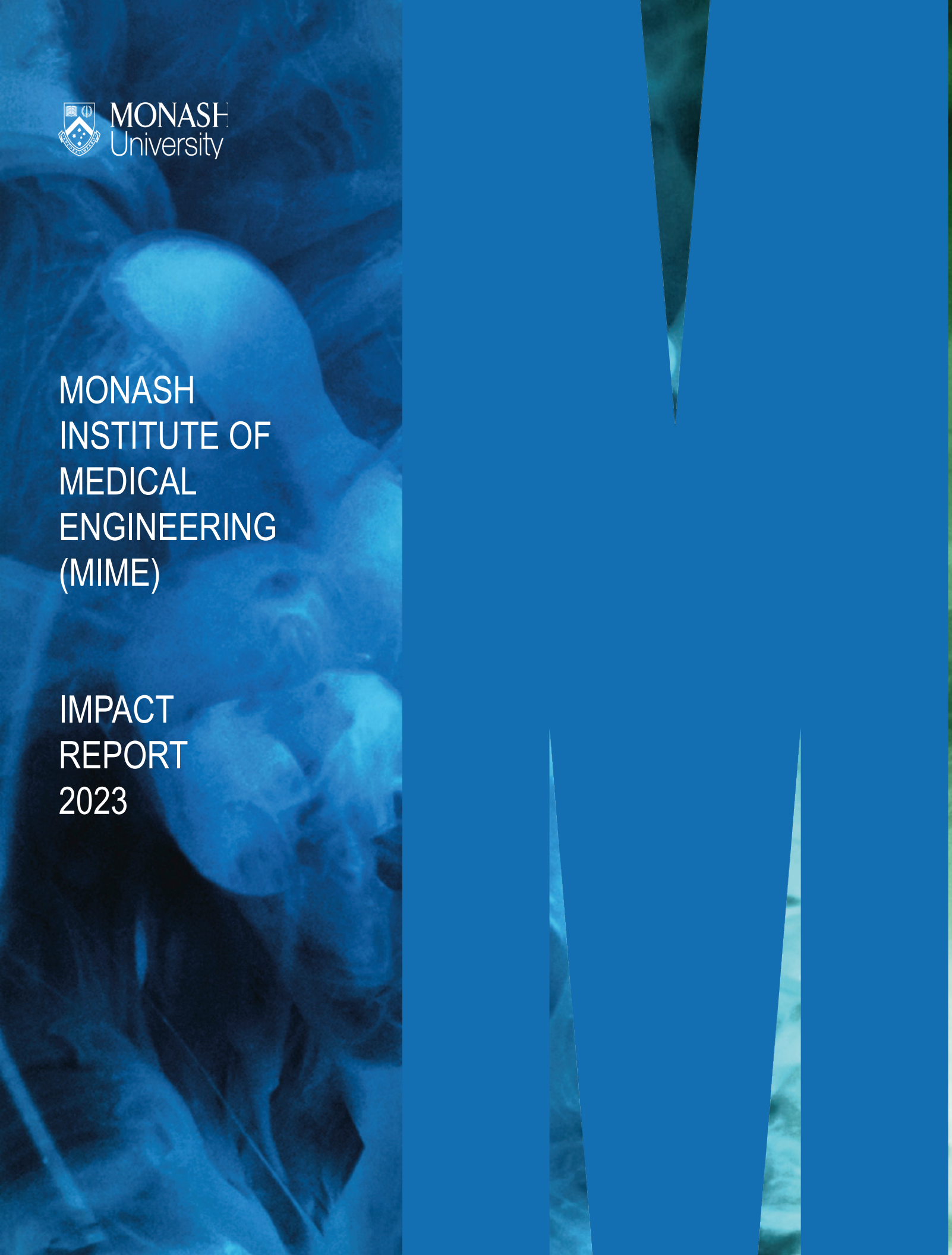


MONASH University

MONASH INSTITUTE OF MEDICAL ENGINEERING (MIME)

IMPACT REPORT 2023

“MIME has generously supported cardiovascular engineering research at Monash University over a number of years through seed grants and top-up grants for our team at the CREATElab. Some of these funds have been directly used to support early research that produced pilot data for our recently successful Artificial Hearts Frontiers Program (AHFP) which received a $50M grant from the Medical Research Future Fund.

The AHFP focuses on three core devices to treat patients with heart failure, with one of those devices started at Monash University through funding from MIME.

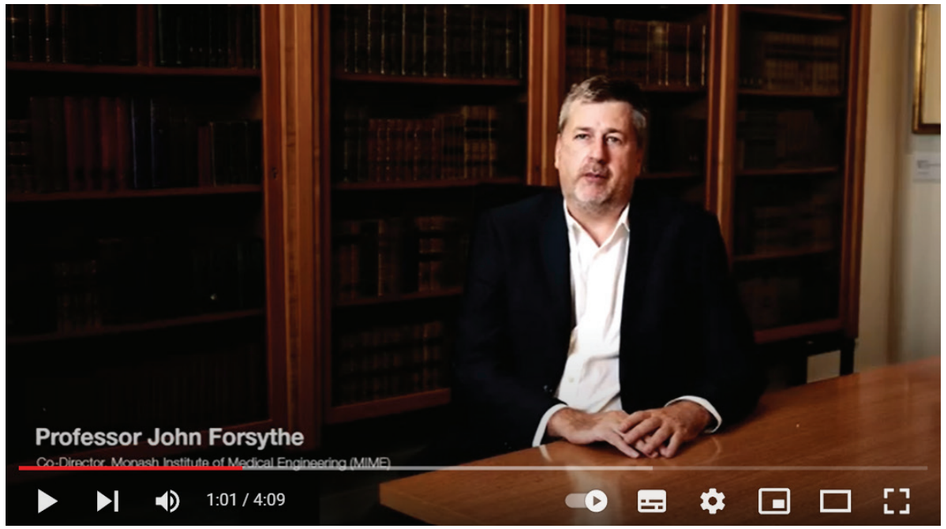
The AHFP, and myself personally, thank MIME for their support over many years which has led to substantially larger initiatives and, hopefully, translation into better patient outcomes in the near future.”

Associate Professor Shaun Gregory
Past MIME Seed Funding recipient

The most significant advances in healthcare technology are increasingly the result of collaboration between Health and Medical Researchers, Engineers, Designers, and IT specialists - which is why the Monash Institute of Medical Engineering (MIME) was formed.

MIME fosters links between the Monash University faculties of Medicine, Engineering, IT and Design and with a range of industry and MedTech ecosystem partners. Through our unique partnership with Monash Partners Academic Health Science Centre we work directly with clinicians to identify unmet medical needs and provide research and commercialisation support and education for promising research and researchers.

Want to know more? Visit monash.edu/mime or watch the video below.



MIME's vision is underpinned by three strategic pillars:

Health and social impact
Workforce capacity building
Intellectual property discovery and translation

Professors Patrick Kwan and John Forsythe, MIME Co-Directors.

As we reflect on 2023, the Monash Institute of Medical Engineering (MIME) would like to thank all those who have supported us identify unmet medical needs, and provide research and commercialisation support and education for promising research and researchers.

It was a momentous year which saw MIME:

- Continue to work in partnership with Monash Partners Academic Health Science Centre as their medical technology innovation platform, and our University faculty partners of Medicine, Nursing and Health Sciences, Information Technology, Engineering, and Art, Design and Architecture to improve the delivery of healthcare.
- Hold our MedTech symposium focused on bringing together collaborators from all corners of our sector, with a keynote presentation showcasing Professor Andreas Fouras and 4DMedical, a shining light starting as a spin-out from Monash University. Plus, a selection of the best of MIME's project work, and innovative thinkers on our panel, to drive change in clinical practice through innovation and technology.
- Support numerous projects advance towards commercialisation via our Victorian State Government-funded initiative, the Medtech Commercialisation Advancement Program (MCAP).
- Partner with Safer Care Victoria and the Australian MedTech Manufacturing Centre to deliver healthcare improvement through innovation, including developing what will be the first phase of MIME's new learning and development platforms to be launched in 2024.
- Partner with the Centre for Health Economics to assist and provide advice to The Therapeutics Goods Administration (TGA) on regulatory submissions for approval of medical devices.
- Host our first joint seminar with our sister-institute at the University of Melbourne, the Graeme Clark Institute.
- Provide $300,000 in Seed Funding across seven projects to meet unmet clinical needs.
- Support six Healthcare Innovation Summer Scholarship projects and 18 students to achieve innovative IT/engineering/design app-based solutions to real world health problems.
- Recognise and encourage seven female students in STEMM through our Women in STEMM Student Leader Awards, and
- Continue to engage with external collaborators and stakeholders.

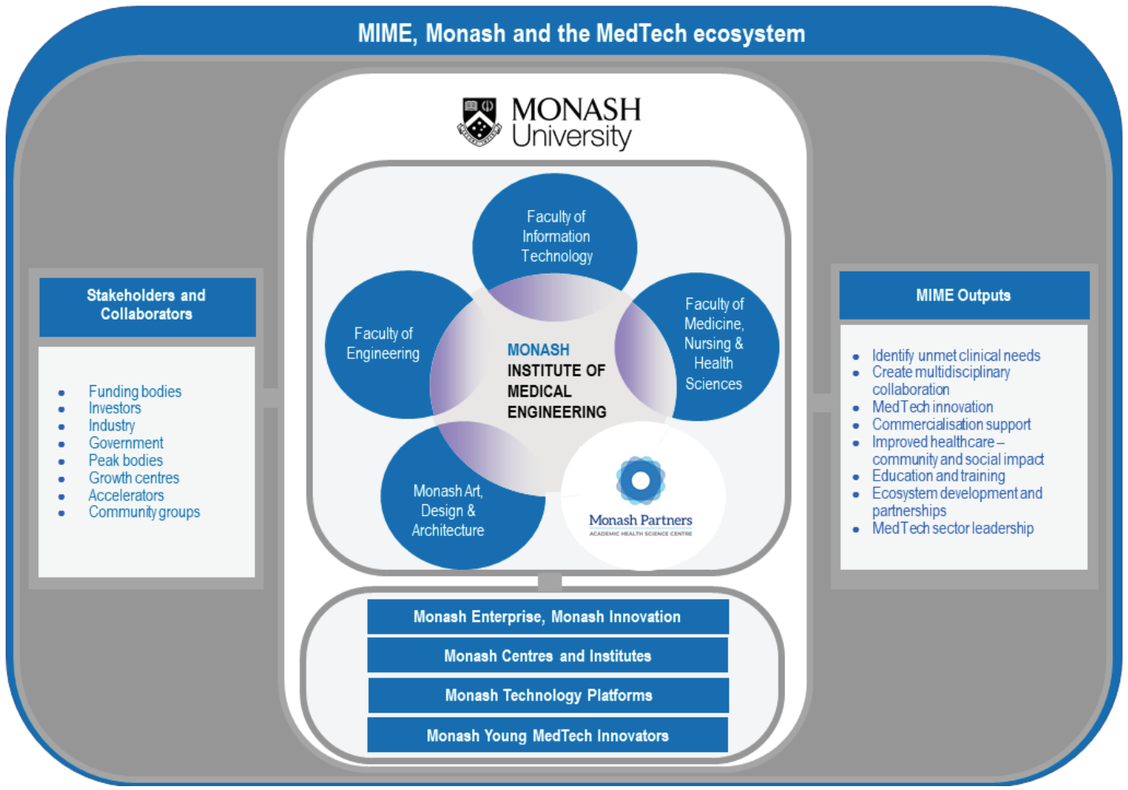
We look forward to strengthening our efforts in the coming year.

Professors Patrick Kwan and John Forsythe, MIME Co-Directors

Through our partnerships we work to improve the delivery of healthcare via the acceleration of new technology development, trials, commercialisation and adoption.

MIME is proud to partner with:

- Monash University Faculty of Medicine, Nursing and Health Sciences
- Monash University Faculty of Information Technology
- Monash University Faculty of Engineering
- Monash University Faculty of Art, Design and Architecture, and
- Monash Partners Academic Health Science Centre



A software tool is being developed to assist clinicians optimise outcomes in patients with aortic stenosis and reduce their risk of stroke, thanks to MIME Seed Funding.

Aortic valve stenosis (AS) is the most common form of heart valve disease in Australia and represents a major healthcare burden. Its prevalence increases with age, reaching 10 per cent in adults over 80 years.

Transcatheter aortic valve implantation (TAVI) is an established therapy of choice for patients with AS, however a complication of this procedure, which involves implantation of a new valve in place of the diseased aortic valve, is stroke.

Lead researcher, Dr Michael Seman, cardiologist and clinician researcher at the Alfred Hospital and the Faculty of Medicine, Nursing and Health Sciences at Monash University said a proposed solution was being developed in the form of a TAVI stroke risk tool. This will incorporate clinical information and CT imaging data to calculate the propensity for stroke based on patient specific features.

"AS is a progressive disease caused by the narrowing of the heart valve that results in restriction of blood flow out of the heart. If left untreated, symptomatic patients with severe AS have a poor prognosis, with a 30 to 50 per cent mortality at 12-months," said Dr Seman.

"TAVI is a minimally invasive procedure in which a new artificial valve is inserted inside the existing diseased valve, improving blood flow. In 2015, approximately 71,000 TAVI procedures were performed worldwide, and by 2025, numbers are anticipated to reach 289,000."

"Despite its established clinical efficacy, TAVI is not without significant patient risk. Stroke is a potential catastrophic complication of TAVI. To date, there has been limited progress in reducing TAVI-related strokes. Previous efforts have added greater cost and more complexity to the procedure, with its efficacy and safety remaining unclear."

"The tool we are developing will assist clinicians calculate a TAVI-related stroke risk, that will be able to be used for all patients being considered for TAVI," said Dr Seman.

The impact of the tool will be significant for clinicians, hospitals and patients.

"Government funded healthcare (e.g. Medicare) and private insurance providers are the ones who pay for the TAVI intervention. The global market size for TAVI was $4.4 billion in 2021 and is estimated to reach $13.35 billion by 2030."

"The introduction of this tool could ultimately reduce TAVI associated strokes, optimise clinical outcomes in patients with aortic stenosis all while reducing hospital costs", said Dr Seman.

The project is currently in the research and development phase simulating the TAVI procedure and its associated complications using artificial intelligence.

Acknowledgements

This research project is titled *"Reducing stroke in TAVI"*. The project team includes:

• Dr Michael Seman (Monash University, Faculty of Medicine, Nursing and Health Sciences; Alfred Health, Department of Cardiology)
• Dr Mehrdad Khamooshi (Monash University; Faculty of Engineering)
• Associate Professor Shaun Gregory (Monash University; Faculty of Engineering)
• Dr Andrew Stephens (Monash University; Faculty of Engineering)
• Mr Avishka Wickramarachchi (Monash University; Faculty of Engineering)
• Associate Professor Robert Gooley (Monash Health; Department of Cardiology)
• Associate Professor Dion Stub (Alfred Health; Department of Cardiology)
• Professor David Kaye (Alfred Health; Department of Cardiology).

This project highlights our partnership with Monash University, Faculty of Medicine, Nursing and Health Sciences and was made possible thanks to MIME Seed Funding.

An app to support personal recovery of people with lived experience of enduring mental illness has received $50,000 in MIME Seed Funding.

The app is the idea of Monash Rural Health academic and mental health clinician, Dr Anton Isaacs, who partnered with chief investigator Dr Tanijla Kanij, a Research Fellow at Monash University's Faculty of Information Technology.

Senior lecturer at Monash Rural Health, Dr Anton Isaacs has a keen interest in the mental health of rural and medically underserved communities. His research work has focused on the design, implementation and evaluation of mental health and wellbeing services. Previously, he designed and implemented a Community Mental Health Programme in Rural Karnataka, India, as well as co-designed a model for early detection of mental health problems among Aboriginal men called the Koori Men's Health Day.

From his experience, Dr Isaacs recognised that a mental health service is but one component of what is needed to provide support and recovery for people experiencing enduring mental health challenges. He developed a proposal for the app to sit alongside traditional mental health services, to particularly support the recovery process of those who experience chronic mental health challenges in rural and remote areas who may have limited access to regular face-to-face mental health support.

"Helping people with enduring mental health challenges is not only about reducing symptoms but also about helping them live a supported, meaningful and satisfying life."

Dr Isaacs says his project team includes two IT experts who will be responsible for developing the app, a person with lived experience of mental health challenges who will provide guidance on the app's content as well as a psychiatrist to guide the clinician perspective.

Once a prototype is developed, feedback will be sought from persons with lived experience and service providers to identify improvements and the effectiveness of the tool.

"This app will represent a safe space for people experiencing mental health issues and might help clinicians and other service providers to provide more person-centred care. This app will provide an additional layer of support for those who are not able to readily access professional services," said Dr Isaacs.

Acknowledgements

This research project is titled *"Client focused personal digital recovery monitor"*. The project team includes:

• Dr Anton Isaacs (Monash University; Medicine, Nursing and Health Sciences)
• Dr Tanjila Kanij (Monash University; Faculty of Information Technology)
• Dr Faezeh Marzbanrad (Monash University; Faculty of Engineering)
• Professor Sally Robinson (LaTrobe Regional Hospital, Traralgon)
• Ms Anna Dyer (LaTrobe Regional Hospital, Traralgon).

This project highlights our partnership with Monash University, Faculty of Information Technology and was made possible thanks to MIME Seed Funding.

A semi-automated robotic suturing system for use in cardiac surgery is being developed to improve surgical outcomes, thanks to MIME Seed Funding.

Currently, suturing with available robotic systems is a challenging and time-consuming task that requires highly trained and skilled surgeons. The proposed system will improve the accuracy, consistency and speed of suturing, assisting surgeons reduce their workload and training costs whilst enhancing patient results.

Lead Researcher, Dr Armin Ehrampoosh, Postdoctoral Research Fellow and Principal Investigator, Professor Bijan Shirinzadeh from the Department of Mechanical and Aerospace Engineering, Faculty of Engineering, at Monash University said this system will solve the limitations of existing robotic systems.

“Robotic suturing is a challenging and repetitive task that requires a high level of skill and experience, which results in long training periods and high costs for healthcare providers. The existing robotic systems currently in use have certain limitations such as complexity of controlling high degrees of freedom, lack of force feedback, and potential tissue damage. The proposed system aims to address these,” said Dr Ehrampoosh and Professor Shirinzadeh.

“The proposed system aims to reduce the workload on surgeons by developing a new needle driver mechanism that automates the suturing process, providing haptic feedback to the surgeon to assist with better sensory feedback, and offering active constraints guidance to prevent the robotic arm from entering forbidden regions, reducing the likelihood of complications during surgery. By integrating advanced methodologies like optimisation-based algorithms, machine learning, and laser-based measurements, the system will help the surgeon complete the suturing procedure with greater accuracy and consistency.”

The impact of the project will be significant for both surgeons and patients.

“For surgeons, the proposed system will reduce the burden of the suturing task, enabling them to focus on other aspects of the surgical procedure. While for patients, the system aims to improve the quality and consistency of suturing, leading to improved surgical outcomes and post-operative recovery rates. Additionally, the project has the potential to improve training for surgeons, reducing training costs and time, and potentially making cardiac surgery more accessible,” said Dr Ehrampoosh and Professor Shirinzadeh.

The project is currently in the research and development phase and has already achieved several milestones, including the development of a proof-of-concept prototype for the semi-automated needle driver mechanism, providing haptic feedback based on machine learning, and the implementation of the active constraints guidance system using virtual fixture algorithms. These developments have been validated through experiments, and research papers have been published.

Next steps include increasing robotic end-effector dexterity, enhancing the robot’s autonomy through laser-based measurements that enable the robot to perform the task autonomously using the user’s selected suturing points and improving the stability of virtual fixture algorithms.

Acknowledgements

This research project is titled *“Semi-automated suturing instrumentation for cardiac surgery”*. The project team includes:

• Professor Julian Smith (Monash University, Faculty of Medicine, Nursing and Health Sciences)
• Professor Bijan Shirinzadeh (Monash University; Faculty of Engineering)
• Dr Armin Ehrampoosh (Monash University; Faculty of Engineering).

This project highlights our partnership with Monash University, Faculty of Engineering and was made possible thanks to MIME Seed Funding.

Production of a wearable sensor to record the impact of artificial light on our bodies to prevent chronic disease is to be developed, thanks to MIME Seed Funding*.

Monash University Research Leads, Associate Professor Sean Cain, from the Faculty of Medicine, Nursing and Health Sciences along with Professor Jon McCormack, from the Faculty of Information Technology, will work with a team of people from Monash Art, Design and Architecture (Professor Daphne Flynn, Dr Rowan Page and Elliot Wilson) to produce a powerful clinical tool that will help overcome unhealthy modern light behaviour.

Historically, we identified day and night via signals from the sun, with light entering our eyes and signalling the master clock in our brain which informed our body of the time of day. These days, we spend most of our time indoors under artificial lighting conditions which is in stark contrast to what we evolved in. We no longer have strong signals for day and night. Our bright days and dark nights that helped our bodies organise the rhythms of activity and repair throughout our bodies have been replaced with an irregular twilight that affects our internal clocks, contributing to chronic disease.

"We are not aware of the damage we are doing to ourselves via our light choices. We evolved to seek light because in our natural history, the only light available was good for us. We now have light whenever we want, at the push of a button. It's like our modern-day ready access to high carbohydrate food; now that we can have it whenever we want, we over-consume. Light is another junk food for the body," said Associate Professor Cain.

"Our unhealthy light behaviour is resulting in chronic diseases such as poor sleep quality, impaired muscle function, insulin resistance or type 2 diabetes, liver disease, depression/mental health issues, cardiovascular disease and/or hypertension," said Associate Professor Cain.

MIME Seed Funding has enabled the redesign of a wearable lightweight sensor prototype that records the impact of different lights (fluorescent, overhead LED, sunset, phone LED) on the body sending feedback to a smartphone. Through app-based modelling, the device can calculate the impact of ambient light on our clock.

Unlike vision, the effects of light on our clock are non-conscious. We are not aware of how confusing our light signals are. Our device essentially makes the unconscious conscious, making us aware of how healthy and unhealthy our light behaviour is," said Professor Cain.

"This device, which is cheap to produce and pinned to clothing close to eye level will provide real-time feedback on light environments while enabling us to guide people towards healthy light cycles. It will be a powerful clinical tool that will reduce chronic disease and help manage circadian rhythms," said Professor Cain.

**This project has since successfully spun out a company, Circadian Health Innovations.*

Acknowledgements

This research project is titled *"The melanopic eye wearable for healthy light exposure"*. The project team includes:

- Professor Sean Cain (Monash University; Medicine, Nursing and Health Sciences)
- Associate Professor Jon McCormack (Monash University; Faculty of IT)
- Dr Andrew Phillips (Monash University; Medicine, Nursing and Health Sciences)
- Professor Daphne Flynn (Monash Art, Design and Architecture)
- Dr Rowan Page (Monash Art, Design and Architecture)
- Elliot Wilson (Monash Art, Design and Architecture).

This project highlights our partnership with Monash University, Faculty of Art, Design and Architecture and was made possible thanks to MIME Seed Funding.

A low-cost reporting tool is to be developed using AI to improve epilepsy diagnosis and management, thanks to Monash Institute of Medical Engineering (MIME) Seed Funding.

Epilepsy affects 80 million people worldwide with more than 150,000 Australians living with the condition. The annual cost associated with epilepsy is over 12 billion dollars.

Diagnosis of epilepsy is classified by brainwave activity (electroencephalography, or EEG). This process is currently done manually. AI offers the potential to automate the analysis and reporting of brainwave activity, to make it not only faster and more accurate, but also able to standardise current EEG reports. This project will develop an EMS, an EEG Management System. It will use cutting edge AI technology to create reliable biomarker detection and sub-categorisation whilst automating and digitalising EEG reporting. It will use online technology to ensure a low-cost, easily accessible, highly secured and user-friendly option for clinicians.

Lead researchers, Dr Hugh Simpson, a neurologist with an interest in AI from Alfred Health and Dr Duong Nhu, a researcher with an interest in epilepsy from the Faculty of Information Technology at Monash University, said using AI in epilepsy diagnosis will result in better treatment outcomes.

“EEG is critical to diagnosis and management in epilepsy. However, the current review process is time consuming, with EEGs getting longer and neurologists able to analyse reports becoming fewer. This situation is only going to get worse as technology progresses and EEGs produce more data. AI can dramatically improve the speed of review whilst dealing with copious amounts of data, ultimately improving patient care for people with epilepsy,” said Dr Nhu.

A further benefit of this project’s technology is accessibility.

“The idea is to make automated EEG analysis a more clinically available tool to help patients get better and faster diagnosis and make the test and the reporting of the test more accessible. This doesn’t exist at the moment,” said Dr Nhu.

“Currently, we are working with clinicians at Alfred Health and have estimated that with our product between $250-$500K on diagnostic costs could be saved. With very few commercially available products in this space, we are excited to develop a unique low-cost alternative to make a real impact in the lives of patients with epilepsy and their treating clinicians,” said Dr Simpson.

The project is currently in the early stages with the view to introduce the project to Alfred Health and The Royal Melbourne Hospital by the end of 2025.

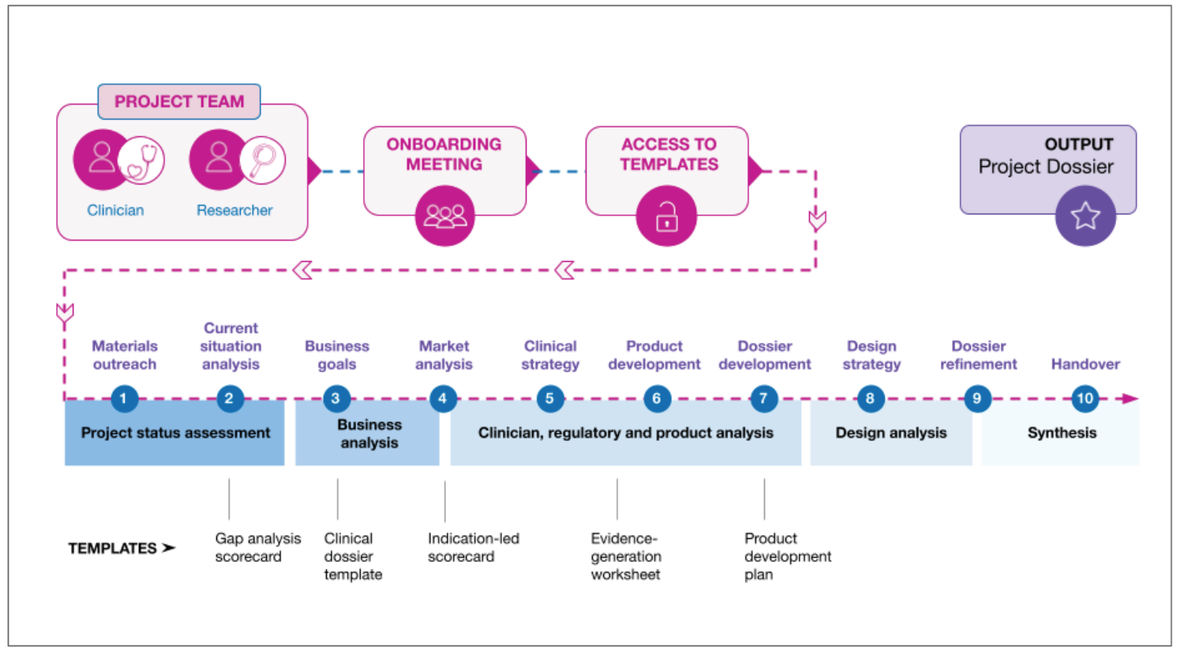
Acknowledgements

This research project is titled *“Next-generation AI-augmented EEG reporting”.* The project team includes:

• Dr Hugh Simpson (Alfred Health)
• Dr Duong Nhu (Monash University; Faculty of Information Technology)
• Associate Professor Levin Kuhlmann (Monash University; Faculty of Information Technology)
• Dr Lubna Shakhatreh (Alfred Health).

This project highlights our partnership with Monash Partners Academic Helath Science Centre and was made possible thanks to MIME Seed Funding.

MEDTECH COMMERCIALISATION ADVANCEMENT PROGRAM (MCAP)



The MedTech Commercialisation Advancement Program (MCAP) pilot is a customised initiative which aims to provide focused assistance to early stage technologies developed by teams of multidisciplinary medical technology innovators from universities and healthcare facilities.

Developed and run by MIME over an 18-month period from June 2022, this pilot program was funded by the Victorian Government through the Australian MedTech Manufacturing Centre.

Six promising MedTech innovator teams were initially selected, focused on the following projects:

- Materials for 3D printing of jaw prosthetics
- Device for monitoring brain oxygenation during cardiopulmonary resuscitation (CPR)
- Nebuliser to be used in hospital emergency settings
- Surgical simulation training device for skills development for ECMO procedures
- Fertility enhancement device employing ultrasound to boost sperm motility
- Pleural decompression device allowing safe decompression of the pleural space following traumatic lung injuries.

The MCAP provided expertise, support, and capability enhancement to both projects and individuals over a 8-10 week period. The program incorporated inputs and skills from business, design, healthcare professionals and experienced MedTech developers, resulting in a detailed curriculum plan and various design, business and commercialisation assets in order to take the projects beyond the ‘plateau’.

The MCAP was successfully completed in 2023, with the outcome being a supportive, reproducible program facilitating translation of early-stage MedTech innovations to the stages where larger grants, investment and increased interest from commercial entities in the space become viable options. The goal of MCAP has been to support projects to move into more advanced stages of commercialisation and real-world healthcare impact, while building a culture of innovation and entrepreneurship.

In 2024, MCAP is being delivered once again for promising innovator teams, and there are plans to further scale the program. MIME looks forward to growing the MCAP program, with continuous refinements based on programmatic insights, for the benefit of our MedTech ecosystem.

OUR MEDTECH SUPPORT OPPORTUNITIES

The Monash Institute of Medical Engineering (MIME) funds and supports projects to co-develop new technological solutions to unmet clinical needs whilst project managing them along the commercialisation pipeline.

Through our funding, MIME fosters extraordinary research-based, community focused, clinician-led, industry-building innovations with the ultimate beneficiary being the Australian community and beyond.

2023/2024 Healthcare Innovation Summer Scholarships (HISS) recipients

In 2023:

- $63M of project-focused grants awarded to a total of 11 grants for projects funded from 2019 onwards (non-exhaustive)
- $300,000 in MIME Seed Funding
- 7 Seed Funded projects to meet unmet clinical needs
- 6 projects with the MedTech Commercialisation Advancement Program
- 6 Healthcare Innovation Summer Scholarships (HISS) including 18 students awarded
- 7 Women in STEMM Student Leader Awards presented

MIME accelerates the development of new medical technologies that address significant unmet clinicals needs. Clinicians of all disciplines work in partnership with IT/digital health, engineering and art/design researchers to discover new medical technologies.

A training model is to be developed to assist clinicians accurately diagnose endometriosis, thanks to Monash Institute of Medical Engineering (MIME) Seed Funding.

Endometriosis is a common chronic debilitating disease that currently affects one in eight women of reproductive age in Australia.

“The condition resulted in 34,200 hospitalisations in Australia in 2016-2017 and the direct and indirect costs for endometriosis are estimated between $7.4 billion and $9.7 billion each year,” said Professor Luk Rombauts from the Department of Women’s Health and Past-President of the World Endometriosis Society.

Diagnosis and treatment represent a major clinical challenge with average diagnosis taking up to seven years. At present, there are no reliable non-invasive diagnostic tools to inform effective treatment or management strategies.

Lead researcher, Dr Rezan Jafary, from the Department of Mechanical and Aerospace Engineering at Monash University, said this project will pave a way forward and provide an accurate ultrasound training simulator for diagnosis training on the detection of deep endometriosis. Through its introduction it will see a reduction in endometriosis surgeries and diagnosis time resulting in a huge cost saving to the economy and an enormous benefit to patients’ mental health.

“Currently patients, Medicare and insurers pay for laparoscopic endometriosis surgeries. These surgeries are considered the gold standard to obtain a confirmed endometriosis diagnosis. In Australia, 30,000 surgeries are performed annually,” said Professor Rombauts.

“Many experts in the field, including our clinical team members, believe that advancements in imaging techniques like transvaginal ultrasound scans can reliably diagnose endometriosis when it’s moderate to severe, and in some cases even when more superficial,” said Professor Rombauts.

“This project will include constructing a physical female pelvic model built from ultrasound compatible materials with accurate internal anatomical structures simulating endometriosis. The model will enable novices to acquire essential skills to be able to navigate through the pelvis region using ultrasound scanning for the correct diagnosis of endometrial tissues,” said Dr Jafary.

The impact of the tool will be significant for clinicians, hospitals and patients.

“The model will be used by hospitals, clinics and imaging centres to train medical staff. It is hoped that, with the correct skills, diagnostic surgeries will reduce to 40% with transvaginal ultrasound,” said Dr Jafary.

“This means 12,000 surgeries will be avoided annually, around $190 million saved over a five-year period and patients will be spared the mental toll of a long diagnosis period,” said Dr Jafary.

The project is currently in its initial phase and will commence developing and building prototypes soon.

Acknowledgements

This research project is titled *“EndoSim-A simulator for endometriosis diagnosis training”.* The project team includes:

• Dr Rezan Jafary (Monash University; Faculty of Engineering)
• Professor Luk Rombauts (Monash University; Medicine, Nursing and Health Sciences)
• Associate Professor Shaun Gregory (Monash University, Faculty of Engineering)
• Dr Reza Nostrati (Monash University, Faculty of Engineering)
• Dr Sofie Piessens (Camberwell Ultrasound for Women).

This project was made possible thanks to MIME Seed Funding.

HISS is a partnership between Monash Young MedTech Innovators (MYMI), Monash Institute of Medical Engineering (MIME) and Monash Partners Academic Health Science Centre, to demonstrate the untapped student innovation ecosystem at Monash University and educate future innovators within healthcare.

The program connects clinicians who seek a technological solution to frontline health problems with high performing undergraduate and masters students from across Monash University motivated to develop new medical technologies. Clinicians and students work together over 12 weeks to evaluate concepts for new technologies and create innovative proof-of-concept prototypes with potential for tangible real-world clinical outcomes.

A new tool to improve hospital communication, collaboration and reporting is being developed thanks to recent project funding supported by the Monash Institute of Medical Engineering (MIME), Monash Partners Academic Health Science Centre and the Monash Young MedTech Innovators (MYMI).

The project is a collaboration between Monash Partners, the Monash Centre for Health Research and Implementation (MCHRI) and Monash Health that will see a centralised database system established to search, find and track the many innovation and improvement projects occurring across wards and hospitals at any given time.

Research lead and Project Chief Executive, Dr Angela Melder said this initiative was long overdue with no channels specifically set up to support communication about projects across different departments within a health service currently available.

“With many quality improvement projects occurring within our hospital system, it becomes unavoidable that projects with similar intentions and methodology arise independently from various departments,” said Dr Melder.

“With no dedicated channel for communication, this results in a duplication of efforts on the same tasks giving rise to inefficiencies within the hospital system due to healthcare staff inadvertently ‘reinventing the wheel’, leading to potentially valuable hours wasted,” said Dr Melder.

To address this will be a cloud-based solution, named “Meta QI”, supported by MCHRI IT, that is easy to access, intuitive, and specifically tailored to the needs of clinicians, health service management improvement leads, and healthcare administration employees in all participating hospitals.The new tool will help health service staff to connect, collaborate, learn from each other and scale up what works.

“It will incorporate data storage, search and visualisation functions, as well as basic reporting and moderating capabilities,” said Dr Melder.

“It is a solution that is usable, valuable and sustainable with capacity for scale-up to facilitate and support a learning health system.

“Implementation of MetaQI is expected to provide important opportunities for information sharing and increased awareness of innovation of improvement work across the Monash Partners network,” said Dr Melder.

Acknowledgements

This research project is titled *“Project Meta - Monash Partners meta QI register”*. The project team includes:

• Dr Angela Melder (MCHRI, Monash Partners)
• Ms Joanna Ong (Monash Partners)
• Ms Susanne Baker (MCHRI Monash University, Medicine, Nursing and Health Sciences)

This project was made possible thanks to a Healthcare Innovation Summer Scholarship (HISS).

The Monash Institute of Medical Engineering (MIME) is committed to creating more opportunities for women across healthcare and medical technology innovation. Diversity is essential as we lead the discovery, creation and translation of technologies that will improve human health.

In 2023, MIME held the Monash Institute of Medical Engineering (MIME) Women in STEMM Student Leader Awards. These aim to recognise, celebrate and support women students at Monash University who are contributing to innovation in healthcare and medical technologies.

Seven awards were awarded with successful undergraduate/postgraduate students receiving $1,000 to support their studies and exclusive invitations to participate in a series of MIME networking opportunities throughout 2024.

We congratulate our following awardees for 2023.

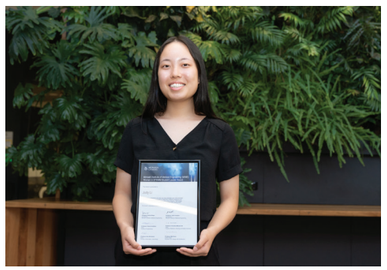
Meagan Roff
Undergraduate
Medicine, Nursing and Health Sciences
MORE

Nina Langer
PhD candidate
Engineering
MORE

Yvonne Strover
Undergraduate
Art, Design and Architecture and Engineering
MORE

Sabrina Meikle
PhD candidate
Engineering
MORE

Belinda Routley
PhD Candidate
Art, Design and Architecture
MORE



Judi Li
Undergraduate
Engineering and Medicine, Nursing and Health Sciences
MORE

Pranita Shrestha
PhD candidate
Information Technology
MORE

In September 2023, MIME held its Symposium focused on a selection of the best of MIME's work to drive change in clinical practice through innovation and technology.

We highlighted our programs and project teams leading the way to move clinical-led unmet needs into viable products, whilst diverse experts in MedTech translation, commercialisation and industry discussed challenges, barriers and enablers, to achieving success.

Keynote speakers and panellists included:

- Professor Andreas Fouras, award winning scientist and Founder of 4DMedical
- Shelley Jackson, Director, Australian MedTech Manufacturing Centre (AMMC)
- Robert Crowder, General Manager, Advisory Services; Procept
- Michelle Gallaher, Digital health entrepreneur and founder of TrialKey, Opin.AI and Opyl Ltd
- Dr Jing Jing Li, Senior Research Fellow, Team Lead, Health Technology Assessment: Monash Centre for Health Economics
- Dr Charlotte Williams, Principal Research Scientist and Group Leader: Chemical Biology, Diagnostics & Devices; CSIRO Manufacturing
- Louise Niggemeyer, Clinical Nurse Consultant and Clinical Product Advisor; Peninsula Health.

Thank you to all who joined us for an entertaining and educational afternoon of all things MedTech@Monash!

Missed the event? Watch the recordings HERE.

MIME has an exciting year planned for 2024, through undertaking the most significant reinvigoration of our program to date, including:

- Launching new learning, development, advisory and funding opportunities in the form of online resources, workshops, courses and consultations to better serve our stakeholders to increase the likelihood of success,
- Continuing to expand our community outreach through industry collaboration, and
- Strengthening partnerships with like-minded institutes, centres, hospitals and universities in the Victorian MedTech ecosystem.

Visit monash.edu/mime to know more.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monash.edu/mime