

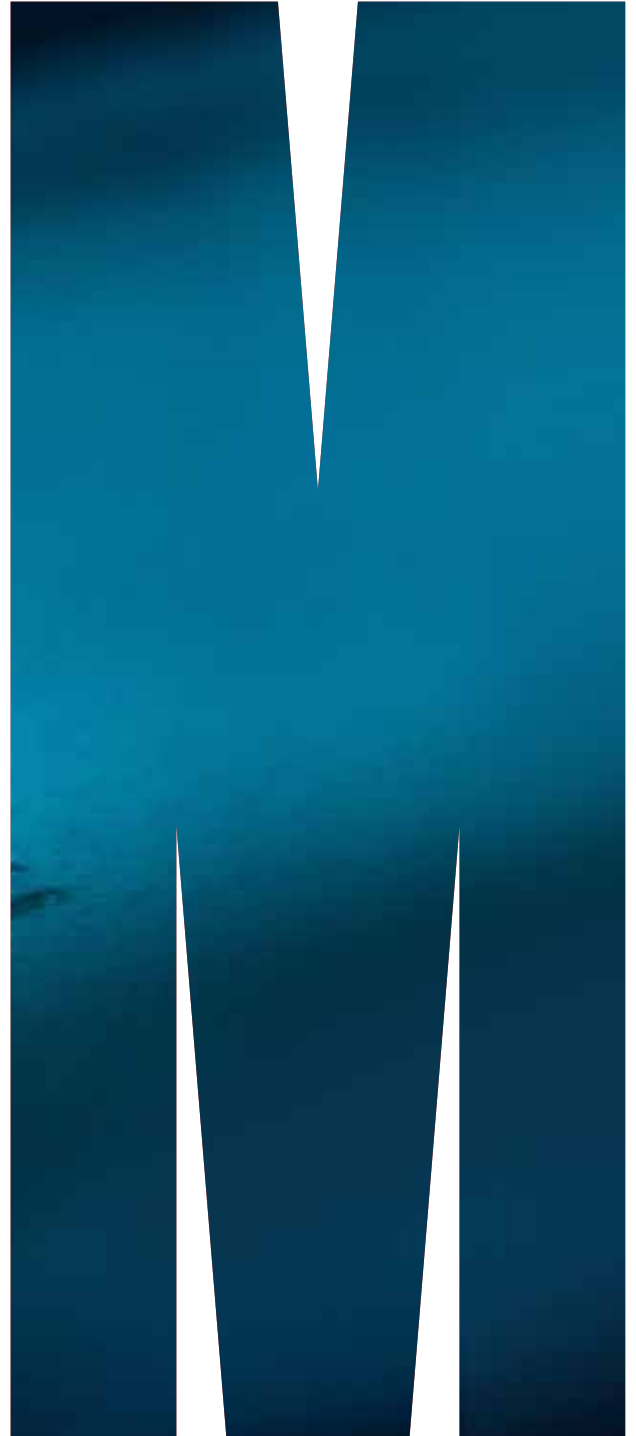


MONASH  
University

# ENGINEERING CHANGE

2019 - 2024

MONASH  
ENGINEERING



# DEAN'S MESSAGE

Engineers are needed more than ever. As makers and creators who turn raw ideas into real solutions, we have the capability and responsibility to imagine, design and build a safer, more sustainable world for the future.

Time is running out to achieve the United Nations' 2030 Agenda for Sustainable Development, including the 17 Sustainable Development Goals. As engineers, we must act now to deliver on the goals of affordable and clean energy, sustainable cities and communities, clean water and sanitation, zero hunger and more.

Everyone is welcome to contribute. We need diverse people, cultures, voices, abilities and ideas to come up with the best solutions for the planet. We especially invite women and girls to join our profession, fairly and equally.

As part of Australia's largest university, we have a powerful role to play in supporting industry, researchers, students and alumni to achieve our common goals. We each have a unique and valuable contribution to make, and by working together, we can engineer real change.

**Professor Elizabeth Croft**

*Dean, Faculty of Engineering*



# OUR AMBITION

Monash Engineering is globally renowned for developing creative technical solutions that transform our world. Distinguished by our inclusive, international and enterprising culture, Monash Engineering continually strives to deliver the best engineering education and research for Australia and the world.

“

The world operates on engineering systems - our smartphones, the Internet, the trillions of dollars that change hands every day, the systems of transport and logistics that bring food to most of the world on a daily basis, the systems that make tap water safe to drink, the sewerage systems that prevent diseases spreading in our urban areas.

We can think about sustainable development - ending the climate crisis, protecting biodiversity, ensuring that every child is in school and everyone has access to healthcare - as an absolutely pragmatic engineering task.”

**Professor Jeffrey Sachs**

*Director, UN Sustainable Development Solutions Network,  
Sustainable Development Goals Advocate  
for the UN Secretary-General,  
Monash University Honorary Doctorate.*





# OUR COMMITMENTS

## As educators, we:

- Graduate future leaders ready for international careers
- Model an engineering culture that promotes integrity, excellence, collaboration, collegiality, creativity, and diversity
- Use the best technical and pedagogically-advanced teaching methods
- Continually advance the excellence, quality, and impact of our teaching
- Offer career-enhancing study options for lifelong learners.

EDUCATION

## As researchers, we:

- Transform our society and economy through creative thinking and design
- Embody courage, originality, creative freedom, independence and leadership
- Value strategic and empowered risk-taking
- Contribute to a premium research and learning ecosystem.

RESEARCH

## As collaborators, we:

- Generously engage with our industry partners and wider networks
- Connect across the wider Monash University community, including our colleagues in Malaysia, China and India
- Build strong alliances with the world's best universities
- Support global efforts to achieve the UN Sustainable Development Goals.

PARTNERSHIPS

## As colleagues, we:

- Foster a diverse, inclusive and inviting community
- Create a culture of respect and scholarly generosity
- Trust each other's abilities and value their time, support and expertise
- Encourage and value personal and professional growth
- Communicate and engage respectfully with everyone
- Act collectively in the best interests of society with the highest ethical standards.

CULTURE



# OUR STUDENT EXPERIENCE





Our students thrive within our rich learning culture. Student clubs and teams facilitate cross-disciplinary learning, friendships and opportunities to compete on a national and an international scale.

## OUR STUDENT EXPERIENCE

Capable and focused, our students thrive within our rich learning culture. We challenge, nurture and inspire them to reach their full potential as professional engineers and as people. With their substantial industry experience and entrepreneurial mindset, our students graduate with high-level employability, ready to practice as ethically-conscious ambassadors for the engineering profession.

Our student clubs and project teams facilitate cross-disciplinary learning, friendships and opportunities to compete on a national and international scale. Our leadership, professional development, industry engagement and international

exchange programs thoroughly prepare our students for the local and global workforce. We support lifelong learning and career enhancement through our masters, PhD and other courses, ensuring that we stay Australia's leading institution for engineering education at every career stage.

We invest in physical learning and teaching spaces that are designed to accommodate and promote new styles of learning for our students. We build interdisciplinary and entrepreneurial spaces where people are free to explore, design, construct, investigate and create new ideas. Our students all feel welcome and safe in our physical environment.



## GOAL 1

### Deliver an exceptional student experience.

- Action 1** Recruit the best students who bring the right mix of energy, ambition and diversity, with a focus on increasing the number of women enrolled in our courses.
- Action 2** Facilitate semester student exchanges with top international engineering schools.
- Action 3** Provide the infrastructure to support extra-curricular teamwork, student clubs, entrepreneurial activity and engagement with professional associations.
- Action 4** Support cross-disciplinary student teams that provide opportunities to develop technical and non-technical work skills.
- Action 5** Provide undergraduate students with continual insights into their potential career pathways.

## GOAL 2

### Increase the prominence and pervasiveness of engineering design across our educational offerings.

- Action 1** Promote human-centred design concepts throughout our undergraduate and postgraduate courses.
- Action 2** Establish an Engineering Design Institute which brings together people, facilities and partners to explore new design practices.





### GOAL 3

Develop contemporary industry-based learning and co-curricular offerings that increase student skills, entrepreneurial activity and job readiness.

- Action 1** Introduce a Co-operative Education Program that offers employability skills training and work placements.
- Action 2** Build strong industry partnerships to create more opportunities for work integrated learning.
- Action 3** Partner across the university to enable entrepreneurship learning opportunities and activities.

### GOAL 4

Encourage lifelong career development approaches.

- Action 1** Teach students the value of continuous learning and development to their employability and future professional capability.
- Action 2** Develop course offerings attractive and valuable to industry, including micro-credentials and new contemporary masters courses.



## OUR RESEARCH IMPACT

With our focus on water and energy, mining and resources, biomedical technology, infrastructure, materials and advanced manufacturing, defence, automation and robotics, and food and agriculture, we contribute technological solutions that directly address the UN Sustainable Development Goals.

We support, reward and celebrate research excellence, and encourage everyone to work in partnership across disciplines and industries. We recruit the best talent for our PhD programs and prepare students for rewarding careers with a mindset geared towards calculated risk-taking, multi-disciplinary engagement, entrepreneurship and ethical practice.

We find ways to strengthen and support our wider industry network. We proactively discover current industry needs and respond with the best of our research and educational capability. We ambitiously seek research funding to achieve our common goals. As a result, our researchers excel and achieve at the highest levels. Through their success, we create fundamental new knowledge that drives industry innovation further forward and contributes solutions to global sustainability efforts.

## GOAL 1

**Redefine our research measures to ensure diversity and impact.**

- Action 1** Develop new academic research performance standards that recognise and value the breadth of research activities and ambitions across the faculty.
- Action 2** Provide the facilities, mentorship and support needed for researchers to pursue large-scale, high-risk and international strategic research initiatives.



## GOAL 2

### Actively recruit and support high-quality PhD students.

- Action 1** Improve the PhD student cohort by recruiting top talent locally and internationally, particularly through partnerships and co-supervision agreements with other top international universities.
- Action 2** Ensure the postgraduate student assessment model is focused on research quality aligned with our academic performance standards.
- Action 3** Combine high-quality supervision with taught components that further develop students' entrepreneurial and commercialisation skills.

## GOAL 3

### Promote and facilitate multidisciplinary research and industry collaboration.

- Action 1** Establish and proactively support interdisciplinary research clusters and faculty platforms that are aligned with industry, government and the community.
- Action 2** Encourage entrepreneurial activity by protecting newly-created intellectual property and founding spin-off companies.

We contribute technological solutions that directly address the UN Sustainable Development Goals.



# OUR PARTNERSHIPS







We work widely across disciplines and industries with a clear intention to create the greatest impact for good in the world.

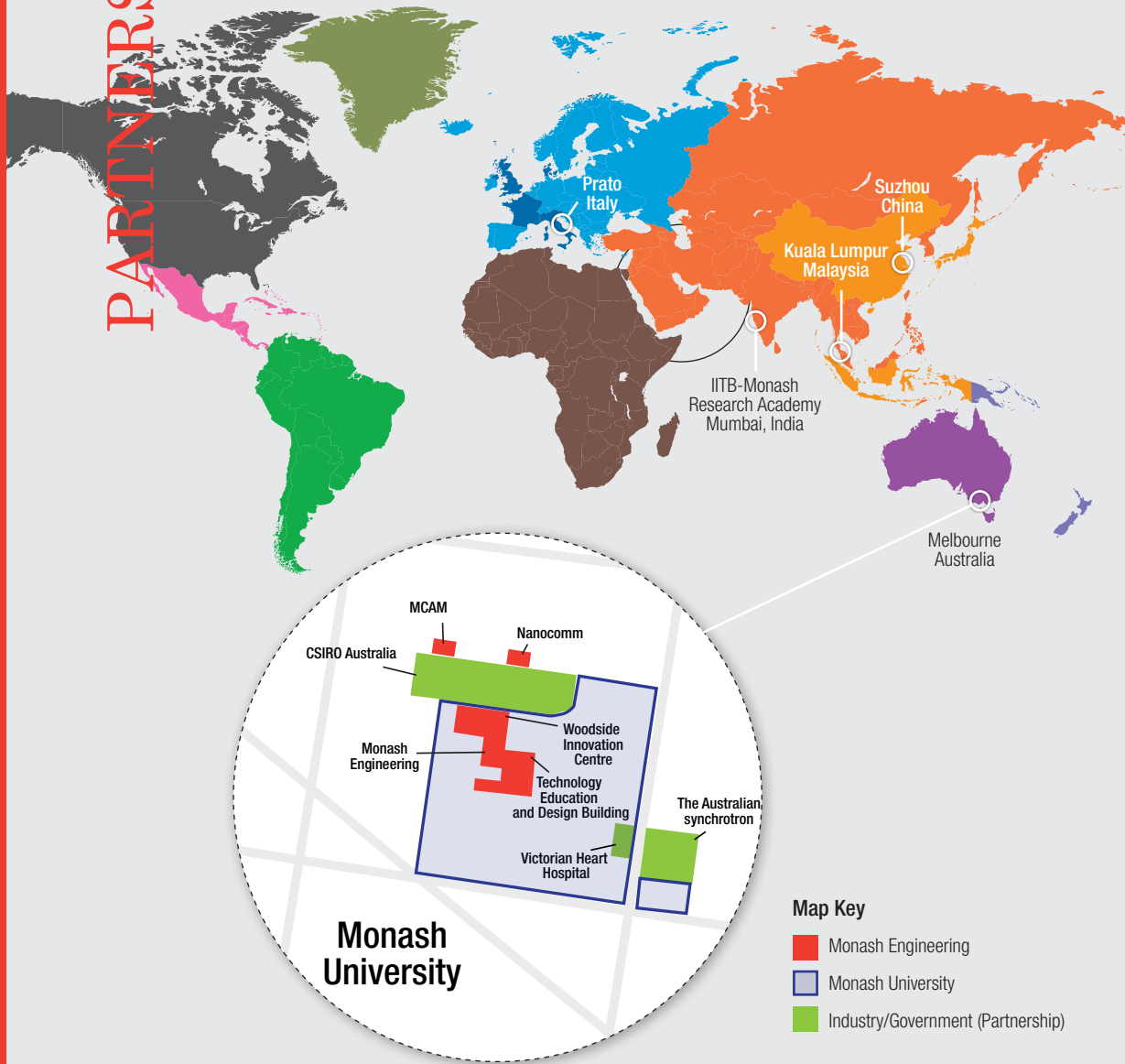
## OUR PARTNERSHIPS

From our home in the centre of the Monash innovation precinct, we easily connect with our collaborators in CSIRO and other scientific research centres, along with the cluster of surrounding technological and manufacturing enterprises. We add research and educational strength to the entrepreneurial culture of our surrounds, generously sharing our capabilities while being inspired in return by the capability of our industry collaborators.

We work widely across disciplines and industries with a clear intention to create the greatest impact for good in the world. We match our research strengths to real industry needs, and provide technological solutions that deliver tangible benefits to industry and the wider economy. We commercialise our research output, helping to create the jobs and industries needed to build a better future.

Our desire to contribute to global sustainability efforts drives us to seek international alliances and opportunities. Our strong international reputation and presence make us a visible and attractive destination for international academic and industry leaders. We connect with our Monash Malaysia colleagues, and those across the wider international Monash University network. We actively engage with our extensive global network of over 26,000 Monash Engineering alumni.

Monash University network



GOAL 1

Create an international innovation community.

- Action 1** Develop strong partnerships with other top international engineering schools through undergraduate student exchange, graduate programs, and two-way staff sabbaticals.
- Action 2** Build and strengthen alumni networks through clear communication, mentoring programs, awards and opportunities to engage with our teaching and research programs, industry collaborations and philanthropic efforts.
- Action 3** Collaborate with government, industry and the community, across the Monash innovation precinct and internationally, to offer our best contributions to global sustainability efforts.



## GOAL 2

**Foster collaboration opportunities across the faculty and wider university.**

- Action 1** Prioritise clear communication of our objectives and goals with our colleagues.
- Action 2** Foster new partnerships and collaborations with other Monash University faculties to create interdisciplinary education and research opportunities.
- Action 3** Deepen collaboration across the international Monash University network to generate mutually beneficial opportunities.

## GOAL 3

**Develop an Engineering Precinct plan that facilitates interdisciplinary research, best-practice pedagogy and collaborative entrepreneurial activities.**

- Action 1** Maximise the engineering design learning opportunities offered by the new Technology Education and Design Building.
- Action 2** Continue to invest in new technology and facilities to aid teaching and research and to attract co-location of industry and university partners.
- Action 3** Work together to develop shared resources, equipment and facilities.
- Action 4** Open a shared facility for student design projects and entrepreneurial activity.



# OUR EMPOWERING CULTURE

## OUR EMPOWERING CULTURE

Everyone is encouraged and supported to make their own unique, valuable contribution to creating a better, more sustainable world.

Our students develop into creative technical problem-solvers and human-centred designers who graduate capable of working at the highest international standards. Our researchers and academics pursue the limits of scientific discovery to find the best solutions, and develop collaborative and entrepreneurial partnerships across industry, government and not-for-profit sectors. Our professional staff are inspired to deliver their best efforts to support our overall goals and ambition.

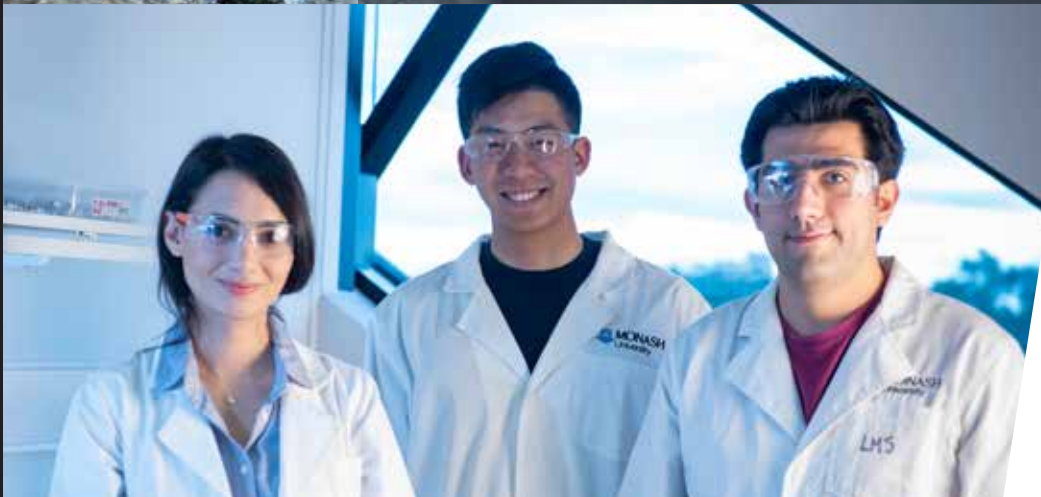
Our reach across the scientific, technological and entrepreneurial ecosystem is broad and influential, with many of Australia's most celebrated engineers counted as our alumni.

We believe in diversity and inclusivity. We invite girls and women to choose engineering careers in industry and research, and support them to manage the unique challenges they face. We search worldwide for the best staff, and along with our international students, welcome the diversity of cultural experiences they bring. We actively encourage diversity of choice, experience and ability.

## GOAL 1

### Promote the professional and personal development of all staff.

- Action 1** Create a talent enhancement and future leaders program to help academic and professional staff maximise their potential at all stages of their career.
- Action 2** Offer support opportunities to emerging and established researchers who are demonstrating excellence.
- Action 3** Develop active communities to drive improvement and transfer best practice.
- Action 4** Increase respect and appreciation for all contributions through improved communication.





## GOAL 2

Foster a diverse, inclusive, supportive and generous culture.

- Action 1** Explicitly encourage a culture where all people are heard, their ideas valued and their successes celebrated.
- Action 2** Retain a strong focus on all types of staff and student diversity, and articulate clear and practical strategies to ensure that diversity is encouraged and supported.
- Action 3** Recognise good leadership and offer opportunities for mentoring.

## GOAL 3

Attract and retain the world's finest staff and students.

- Action 1** Develop and promote staff and student value propositions that inspire top global talent to choose Monash Engineering.
- Action 2** Creating learning and mentoring networks that genuinely support people to reach their full potential.
- Action 3** Proudly share our research success and expertise with our wider networks and the general public.



Everyone is encouraged and supported to make their own unique, valuable contribution to creating a better, more sustainable world.





“

I bow to all engineers. Engineers make the world work. They don't always get the glory, but they are the ones that actually make the world economy work. Without engineering, there's nothing.”

**Professor Jeffrey Sachs**

Director, UN Sustainable Development Solutions Network,  
Sustainable Development Goals Advocate for the UN Secretary-General,  
Monash University Honorary Doctorate.

*A New Age of Sustainable Development - Australia, Asia and The World  
Public lecture, Monash Sustainable Development Network, October 2018*



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University

## **CONTACT US**

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