DEFENCE TRAILBLAZER
CONCEPT TO SOVEREIGN CAPABILITY

INNOVATION SUMMIT 2025

Supporting university-industry collaboration to drive innovation

dtb.solutions/innovation-summit

DEFENCE TRAILBLAZER
CONCEPT TO SOVEREIGN CAPABILITY

A COLLABORATIVE PARTNERSHIP BETWEEN

THE UNIVERSITY of ADELAIDE | UNSW

The Defence Trailblazer is a once in a generation opportunity to strengthen the collaboration between defence, academia, and industry while accelerating research and commercialisation.

In partnership with the University of Adelaide (UoA), the University of New South Wales (UNSW), and more than 90 industry partners, and with the support of the Department of Education, the initiative will skill the workforce of the future, support Defence-focussed innovation, and play a leading role in accelerating the delivery of sovereign capabilities for the nation's security and prosperity.

The Defence Trailblazer is proud to host the Innovation Summit and extends a very warm welcome.

WELCOME TO THE DEFENCE TRAILBLAZER INNOVATION SUMMIT

Dr Sanjay Mazumdar
Executive Director, Defence Trailblazer

There have been several reports in recent years about the importance of industry-university collaborations and commercialisation of the resulting IP to accelerate business growth and, ultimately, growth of the Australian economy. Many of these reports point to the fact that Australia is a strong research performer, but we fall well behind other countries when it comes to the translation and commercialisation of this research. This is one of the reasons that Australia performs poorly when it comes to the Economic Complexity Indicator[1] (ECI) which is a measure of an economy's diversity and ability to be resilient to changes in circumstances. In fact, in 2021 Australia was ranked 93rd out of the 133 countries included in the Economic Complexity Indicator (ECI) ranking. The recent report released by Industry Innovation and Science Australia[2] (IISA) highlights a number of factors for this poor performance including:

- the nature and structure of the Australian industrial base – we are a nation of small-to-medium businesses (SMBs), with a significantly larger number of small businesses rather than medium sized businesses (this is referred to as the "missing middle" in the IISA paper);
- inefficiencies in the innovation processes; and
- a misalignment of incentives between the commercial and research sectors;
- a lack of standardisation of commercially focussed metrics for innovation activities – the old idiom "you get what you measure" is very true in the innovation sector.

1 Harvard Growth Lab, *Economic Complexity Index*, 2024
2 Industry Innovation and Science Australia, *Barriers to collaboration and commercialisation*, 2023

These challenges have been recognised by the Commonwealth Government and are the drivers behind initiatives such as the Trailblazer Universities Program, Australia's Economic Accelerator and the Strategic Examination of Research and Development.

My own experience, having spent more than 30 years at the "pointy end of innovation", mirrors many of the findings in the existing reports, but also highlights some additional factors, namely:

- like all relationships, understanding each other's motivations, constraints and barriers is critical to success;
- there is a misunderstanding of the complexity involved in developing a commercially viable product and all the additional activities that need to take place beyond the research in the product development lifecycle; and
- there is a lack of understanding of the benefits and costs of undertaking R&D, both for a business and for a university.

To that end, we have designed the Defence Trailblazer Innovation Summit to unpack these issues, and importantly, help design solutions so that Australia can become a powerhouse of both research performance, and importantly, research commercialisation. I hope you enjoy the program of speakers and roundtable discussions and thank you for your participation in this event.

Dr Sanjay Mazumdar

THE CHALLENGE

The Defence Trailblazer Innovation Summit offers an important opportunity to map out a better future for the successful commercialisation of Australia's most innovative ideas and research outcomes.

While Australia has a strong history of innovation, our record in moving breakthrough and innovative research into real-world products, processes and industries has been flagging.

Analysis of the roadblocks to innovation has repeatedly outlined core structural and cultural issues for researchers, industry, and entrepreneurs.

Clearly there needs to be a more strategic approach, from investment in the core skills that build talented innovative societies, right through to building a culture that values and backs new ideas and the pipeline that supports their development.

Working within that context, this Summit, including its select and strategic group of participants, are faced with a challenge – how do we remove the barriers to commercialisation in Australia?

Bringing together leading researchers, executives, industry, and university players, the Summit presents the opportunity to look at the issues from all sides to understand academia-business needs; explore an ideal future state of collaboration and propose a roadmap for long lasting change.

UNIVERSITY OF ADELAIDE COMMERCIALISATION ACHIEVEMENTS 2024

69
Invention disclosures

35
Technologies licenced

18
New patents filed

22
Projects supported
via proof of concept funding

QUANTXLABS PTY LTD

From innovative research to successful business, QuantX Labs are leading the way when it comes to successful collaborations.

From its origins as a University of Adelaide spin-out, QuantX Labs Pty Ltd has emerged as a key global player in the field of precision timing and quantum sensing.

Now a leading Australian company specialising in high-precision timing and quantum sensor technologies, it evolved from 20 years of groundbreaking research and development by Professor Andre Luiten and Adjunct Professor John Hartnett, first at the University of Western Australia and later at the University of Adelaide's Institute for Photonics and Advanced Sensing (IPAS).

The Professors established their company in 2016 to commercialise their Sapphire Clock technology, under the name Cryoclock. Renamed QuantX Labs in 2019, the company expanded into commercialising advanced photonics and sensing technologies developed within the University of Adelaide.

Since then, the Commercialisation Office at the University of Adelaide has supported QuantX Labs with research and development activities and securing essential IP. The Office also supported the transfer of IP from the University of Western Australia to ensure the founding Professors had freedom to operate.

As QuantX Labs' flagship product, the Cryoclock, demonstrates the successful translation of academic research into a commercial technology. The technology delivers exceptionally pure radio frequency signals, enhancing the capabilities of radar systems.

Today, in partnership with BAE Systems, it is being developed for integration into Australia's Jindalee Operational Radar Network (JORN) as part of a $1.2 billion upgrade that will significantly improve the radar network.

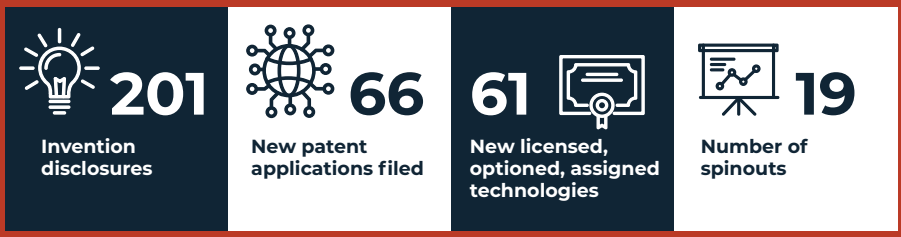
quantxlabs.com

QuantX Labs continues to maintain a strong partnership with the University of Adelaide. In October 2024, it formed a strategic collaboration under the Defence Trailblazer program to develop atomic clock technology further, aiming to exceed current industry standards and enhance navigation networks.

The strength of its ongoing relationship with the University of Adelaide has allowed QuantX Labs to leverage academic expertise and University of Adelaide intellectual property to drive technological advancements with real-world applications.

QUANTX LABS

UNIVERSITY OF NEW SOUTH WALES COMMERCIALISATON ACHIEVEMENTS 2024



STELA – A UNSW SDI SUCCESS STORY

Leading Australian dental technology company, SDI Limited in collaboration with UNSW Sydney has successfully developed a new dental composite material now sold globally as an alternative to amalgam fillings.

This significant breakthrough in dental care grew from a highly effective partnership led by Scientia Professor Gangadhara Prusty through an Australian Research Council Linkage and CRC-funded project that set out to solve one of the industry's major challenges – developing a healthier alternative to amalgam fillings.

The product, known as Stela, is delivering safer, faster, healthier, stronger, and more efficient dental restoration for dental patients around the world.

Leveraging UNSW's cutting-edge research capabilities, within months of the project's completion in 2023, SDI launched Stela onto the market. The product has quickly gained international traction, with demand outpacing supply in key markets across Europe, Asia, and North America.

With governments and health organisations pushing for safer mercury-free restoratives, the partnership between SDI and UNSW brought together industry expertise and research power to tackle the problem head on.

Professor Prusty and his team at UNSW Engineering explored a range of biocompatible materials, conducting rigorous testing in UNSW's world-class labs to ensure the new product maintained the mechanical, physical and handling properties necessary for long-lasting dental care.

After several prototypes and extensive clinical trials, the research team discovered a novel compound with a similar durability as amalgam that could be delivered to the market quickly.

SDI's new line of dental restoration products has won innovation and research awards from major international dental organisations in North America, Europe and Australia. Stela's success has accelerated SDI's growth, prompting the expansion of its production facilities to meet global demand and the collaboration with UNSW has solidified the company's leadership in dental materials innovation.

Today this successful collaboration has evolved and plans to launch more products are in the pipeline.

sdi.com.au

SDI | YOUR SMILE. OUR VISION.

PROGRAM AGENDA

9.30 – 10.00	Participant registration	
10.00 – 10.15	Welcome, opening remarks and establishing connections	Petr Adamek, CBRIN
10.15 – 10.20	Setting the scene – collaboration challenges and an opportunity for change	Heather Nicoll, Defence Trailblazer

SESSION 1:
FUNDAMENTALS OF COLLABORATION

10.20 – 11.00	Panel discussion **Innovation Perspectives - trust, empathy and understanding business needs** What human and other factors support university-industry collaborations to succeed, and how are they achieved?	**Moderator:** Dr Sanjay Mazumdar, Defence Trailblazer **Panellists:** Dr Michelle Perugini, UniSA Ventures Dr Dimity Dornan, AO, Bionics Gamechangers Duane Rivett, Fivecast Paul Daly, Defence Trailblazer
11.00 – 11.30	Break	

SESSION 2:
THE ART AND SCIENCE OF COLLABORATION

What are the tangible and intangible elements of successful collaborations, and how are they achieved in complex contexts?

11.30 – 11.45	In conversation with Anne-Marie Perret & Dr Ariella Helfgott	Anne-Marie Perret, ACTivate Capital Dr Ariella Helfgott, World Energy Council
11.45 – 12.45	Roundtable discussion	
12.45 – 13.30	Lunch	

SESSION 3:
THE MECHANICS OF COLLABORATION

What improvements, changes and actions should be prioritised to achieve frictionless and effective future university-industry collaborations?

13.30 – 13.45	Session opening	Professor Sharath Sriram, Science & Technology Australia
13.45 – 14.45	Roundtable discussion	
14.45 – 15.00	Final comments, closing remarks and thank you	Petr Adamek
15.00 – 16.00	Networking and drinks	

SESSION 1:
FUNDAMENTALS OF COLLABORATION

"You cannot shake hands with a clenched fist." — Indira Gandhi

While industry and universities have different missions, they also have complementary capabilities. Together they can nurture highly skilled current and future workforces, carry out research and development that benefits societies, and translate early-stage technologies for commercial outcomes. Effective university-industry collaborations are often the product of experience, networks, and relationships built over several years.

Australian examples include:

- the Gardasil HPV vaccine, a collaboration between CSL and the University of Queensland;
- UNSW's partnership with Maoneng Australia (now GMR Energy) and Origin Energy to drive greater renewable energy procurement, leveraging UNSW's position at the forefront of solar photovoltaic (PV) technology globally;
- the development of EmbryoGen ® by the University of Adelaide and Danish company Origio to improve IVF outcomes for families.

What human and other factors support university-industry collaborations to succeed, and how are they achieved?

SESSION 2:
THE ART AND SCIENCE OF COLLABORATION

"It is the long history of humankind (and animal kind, too) that those who learned to collaborate and improvise most effectively have prevailed." — Charles Darwin

How can we build the kind of goodwill, trust, shared goals and effective communication that delivers effective and productive collaborations in the short term, and impactful and mutually beneficial relationships for the long term?

If successful collaborations across sectors is the foundation for innovation, then what are the tangible and intangible elements that should be considered?

SESSION 3:
THE MECHANICS OF COLLABORATION

"Creativity is thinking up new things. Innovation is doing new things." — Theodore Levitt

In any innovative process there will be obstacles, failures, and misalignments. Strong leadership and a clear vision for desired outcomes are the just the beginning, how innovators cope with those stumbling blocks can make all the difference. If we know what the current inhibitors are for successful collaboration, then why do we remain in our current state?

What improvements, changes and actions should be prioritised to achieve frictionless and effective future university-industry collaborations across the innovation cycle from concept to market and beyond?

INVITED PRESENTERS

INNOVATION SUMMIT FACILITATOR

Petr Adámek

CEO, Canberra Innovation Network

Petr is an innovation and business growth expert and CEO of the Canberra Innovation Network where he provides strategic leadership and management of program delivery. He is passiontate about supporting innovation, building innovation communities, smart economic development, business incubation and growth programs, clusters and innovation networks. In these areas Petr has 30 years of international experience that have seen him provide assistance to companies and communities across Europe, New Zealand and Australia.

PANEL MODERATOR

Dr Sanjay Mazumdar

Executive Director, Defence Trailblazer

Sanjay is a proven chief executive and board director who has over 30 years of experience in the defence, national security and ICT sectors. Sanjay is the Executive Director (Chief Executive) of the Defence Trailblazer, a $200+ million enterprise comprising 40+ industry partners, the University of Adelaide and UNSW, with funding from the Australian Government through the Trailblazer Universities Program.

Sanjay's previous roles include Partner and Chief Data Officer at KPMG Australia, CEO of the Data to Decisions (D2D) CRC and founding director of the D2D CRC's spinout companies – Fivecast and NQRY.

Dr Michelle Perugini

Head of Commercialisation and CEO of UniSA Ventures, University of South Australia

Michelle is an entrepreneur and AI leader with deep expertise in healthcare. She has a PhD in Medicine, a decade of oncology research experience, and has founded two global AI tech companies—one acquired by EY in 2015. As Co-Founder and former CEO of Presagen, she developed a Federated AI platform for medical data, with its flagship product, Life Whisperer, improving IVF outcomes before being acquired by Astec in 2024. She is now Co-Founder and Board Chair of Qubigen, focusing on AI-driven drug design, and serves as Head of Commercialisation and CEO of UniSA Ventures.

Dr Dimity Dornan, AO

Co-Founder, Chair and Board Director, Bionics Gamechangers Australia

Dimity is a social entrepreneur, bionics advocate, speech pathologist and researcher who has been recognised nationally and internationally for the impact of her work. Her experience across sectors has seen her found a number of national and global research collaborations as well as Hear and Say WorldWide global professional training.

Duane Rivett

Co-Founder & VP Strategic Growth, Fivecast

Duane has more than 20-years of experience in research, commercialisation, and tech start-up sector. Duane is a co-founder and VP Strategic Growth at Fivecast, a world leading provider of digital intelligence solutions, used and trusted by leading defence, national security, law enforcement, corporate security, and financial intelligence organisations around the world.

Paul Daly

Entrepreneurship Program Manager, Defence Trailblazer

Paul has extensive experience in starting and growing technology ventures, supporting and enabling startups, providing commercialisation services for technology ventures, industry and economic development, and development of entrepreneurial ecosystems.

He is adept at building collaborative relationships with a clear focus on purpose to achieve robust commercial, environmental and social outcomes.

Anne-Marie Perret

Director, Skykraft
Director, ACTivate Capital

Anne-Marie's corporate roles span a wide range of industries from life sciences, advanced manufacturing, renewable energy, IT, Defence and Space.

As an experienced adviser and mentor Anne-Marie assists high-growth technology clients with their governance and growth.

Dr Ariella Helfgott

Director of Foresight and Strategic Learning, World Energy Council

With more than 20 years of experience in enabling future-focused dialogues, collaboration, and systemic change across 26 countries, Ariella's work focuses on co-creating sustainable, equitable, healthy, and prosperous futures—locally, nationally, and globally.

As Director of Foresight and Strategic Learning in its global secretariat, at the World Energy Council, and Director SA Futures Agency and Collaborative Futures, Ariella's work centres on advancing vital conversations and actions to transform our energy societies and economies in the face of climate change.

Professor Sharath Sriram

President, Science & Technology Australia

Director, Discovery to Device Facility, RMIT University

As a start-up superstar, research leader, mentor and science policy contributor Sharath has a deep understanding of the drivers for commercialisation success. His expertise in creating and delivering breakthrough technologies in nanoelectronics, sensors, and medical technologies has seen him bring science fiction to reality.

PROGRAM AGENDA
NOTES:

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A COLLABORATIVE PARTNERSHIP BETWEEN

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