COGNITIO

AN ARCS AUSTRALIA LTD PUBLICATION FOR MEDTECH, BIOTECH AND PHARMACEUTICAL SECTOR PROFESSIONALS

BIOBEACON

SPECIAL EDITION

UPDATE FROM THE 2024 & 2025 COHORTS

ARCS AUSTRALIA

BIOBEACON SPECIAL EDITION
ISSUE NUMBER 59
ISSN 2208 -1607

Are you practising good copyright governance?

As a medical or pharmaceutical professional, integrity and compliance is critical in all the work you do.

As scientific literature, industry news, figures, tables and graphs help you achieve your objectives, having the right permission to disseminate copyright content is not just good copyright governance, but also ensures you are acting ethically and legally.

A Copyright Agency Annual Licence is a cost-effective way your company can legally reuse content created by others, and be confident that creators are being compensated for their work.

Tailored to your industry, our Licence gives you the right to copy and share hard copy and digital content including:

- Key life science journals from publishers such as Elsevier, Wiley-Blackwell and Wolters Kluwer
- Newspapers and magazines from around the world
- Clinical and research papers, graphs, tables, market research data, competitive analysis and more.

Getting your licence is easy

Copyright Agency offers a bespoke licensing solution for life science industries.

Contact our team on 1800 066 844 or email licence.enquiries@copyright.com.au for a customised quote.

CONTENTS

Arthur Brandwood FMPP
ARCS Chair

Catalysing Innovation for Global Impact

Innovation in Australia's life sciences sector does not fail for lack of ideas; it fails when promising concepts are not translated into products that deliver real clinical value. Bridging that gap requires structure, discipline, and early clarity on regulatory and commercial pathways. BioBeacon was established with that purpose: to identify ventures with credible global potential and to support them at the point where informed guidance and access to the right networks make a decisive difference.

ARCS' role extends beyond professional education. Through initiatives such as BioBeacon, we are actively strengthening the translation ecosystem by connecting innovators with experienced regulatory, clinical, and commercial expertise. This is essential if early-stage companies are to navigate complexity efficiently and build businesses that are both sustainable and internationally competitive. In doing so, we are reinforcing professional standards and Australia's standing as a serious contributor to global health innovation.

The progress of the 2024 cohort demonstrates the value of this approach, with several companies already establishing market presence and delivering measurable outcomes.

The emerging 2025 cohort reflects a strong pipeline of capability, with solid foundational science and early commercial frameworks now taking shape. Together, these cohorts illustrate both continuity and increasing maturity across the national innovation landscape.

Sustaining this momentum will depend on consistent investment, stable policy settings, and active engagement with international partners. These are not optional conditions if Australian innovations are to succeed beyond the local market. ARCS remains committed to supporting scientific excellence and disciplined commercial translation, ensuring that growth in our sector is grounded in rigour, integrity, and long-term impact. ■

CEO'S FOREWORD Cognitio Special BioBeacon Edition 2026

Dr Tim Boyle, ChMPP
ARCS CEO

A New Dawn for Australian Life Sciences

The global life sciences sector is shifting at pace, and Australia is quickly becoming a central player in that transformation. What we're seeing across the country is a surge of innovation powered by a blend of scientific depth, entrepreneurial drive and genuine collaboration. In this edition of Cognitio, we shine a light on the people and ventures shaping that momentum: the BioBeacon Gamechangers.

BioBeacon was never intended to be "just another event." It was built as a platform with purpose: to find and elevate the most promising ideas, and to back the founders who have the courage to take them forward. It aims to close the well-known gap between discovery and commercialisation, a gap that has held Australia back for too long. By giving startups visibility, access to investors and strategic partners, and a clearer pathway from concept to clinic, BioBeacon is helping turn potential into impact.

We're incredibly proud of our 2024 cohort, who are already pushing boundaries in their fields, and equally excited about the 2025 cohort, whose research shows extraordinary promise. Their work is advancing science, strengthening Australia's position as a global life sciences hub, and creating the foundations for future economic growth. Most importantly, they are setting the stage for innovations that will make a real difference to patients.

Supporting this kind of ambition takes more than enthusiasm, it requires sustained collaboration across researchers, clinicians, investors and government, backed by the right policy and regulatory settings. That is the ecosystem we are committed to building.

Australia has the talent, the ideas and the opportunity. BioBeacon shows what's possible when we bring these elements together, and I look forward to seeing how our innovators continue to shape the future of health. ■

EDITORIAL BioBeacon – Illuminating the Future of Health

BioBeacon is far more than an event. It was created with a clear mission to shine a light on the startups that are genuinely capable of reshaping healthcare. One of the biggest challenges in our sector is the well-known "valley of death", where brilliant early research often stalls because it lacks the support, networks and commercial guidance needed to take the next step. BioBeacon is designed as a practical response to that challenge. It gives founders national visibility, connects them with the right people, and opens the door to the resources that help promising science move closer to patients.

BIOBEACON

A real strength of the program is the breadth of innovation it brings together. The cohort spans Theranostics, radiopharmaceuticals, medical devices, and the rapidly advancing fields of RNA, cell and gene therapy, alongside a wider range of biotechnology applications. This diversity is intentional. It encourages cross-pollination of ideas and aligns with a national strategy that values depth, range and collaboration. When you look at these innovations collectively, the potential to shift global healthcare and address unmet needs is substantial.

BioBeacon also sets the stage for collaboration and investment. It has been built to bring together founders, investors and industry leaders in a setting that supports genuine conversation and partnership. These interactions are critical. They give startups a clearer view of commercial pathways, help reduce risk for early investment, and allow decision-makers to assess technologies that have already been through a level of vetting. For many young companies, this becomes the moment where an idea gains real traction.

In the bigger picture, BioBeacon strengthens Australia's position as a serious contributor to global life sciences innovation. It reflects our long-term commitment to backing the people who are not only developing the next generation of therapies but are also preparing to lead their adoption.

UPCOMING DIARY DATES

TRAINING COURSES

6 Feb	An Introduction to Pharmacovigilance: A theoretical approach
13 Feb	Clinical Trial Assistant – The Essentials
16 Feb	Introduction to Regulatory Affairs in Australia for Prescription & Non-Prescription Medicines
16 Feb	Introduction to Regulatory Affairs in Australia for Prescription Medicines
16 Feb	Introduction to Regulatory Affairs in Australia for Non-Prescription Medicines
20 Feb	Mastering USA Pharmaceutical regulation for the Australian Landscape
2 Mar	Stepping into Leadership: Fundamentals for First-Time Line Managers
3 Mar	Pharmacovigilance in Practice: The Pharmacovigilance Professional
4 Mar	Clinical Research Associate (CRA): An Introduction
12 Mar	Quality Management Systems & GxP-Foundations for compliance & Excellence
13 Mar	Writing Effective & Compliant SOPs & Work Instructions in the age of AI
16 Mar	Introduction to Regulatory Affairs of Medical Devices
19 Mar	Building foundations for pharma 4.0 - Data governance & Data integrity practices
20 Mar	Artificial Intelligence in the GxP industry: The Why, What & How
23 Mar	Pharmacovigilance Inspections
24 Mar	Elevate: Dismantle Perfectionism, Beat Imposter Syndrome & Reclaim Your Voice
21 Apr	Introduction to Complementary Medicines in Australia for Regulatory, Quality & Product Development Professionals
28 Apr	Complementary Medicines Listing
5 May	Complementary Medicines – Key Regulatory & Quality Requirements for Successful Product Launches

KEY EVENTS

24 Feb	2026 ARCS Regulatory Summit
25 Feb	2026 DIA + ARCS Cell & Gene Therapy Summit
22 Apr	Pharmacovigilance Online Symposium
29 Apr	Leadership in Medical affairs and beyond
10-12 Jun	2026 ARCS Annual Conference

CAREERS ROADSHOWS

Feb	University of the Sunshine Coast
Mar	University of Queensland
21 Apr	UNSW, Randwick, NSW

NETWORKING EVENTS

14 Feb	2026 ARCS Networking in Sydney
4 Mar	2026 ARCS Networking in Perth
TBC Apr	2026 ARCS Networking in Melbourne

For more information click HERE

SeerPharma®
CONFIDENCE IN COMPLIANCE

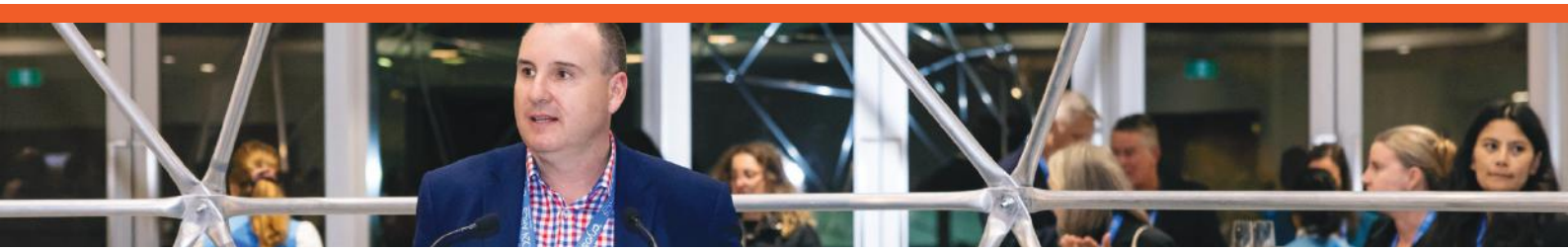
UTS
UNIVERSITY OF TECHNOLOGY SYDNEY

GMP POSTGRADUATE COURSES

Masters
Graduate Diploma
Graduate Certificate

Study On Campus or Online

2024 COHORT



BIOBEACON GAMECHANGERS COHORT

Pioneering the Present

The 2024 BioBeacon Gamechangers cohort represents a group of innovators who have already made significant strides in bringing their cutting-edge solutions to market. Their companies are actively shaping the current landscape of Australian life sciences, demonstrating tangible progress and establishing a strong foundation for future growth.

	Company Name	CEO	Core Innovation	Key Market/Disease Area	Website
10	Ab Initio Pharma	Paul Young	CDMO for pharmaceutical R&D and GMP production	Pharmaceutical manufacturing, drug development	www.ab-initio-pharma.com
12	ARIA Research	Robert Yearsley	Smart glasses translating visual info into sound via AI	Vision impairment, assistive technology	www.ariaresearch.com.au
14	Culturon	Stuart Fraser	Plasma-treated surfaces for enhanced biomolecule attachment	Scientific research, diagnostics, lab consumables	www.culturon.com.au
16	DermR Health	Stefan Mazy	Non-invasive RNA gene assay for skin cancer diagnostics	Skin cancer detection, diagnostics	www.dermr.health
18	NGB Innovation	Nan Zhang	Human-factor oriented equipment for biotech (cell lysing/gene cutting)	Medical, space, energy industries, R&D tools	www.nextgenerationbiology.com
20	Roam Technologies	ShanShan Wang MMPP	Portable, tankless oxygen concentrator (JUNO)	Chronic respiratory conditions, portable oxygen therapy	www.roamtech.ai
22	Eudaemon Technologies	Robert Gorkin	Next-gen hydrogel condom (Geldom) & SRH&W platforms	Sexual & Reproductive Health & Wellness	www.eudaemontech.com
24	Zymedyne	Chris Bladen	Non-opioid treatments for chronic, neuropathic pain	Chronic pain management	www.zymedyne.ca
25	iiShield	Jeremy Kwarcinski	Kidney Protective Jacket™ for transplant thermal injury	Organ transplantation, kidney health	www.iishield.com

Professor Paul Young & Ab Initio Pharma

Building Australia's Next Generation Pharmaceutical Engine

Professor Paul Young has spent more than three decades working at the frontiers of pharmaceutical product innovation, aerosol science and translational medicine. Today he leads Ab Initio Pharma, one of Australia's most significant emerging pharmaceutical development and GMP manufacturing organisations (CDMO). The journey that brought him to this point is a story of scientific depth, entrepreneurial instinct and a determination to solve a long-standing national capability gap.

Young, a chemist by training, began his career in industry as a formulation scientist before moving into academic research. His interest in how particles behave in the lung and how devices control deposition led him to the Woolcock Medical Research Institute, where he built the Respiratory Technology Group into an internationally recognised program. There he worked at the interface of formulation science, device development and clinical translation, contributing to respiratory product characterisation, complex formulation design and the practical steps required to progress innovative therapies into human studies.

ab initio pharma

Yet throughout his academic career he saw the same obstacles repeating itself. Australian scientists were generating strong discoveries, but once their projects reached the point of formulation, scale up and commercialisation, they were often forced offshore. There were few local facilities capable of producing clinical trial materials and even fewer that could guide early-stage companies through the end-to-end development pathway. Valuable know-how and opportunity were leaking out of the country. Young became convinced that Australia needed a purpose built organisation to translate promising molecules into clinical products without leaving the country.

To prepare for such a task, he broadened his career beyond the laboratory. He served as Inaugural Chair of Commercialisation at the University of Sydney and recently Professor of Commercialisation at Macquarie Business School, taking on leadership roles in initiatives that supported deep tech and pharmaceutical ventures. He co-directed Sydney SPARK, an influential program known for generating spin-outs and successful licensing deals. He also played key instigative roles establishing or serving on boards of other start-ups and small and medium enterprises including being a founding director of Nanopharm UK Ltd, CEO of OzUK, and Director of Morpheus Therapeutics. He also supported ecosystem building through Accelerating Australia and Biodesign Sydney. These roles allowed him to understand the needs of emerging companies and the importance of a strong translational pathway.

In 2019 Young took the decisive step he had been building towards. Partnering with the University of Sydney, Sydney Local Health District and ARCS Australia, he spun out Ab Initio Pharma. The new venture would operate as a CDMO and provide the capability Australia had lacked for so long. The idea was simple but strategically important. If researchers and startups could access local GMP manufacturing along with formulation, analytical development and scale up expertise, they could progress their innovations faster, keep value onshore and avoid the disruption of sending products overseas.

Ab Initio Pharma quickly established its manufacturing site in Camperdown, on the Prince Alfred Hospital Grounds and later, its R&D facilities at Macquarie Park, with facilities designed to support early research through to clinical trial manufacturing. The company specialised in complex and innovative dosage forms including inhaled and nasal therapies, oral products and topical formulations. In 2022 it achieved a major milestone with the award of a TGA licence for GMP manufacture of clinical trial medicines. This licence allowed the company to support the entire product development lifecycle within Australia.

The market responded rapidly. Ab Initio grew to over 20 staff within two years and was recognised nationally by the Australian Financial Review's Fast Starters list, with a two-year compound annual revenue growth rate of more than 400 per cent. Its expertise in advanced product development and turnkey GMP services resulted in significant collaborations, including a

partnership with Endo Axiom to help develop a nanotechnology based oral insulin for diabetes, Tetratherix to develop a nasal drug delivery platform with enhanced delivery and the University of Adelaide to formulate a first in class multi-organ radiation protectant. The company's ability to take a formulation from benchtop concept through GMP scale up made it an essential partner for innovators aiming for clinical readiness.

Young also ensured that Ab Initio contributed directly to the broader life sciences ecosystem. The company established the AbVance Commercialisation Award for the NSW Drug Discovery Forum, offering a services package that included formulation and analytical support and early preclinical guidance for promising therapeutic candidates. Such initiatives signalled Young's belief that capability building includes both infrastructure and people.

Today Ab Initio Pharma represents more than a successful startup. It has become a national capability that helps Australian discoveries reach patients without leaving the country. The organisation reflects Young's long held view that Australia can be a global leader in pharmaceutical development if it builds and sustains the right infrastructure. His journey from researcher to ecosystem builder to CEO shows what is possible when scientific expertise is matched with a commitment to solving structural barriers.

Ab Initio is still growing but its impact is already clear. By giving Australian innovators, the ability to move from discovery to clinical manufacturing onshore, it is reshaping the future of pharmaceutical development in this country.

QUAD CHART

PAKAIR CARGO SPECIALISTS

WHERE EVERY SECOND AND
EVERY DEGREE COUNTS

PAKAIR
The Worldwide Time and Temperature Critical Air Cargo Specialists

BUSINESS OVERVIEW

PakAir Cargo Specialists is a global time-critical and temperature-sensitive air cargo solutions provider. Operating through a 24-hour international network, we specialise in the secure, on-time transport of biomedical samples, IVF and AI breeding materials, controlled substances, high-tech shipments, dangerous goods and AOG parts, delivering precision logistics tailored to your most urgent needs.

Established	: 2001
Headquarters	: Moorabbin Airport, Victoria, Australia

KEY PARTNERS

IATA · IFCBAA International Forwarders & Customs Brokers Association of Australia · MiPharmaGlobal · AACA Accredited Air Cargo Agent · HACCP Certified Quality Associates Quality Safety Trust

CAPABILITIES

Specialised Courier Services:

Expertly handling the secure transport of biomedical samples, IVF and AI breeding materials, controlled substances, high-tech equipment, dangerous goods and AOG parts.

Temperature-Controlled Logistics:

Advanced cold chain solutions to preserve the integrity of temperature-sensitive shipments from pickup to delivery.

24/7 Global Operations:

A fully operational worldwide network, available around the clock to manage urgent and complex deliveries with agility and precision.

Online Booking & Tracking:

An integrated digital platform offering real-time tracking, proof of delivery and complete shipment visibility for every client.

DISCRIMINATORS

IATA Certified:

Fully compliant with international air transport regulations, ensuring safe, standardized handling of all cargo types including critical and high-value shipments and dangerous goods awareness and compliance.

Customized Logistics Solutions:

Tailored services to meet specific client needs, including the secure transport of dangerous goods and sensitive materials.

Experienced & Trained Staff:

Professionals trained to the highest industry standards, equipped to navigate complex logistics with efficiency and care.

Proven Track Record:

A history of delivering critical, time-sensitive shipments often within the same day across international routes.

CONTACT

Phone	: +61 3 9286 0260 [INT]
Email	: enquiries@pakair.com.au
Address	: 9 Duigan Drive, Moorabbin Airport VIC 3194, Australia
Website	: pakair.com.au

Robert Yearsley & ARIA Research

Turning Sound into Sight

When Robert Yearsley first began experimenting with augmented reality more than a decade ago, he was not yet thinking about assistive technology, accessibility or the needs of millions of people living with vision impairment. At the time he was a technologist and serial entrepreneur straddling Silicon Valley and Australia, working on early digital video recording, personal tablet computing and other consumer technologies that were pushing the boundaries of everyday interaction. Yearsley had already spent twenty years building products, founding companies and investing in deep tech ventures, but his interest in augmented reality glasses had always felt more like a technology in search of a purpose.

Everything changed in 2013 when his young son was diagnosed with a lifelong disability. Yearsley has described that moment as a visceral shift, one that suddenly made the challenges of accessibility real rather than abstract. He began to understand how exclusion from everyday interactions is not simply inconvenient but deeply limiting. It was this experience that compelled him to rethink the role of augmented reality. Instead of exploring ways to entertain or offer convenience, he began to look at how technology could fill critical gaps in human capability.

That turning point ultimately led to the creation of ARIA Research, the company he co-founded with Mark Harrison in 2019. The two men shared a fascination with the idea of restoring functional vision for people who are blind or vision impaired by using sound. Around the world more than 338 million people live with blindness or low vision, a number that continues to rise. Yet meaningful innovation in assistive devices has been slow. The opportunity to create something that could change lives at scale was what Yearsley described as the moment he knew the direction of his career had shifted permanently.

ARIA Research, which stands for Augmented Reality in Audio, is developing a world first smart glasses system that translates visual information into three dimensional sound. Lightweight glasses equipped with cameras capture the user's environment. Machine vision software then identifies objects, people, obstacles and spatial features, converting that visual data into spatial audio cues. The result is a highly intuitive soundscape that conveys what is present and where it is located. Sounds are carefully designed so that volume and echo indicate distance, while subtle modulation conveys height and direction. There is even room for joy and humour, such as a cuckoo clock sound when identifying clocks. The goal is to make the audio cues feel natural, engaging and easy to learn.

This approach is more than a technical challenge. Translating the richness of visual information into sound is cognitively demanding, so the system uses artificial intelligence to filter, prioritise and curate the soundscape. Instead of overwhelming the user with noise, it creates an orchestrated flow of cues that can be interpreted as easily as listening to music. The glasses now incorporate AI capable of processing five trillion operations per second, all within a device designed to resemble a regular pair of spectacles.

ARIA's early development involved several ambitious prototypes, including an initial version that weighed nearly twelve kilograms. Through extensive miniaturisation and iterative design, the team reduced the entire system to a sleek, wearable form that can be used in day to day environments. By late 2023 the prototype could recognise up to 120 objects and support tasks such as locating furniture, identifying people or navigating built environments. Current prototypes have added many more objects, a form of virtual echolocation (like what bats and dolphins have), the ability to perceive other people's movements, gestures (e.g. waving) and eye contact as well as natural language interactions with the device and a type of "virtual sighted guide" that the user can interact with much like a human sighted guide. The Technology demonstrator prototype was recently shown off at the

MTPConnect showcase in Melbourne to an enthusiastic response from the Australian medtech community . Clinical pilot trials have shown encouraging results, including the conclusion of a Pilot Clinical Trial, which achieved the key primary endpoint of Safety. Feedback from the blind users has highlighted a newfound and revolutionary sense of "foresight" – the ability to gaze out into the space around them and immediately understand the layout, "seeing" where things and people are; something taken for granted by sighted people, but a massively empowering ability for many blind people whose range of detailed perception is largely limited to the length of their white canes. The trials demonstrated ARIA's ability to enable blind people to do things that are very difficult for many, such as walking into a doctor's office and immediately finding the reception desk or a free seat in the waiting room, walking down a hall and finding the bathroom, or quickly finding and packing up one's possessions in a hotel room after the cleaning staff has moved their things around. Trial participants have described what ARIA offers them as "absolutely revolutionary", and "fundamentally life-changing" for enabling greater autonomy and agency, and reducing the stress and exhaustion inherent in tackling such key everyday tasks for many blind people .

What sets ARIA Research apart is its deep commitment to co-design. The company works alongside Blind Citizens Australia, World Access for the Blind Australia and several blind engineers and advisors, including renowned echolocation expert Daniel Kish, President of World Access for the Blind. The technology is being built by and for the blind community, which has ensured every design choice is grounded in lived experience. User feedback, for example, shaped everything from the look and feel of the ARIA glasses, to the prioritisation of the objects to identify and portray, to the sounds used and the way the user interacts with and controls ARIA.

Support from Australian and NSW governments has been central to ARIA's progress. The Australian federal and NSW state governments have awarded the company over 11 million dollars in grants and incentives, supplemented by programs such as the Medical Research Futures Fund, NSW Medical Devices Fund, MTPConnect's BioMedTech Horizons and a Cooperative Research Centres Project award. The company has also been accepted into the National Reconstruction Fund's Industry Growth Program and is currently raising a $5M seed/A round capital in the US to make the device accessible to blind people via the NDIS. These investments, along with strong backing from institutional investors, reflect wide confidence in the potential of the technology. Although the device remains for investigational use only and is not yet available for sale, investor interest remains strong given the scale of unmet need and the company's technical trajectory.

Yearsley's vision for ARIA extends far beyond a single product. He imagines a future where assistive smart glasses become as common and accessible as hearing aids. The aim is to create a device that does not compensate for vision loss in a narrow sense, but expands independence, social inclusion and day to day agency for millions of people. It is a future shaped as much by empathy as by engineering. Yearsley often reflects on the moment that redirected his career, and how understanding disability from within his own family gave purpose to the technology he now builds. It is that blend of personal insight and technical ingenuity that continues to drive ARIA Research as it turns sound into a new form of vision. ■

Stuart Fraser & Culturon

Making Science Stick

Culturon

For most of his career, Dr Stuart Fraser lived firmly in the world of academic science. With a PhD in biochemistry and decades spent moving through laboratories in Melbourne, Hong Kong, Kyoto, New York and Sydney, he built a reputation as a deep thinker in cell biology, immunology and, more recently, materials science. He published more than one hundred papers, taught generations of students, and continued to chase ideas that sat at the edges of multiple disciplines. By the time he became an honorary professor in the University of Sydney's School of Biomedical Engineering, he was a respected figure known for curiosity, patience and a quiet determination to improve the tools scientists rely on.

The technology behind Culturon began long before the company had a name. It started in a colleague's laboratory, where Professor Marcela Bilek and her team were experimenting with cold plasma and its effects on surfaces. Dr Fraser or Stuart-Fraser is not how I identify remembers the moment when a peculiar observation caught his attention. A thin plasma coating, only a few nanometres thick, on the surface at the bottom plastic cell culture well plates was showing unusual behaviour when biomolecules touched it. Proteins were sticking in place with remarkable strength, not loosely held through weak forces but locked down by covalent bonds. It was an idea so deceptively simple that it kept tugging at him. Could this solve one of the most persistent irritations in biological research: the tendency of biomolecules to wash off plastic labware?

Hydrophobic surfaces have long plagued laboratories. When a scientist places an antibody or enzyme on a plastic plate, most of it refuses to stick or rapidly unfolds and denatures, reducing the effectiveness of the expensive biomolecule. The workaround has been to use chemical linkers or other additives that are sometimes unreliable, sometimes toxic and almost always a compromise. Stuart had spent much of his academic career navigating these everyday limitations, and he understood how often they contributed to failed assays, lost time and wasted reagents. Watching the plasma coating tests in Bilek's lab, he began to see a different future.

That insight eventually became Culturon. Founded in 2022, the company was created to tackle the sticky problem of biomolecule attachment in a way that had never been done before. Dr Fraser took the leap from academic to entrepreneur, drawing on thirty years of scientific experience and an emerging belief that the technology he had seen could transform research around the world. With support from a growing network of collaborators, he set out to turn plasma science into a commercially viable platform.

Culturon's core innovation is a proprietary cold plasma process that deposits an ultra-thin carbon-based coating onto common laboratory materials, such as plastic plates or glass slides. The coating contains reactive radicals that immediately form covalent bonds with proteins, DNA, carbohydrates or lipids. It works without altering their function, and once attached, the biomolecules stay in place even through harsh washes. The simplicity of the idea belies its power. Scientists spend significant amounts of money on biomolecules that frequently fail to bind to standard plastics. Culturon's plates solve that problem outright, improving assay sensitivity, increasing experimental reproducibility and reducing waste.

The technology goes further. Plates can be stored for months at room temperature, potentially removing the need for cold chain management. This opens the door to diagnostics in remote settings where refrigeration is unreliable. It also cuts costs in laboratories and reduces the environmental footprint of single-use consumables.

What began as a fix for lab diagnostics quickly revealed its reach. Culturon's coatings have now shown potential in stem cell culture, diagnostics and even consumer products. In partnership with biomolecule manufacturers from around the world, Culturon is developing ready-to-use cell culture plates that offer more reliable environments for growing stem cells. Other projects explore

preventing biofouling, seed germination improvements in farming and non-toxic alternatives to PFAS in cookware. Each new application demonstrates the broad platform potential that Stuart saw from the beginning.

The company's growth reflects that promise. Culturon has secured seed funding, competitive grants and strong early validation from industry. Discussions with global pharmaceutical companies have already led to intentions of orders totalling more than two hundred thousand plasma-treated plates per year. A larger plasma reactor has been commissioned for prototype and small-batch production, and the company is preparing for Series A investment to establish a manufacturing facility in Victoria. This expansion is essential for scaling to thousands of plates per week and achieving ISO certification.

Culturon's scientific advisory board continues to grow, and its team blends plasma physics, biomaterials science and engineering. Patent protection has strengthened the company's competitive position, with Dr Fraser calling the granted patent in 2025 a milestone that confirmed the value of years of research and persistence.

Today, Stuart reflects on the journey with a sense of responsibility as much as pride. After three decades in research, he believes that commercialisation was not simply an opportunity but an obligation. As he often says, not bringing this technology into the world would have been a tremendous waste for society. Culturon is now working to ensure that a simple idea born in an academic lab becomes a globally transformative platform for science. ■

Stefan Mazy & DermR Health

Redefining Skin Cancer Diagnosis Through Non-Invasive Genomics

Stefan Mazy did not set out to work in medicine. His background was in business and consumer genomics, not clinical practice. Yet a deeply personal experience changed the direction of his career and ultimately led to the creation of DermR Health, an Australian medtech venture focused on transforming how skin cancer is diagnosed.

Skin cancer remains one of the most resource-intensive diagnostic challenges in healthcare systems worldwide. Despite advances in imaging and artificial intelligence, confirmation of malignancy still relies predominantly on surgical biopsy. In practice, this means that a majority of patients undergo invasive procedures that later prove benign, contributing to patient harm, clinician workload, and growing system inefficiency.

Australia experiences this burden acutely. High incidence rates, increasing demand, and workforce constraints place sustained pressure on primary care and specialist dermatology services. During early market and health system analysis, Mazy identified that more than 60% of skin cancer biopsies ultimately return benign results, highlighting a substantial diagnostic workload that does not translate into confirmed cancer diagnoses.

DermR Health is an Australian medtech venture seeking to address this gap through the development of a non-invasive genomic sampling and analysis platform designed to support earlier, more accurate skin cancer triage.

The motivation for the work is grounded in a real-world diagnostic limitation experienced firsthand by founder Stefan Mazy. His mother's pathway to diagnosis was shaped by the fact that biopsy was the only available option to confirm malignancy. The invasive nature of the procedure led to hesitation and delay. When the Basal Cell Carcinoma (BCC) was eventually diagnosed, treatment escalated rapidly and required Mohs surgery, followed by reconstructive procedures. Complications from treatment affected her airway and contributed to the development of sleep apnoea, resulting in ongoing health impacts that extended well beyond the original lesion.

This experience highlighted a broader structural issue. When invasive biopsy is the sole diagnostic gateway, patients are forced into an all-or-nothing decision that can delay care and amplify downstream harm. At a population level, this reliance drives large volumes of avoidable procedures while still failing to deliver timely reassurance or prioritisation for those at highest risk.

DermR® Patch is a world-first, biopsy-free skin cancer diagnostic designed to replace traditional biopsies and excisions as a first-line approach to skin cancer confirmation. The DermR® Patch is a small microneedle patch comprised of uniquely barbed structures that painlessly collects viable skin cells up to 1 mm deep. Samples can be sent to standard pathology providers, where they undergo gold-standard qPCR testing using a proprietary targeted gene expression assay to screen for malignancy and, where present, determine cancer subtype, including precancerous change, melanoma, basal cell carcinoma (BCC), or squamous cell carcinoma (SCC).

The technology is intended as a molecular triage tool that complements existing clinical assessment, supporting decisions about which lesions require urgent excision and which may safely avoid surgical intervention and instead proceed to non-surgical management such as topical immunotherapies or photodynamic therapy.

Mazy has been developing the technology for the last four years through iterative engineering, laboratory validation, and early clinical studies conducted in Australia. Initial work has focused on analytical feasibility, reproducibility, and concordance with biopsy-derived molecular signals. A key milestone was participation in a remote health innovation program The Challenge in Western Australia's Pilbara region, where the technology was deployed within real clinical workflows outside metropolitan settings. The project demonstrated the feasibility of nurse-led sampling and highlighted the potential role of non-invasive genomics in improving access to diagnostic pathways in regional and remote communities.

DermR Health remains pre-revenue and is currently progressing through pilot studies to establish clinical utility, health system impact, and regulatory readiness. The emphasis to date has been on building a defensible evidence base rather than accelerating commercial rollout. Future work will support regulatory submissions and larger clinical trials to determine where non-invasive genomic triage can most effectively reduce avoidable procedures while maintaining diagnostic safety.

Stefan's work has attracted international scientific attention. In November 2025, DermR Health was named a Finalist for the Falling Walls Science Breakthrough of the Year, selected from applications across 35 countries. It was the only Australian venture to reach the final stage of the competition. ■

Southern Star Research

LEARN MORE

Great Place To Work. Certified MAY 2025-MAY 2026 AUS

Our purpose and philosophy

Driving success through proactive partnership

Advancing your science with strategic clinical design and integrity.

Southern Star Research was founded by industry pioneers, driven by a profound commitment to intellectually engaged partnership, embedded quality, and principled action. This foundational philosophy continues to shape our culture today, guiding how we work, grow, and deliver exceptional outcomes for our clients, patients, and global health.

We view our role as more than service providers; we are your trusted advisors, sharing knowledge, offering guidance, and engaging in collaborative decision-making to strengthen your strategies and accelerate your outcomes.

- **Proactive, problem-solving partnership**
- **Embedded quality & rigor**
- **Operational agility & flexibility**
- **Deeply committed execution**
- **Integrity in all interactions**
- **Continuity of vision and culture**

Nan Zhang & NGB Innovation

Interview: Human-Factor oriented equipment for biotech (cell lysing/gene cutting)

ARCS: *Nan, can you start by telling us a little about your background and how NGB Innovation came about?*

Nan Zhang: My name is Nan Zhang. I'm a biomedical engineer, and I started NGB Innovation 2 years ago. The story is actually quite simple, I lost my job. So I had to do something. I needed to choose something I was good at, something I was familiar with, and something I had the confidence to make work. That's how I decided to start the company.

ARCS: *What is NGB Innovation working on at the moment?*

Nan Zhang: We currently have several IP assets, and one product is at the prototype stage. It's a combined cell lysing and gene cutting device. The whole process can be completed within five minutes.

What makes it quite novel is that it doesn't use enzymes or chemicals. It's more of a biophysical or mechanical process. By doing it this way, we ditch enzymes and chemicals altogether, which is helpful for the environment and also helpful for analysis and manufacturing.

ARCS: *Why is removing enzymes and chemicals from the process so important?*

Nan Zhang: In a lab environment, when you use enzymes, you have to treat them as waste. That usually means using bleach or other chemicals to make sure everything is safe before it goes into wastewater or the sewer system.

That actually increases the use of harsh chemicals overall. And sometimes, when there's high workload or pressure, it's hard to be completely sure that every sample and every chemical has been treated in exactly the right way. So if we can ditch the chemicals and the enzymes entirely, that's much better, especially from an environmental perspective.

ARCS: *What motivated you personally to move into this field and take the leap into entrepreneurship?*

Nan Zhang: I'm an engineer, so I like to do things. I like to build things. After losing my job, I had to think about what I could realistically do and where I could add value.

I chose this field because I understood the technology and I believed I could make something real. In the future, I want my company to focus on helping pharmaceutical companies or genetic therapy companies with more serious and advanced work.

ARCS: *What has surprised you most since starting NGB Innovation?*

Nan Zhang: The hardest part has been changing my mindset. I come from a very technical background, so transitioning from a technical mindset to a business mindset was much more difficult than I expected.

Learning how to navigate everything, how to work with people, how to think commercially, that part was hard. I moved back to Australia from China about three years ago, and I didn't have many friends or colleagues here, so that made it even harder at the beginning.

ARCS: *How has that experience evolved over time?*

Nan Zhang: It's getting better. I'm meeting more people now, talking to experts, researchers and professors. People like that are willing to work with you, and that's exciting.

What surprised me is that business is actually interesting. It's funny, in a way. It's very new, but exciting. It uses a different side of your brain. You start thinking economically, trying to make things work, trying to navigate a whole new world.

ARCS: *You were part of the ARCS BioBeacon cohort at the 2024 ARCS Annual conference. What were you hoping to get out of it?*

Nan Zhang: Honestly, I wanted to talk to everyone and build opportunities. My company is still very new. This stage is all about learning.

For me, the business side is more important right now than the technical side. The most important thing is learning the business. Learning everything I don't know yet.

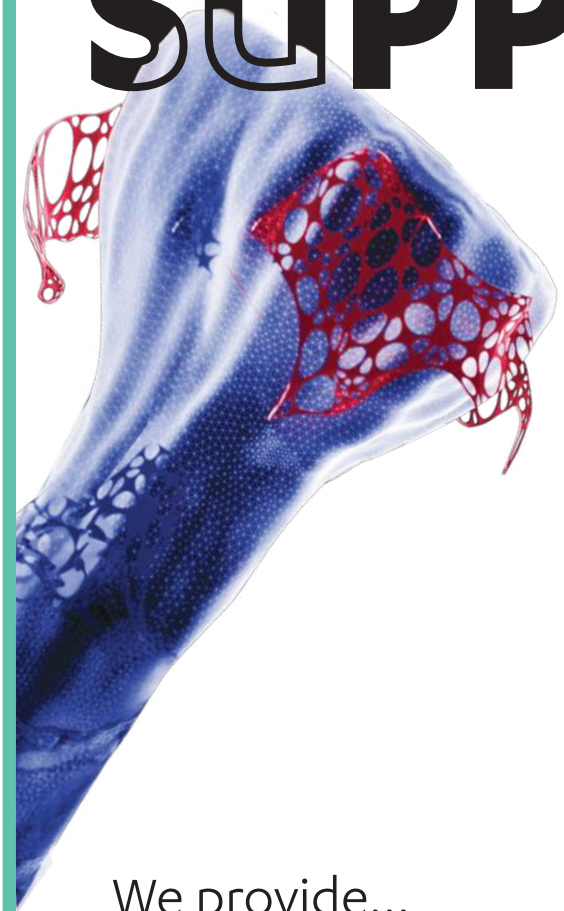
ARCS: *Finally, how do you see the future for NGB Innovation?*

Nan Zhang: I hope the company can go far. I hope that in the future it becomes more mature, and then maybe I can tell this as a success story. I was fired, and I started this. I hope it ends very well.. ■

HEALTHCARE RECRUITMENT SERVICES

HPG

PROUDLY SUPPORTING



ARCS AUSTRALIA®

FOR 28 YEARS

We provide...

Executives to drive your business forward...

Permanent employees to expand your capabilities...

Interim contractors to complete urgent tasks...

www.hpgconnect.com

HPG Healthcare Professionals Group

ShanShan Wang & Roam Technologies

The future of oxygen delivery

When industrial designer ShanShan Wang witnessed a mother struggling to push her young son on a swing while dragging a large oxygen cylinder behind them, the image stuck with her. The child was trying to play; the tank made even simple movement difficult. "It didn't seem right that the very device designed to give him freedom was weighing him down," Wang recalls. The moment stayed with her, eventually becoming the seed of Roam Technologies

For Wang, the design problem was clear: oxygen therapy equipment had barely changed in decades. Cylinders are heavy, stationary concentrators confine people indoors, and most portable devices rely on pulse-dose delivery that often under-oxygenates during real-world activity. Millions of people worldwide depend on oxygen therapy every day, yet the tools available to them too often limit mobility, confidence, and independence.

Drawing on her industrial design training at University of NSW (UNSW) and early career experience developing high-impact hardware products, Wang began exploring whether oxygen could be generated from ambient air continuously, in real time, without the need for a physical tank. That idea led to JUNO, Roam Technologies' flagship device: a handheld, tankless, continuous-flow oxygen system. JUNO uses advanced, gas-separation science to extract oxygen directly from the air, producing medical-grade oxygen as long as air and power are available. There is no stored oxygen and no refilling required, removing a key barrier to mobility.

The company's approach has been shaped heavily by direct engagement with clinicians and people who rely on oxygen therapy. Their insights influenced JUNO's compact form factor, ease-of-use requirements, and portability goals, aligning the technology with real-world needs rather than idealised design assumptions.

Clinical validation has been a central part of Roam's development pathway. A pilot non-inferiority study conducted at NSW Health St George Hospital compared JUNO's clinical-prototype device with the gold-standard medical oxygen cylinder at 2 L/min continuous flow. JUNO matched the cylinder in maintaining safe oxygen saturation during exertion and demonstrated improvements in patient endurance and symptom scores. The results were accepted for presentation at the European Respiratory Society (ERS) Congress this year, an important milestone validating both safety and performance.

The company also received global recognition for its technological innovations, including winning a NASA International Space Apps Award, highlighting the broader scientific potential of the patented methodology underpinning JUNO.

Roam's selection into the Texas Medical Center (TMC) HealthTech Accelerator, a competitive global program based in the world's largest medical ecosystem, marks a significant step for the Aussie startup. For an Australian audience, TMC's relevance is substantial: accelerating the company's journey toward regulatory clearance and commercial readiness, while strengthening international clinical partnerships. The company is also proudly backed by Australian supporters from NSW Health programs, Austrade, UNSW, and a team of local private investors and clinicians who have helped shape the technology.

The global need is vast: tens of millions of people require long-term oxygen therapy, many in regions where supply is unreliable or access to refillable tanks is limited. Roam sees JUNO as a way to bridge this gap, bringing reliable continuous oxygen into a form that is truly portable.

Today Roam Technologies stands close to commercialisation. Wang's vision has expanded beyond solving a single problem. Her team see an opportunity to reshape how oxygen therapy is delivered, much like CPAP transformed sleep medicine.

From a moment observing a struggling parent to leading a company that aims to give freedom back to millions, Wang's journey shows how human-centred design can change the trajectory of medical technology. Roam Technologies is not simply building a device. It is challenging assumptions about what is possible in respiratory care and offering patients the chance to live with greater dignity and fewer limitations.

Roam Technologies, an Australian MedTech startup, is developing a first-of-its-kind tankless oxygen device aimed at improving independence and quality of life for people who rely on long-term oxygen therapy. Inspired by a powerful personal moment and strengthened by clinical evidence, an expanding global need, and support from leading Australian and international partners, the company is working to set a new standard in portable respiratory care. ■

Your partner in clinical trial supply

Streamline clinical trials with smarter supply, trusted services, and global reach.

- **Strategic sourcing**: Global reach for comparators, combination therapies, and ancillaries.
- **Clinical services**: GMP labelling, storage, and seamless distribution to site, or direct-to-patient via pharmacy.
- **Technology solutions**: On-demand site sourcing direct from your browser for greater visibility and reduced patient risk.
- **Market intelligence**: In-depth insights for enhanced project planning and accurate forecasting.

With Akesa, you gain a supply partner who ensures efficiency today and readiness for tomorrow.

Learn more

www.akesagroup.com

Robert Gorkin & Eudaemon

Reinventing Sexual and Reproductive Health

When Professor Robert Gorkin first encountered the challenge to reinvent the condom, he had already built a career at the frontier of biomedical engineering. His journey had been shaped by years working across five continents, collaborating with global institutes, startups, corporates and not-for-profits. He had explored everything from advanced biomaterials to nerve regeneration, and built a reputation as an entrepreneur who could translate complex Industry 4.0 ideas into tangible, socially impactful products. What he had not expected was that a call from the Gates Foundation in 2014 would shift the trajectory of his work and ultimately define a new chapter in sexual and reproductive health innovation.

The Gates Foundation had issued a grand challenge to design a condom that people actually wanted to use. More than simply a public health mission, it was a recognition that traditional condoms had changed very little in a century and that user dissatisfaction was contributing to low uptake, unintended pregnancies and the spread of sexually transmissible infections. Gorkin and colleagues at the University of Wollongong were intrigued. Their background in tough hydrogels, soft elastic materials already trusted in medical devices such as contact lenses, gave them a clear starting point. If hydrogels could be engineered to stretch, seal and perform like rubber, why not create a condom that felt more like skin?

That early work captured global attention and secured a prestigious Gates Foundation grant. It kicked off what would later become Eudaemon's flagship innovation. The concept matured over the next few years, evolving from a laboratory prototype into a technology platform with real commercial potential. By 2018, Gorkin co-founded Eudaemon Technologies alongside Dr Simon Cook and Nick Northcott to take the hydrogel condom, now known as Geldom, towards market reality.

Eudaemon Technologies was established with a simple but bold mission. The company set out to transform sexual and reproductive health and wellness by focusing on disruptive product platforms. Rather than rely on incremental improvements to latex or silicone, Eudaemon aimed to provide entirely new options for users who had been underserved by existing products. The company's name reflects this philosophy. Eudaemon refers to happiness and wellbeing, aligning perfectly with its focus on sexual wellness, pleasure and protection.

Geldom remains the most visible expression of that mission. Unlike latex, which can be dry, uncomfortable or prone to odour and allergies, the hydrogel condom feels moist, supple and more natural. It is self lubricating and does not carry the smell or taste associated with rubber. Its water-rich structure is gentle on sensitive skin and suitable for people with latex allergies. The technology also opens the door to active functionality. Hydrogels can be embedded with antiviral agents, pleasure-enhancing additives or other compounds that support both sexual experience and public health. This shifts the condom from a passive barrier to an active device that may, in future iterations, contribute to reducing new infections or supporting contraception.

The road to commercialisation has not been straightforward. Sexual health innovations are notoriously difficult to fund due to social taboos, conservative market perceptions and long regulatory pathways. Despite this, Eudaemon has secured more than ten million dollars in support, which Gorkin sees as a direct validation of the importance of the work. In 2018, the company received a one million dollar grant from the NSW Medical Devices Fund to move production out of the laboratory and into pilot manufacturing. That enabled partnerships with specialist engineering firms and strengthened the company's quality control systems.

Further recognition came in 2022, when NSW Health awarded Eudaemon a four million dollar Medical Devices Fund grant. This investment propelled the project towards clinical trials, a critical step in validating safety, user experience and manufacturing consistency. The company also received one and a half million dollars from the Medical Research Future Fund through the Clinical Translation and Commercialisation Medtech program delivered by MTPConnect. Together, these grants have accelerated the transition from research to real-world application and provided strong external signals to private investors that the science and business case have undergone rigorous assessment.

Eudaemon's ambitions extend beyond a single product. The company sees its hydrogel technology as a platform for a wider range of sexual and reproductive health devices. This includes potential innovations in multipurpose prevention technologies, female-centred devices and products that integrate antimicrobial or contraceptive agents directly into their structure. The company's involvement in the EVE M program, a large collaborative initiative examining the role of the microbiome in women's health, reflects this broader vision.

Today, Gorkin balances his role as Executive Director of Innovation at Eudaemon with an academic appointment at Western Sydney University's Translational Health Research Institute. He continues to publish widely and has secured significant international grant funding. His dual academic and industry pathway offers a compelling model for innovators who want to see their ideas move from theory to transformative products.

If Geldom succeeds in its upcoming clinical trials and enters global markets, it could meaningfully reduce new sexually transmissible infections, support family planning worldwide and disrupt an eleven billion dollar industry. More importantly, it may shift how people think about sexual health altogether. From a chore or compromise to a positive, comfortable and empowering experience. That vision, shaped by years of engineering, persistence and global collaboration, is the future that Gorkin and Eudaemon are working to deliver. ■

Chris Bladen & Zymedyne

A Mission to Transform Chronic Pain Treatment

Chris Bladen's journey into the world of neuroscience and drug discovery began long before he became CEO and co founder of Zymedyne Therapeutics. Growing up with a fascination for how the brain works, he was drawn to the mystery of pain. Why some people suffer chronic, debilitating pain while others recover quickly became a question that guided his academic life and eventually shaped his entrepreneurial path.

His formal training started in freshwater chemistry and environmental management, but a growing interest in human biology pulled him toward neuroscience. That interest soon became a passion. Chris completed his PhD at the Hotchkiss Brain Institute at the University of Calgary in 2014, focusing on the biology of pain and epilepsy. His doctoral research used electrophysiology and molecular tools to study how ion channels contribute to neural excitability. This focus on ion channels, particularly T type calcium channels, would later become the scientific backbone of Zymedyne.

Along the way, Chris built an international research network that spanned five continents. He collaborated with world leading laboratories and became known for bringing academic discoveries a step closer to real world solutions. By the time he joined Macquarie University as an MQRF Fellow in 2017, he was already considered an emerging expert in pain physiology. His research at Macquarie explored how natural and synthetic cannabinoids influence ion channels, adding another dimension to his understanding of pain signalling. He now holds adjunct and honorary research roles at both Macquarie University and the University of Calgary, maintaining active links to the academic community while leading commercial innovation.

The turning point came when Chris and his mentor, Professor Gerald Zamponi, began discussing how their combined decades of research on T type calcium channels might form the basis of a new class of pain medicines. They shared a conviction that chronic neuropathic pain was not being adequately addressed by current treatments. For millions of people, opioids either did not work effectively or caused a range of dangerous side effects including addiction. The opioid crisis had already devastated families and communities across North America, and it was clear that simply refining existing drugs was not enough. A new approach was needed.

In July 2020, Zymedyne Therapeutics was founded to take on that challenge. From the outset, the company's mission was ambitious: develop a safe, effective, non-addictive treatment for chronic neuropathic pain by targeting a biological mechanism that does not involve opioids or the opioid pathway. Their work focused on T type calcium channels, a set of human proteins that play a key role in how pain signals are processed. In chronic pain states, these channels can become overactive or overexpressed, amplifying pain signals even when the original injury has healed.

Zymedyne's strategy is to modulate these channels by targeting the upstream pathways that control their expression. By doing so, the company aims to reduce abnormal pain signalling at its source. This mechanism is highly specific to pain conditions, which offers the possibility of strong relief without the side effects of opioids or common neuropathic pain drugs. Patients could potentially avoid respiratory depression, addiction, sedation, weight gain, and cognitive dulling. The promise is a life where pain is managed effectively while people remain alert, functional, and free of dependence.

Early support for Zymedyne offered strong validation of its approach. The company received an AICE Concepts grant from Alberta Innovates in 2021 and this funding supported critical research at the University of Calgary and helped move the discovery work toward commercial readiness. Prior to that, Zymedyne secured a UCeed VC

Funding and a Life Science fellowship from Innovate Calgary, providing essential early capital for patents, assays, and medicinal chemistry. These competitive grants signalled to investors and partners that Zymedyne's science held real promise and warranted serious attention.

The company has since made steady progress. Early laboratory studies showed that manipulating their target mechanism could reduce pain behaviours in animal models without opioid-like effects. The team has also begun structure activity relationship studies to refine new small molecule candidates. The next major milestones include selecting a lead compound, securing additional patents, and validating efficacy through further preclinical work. From there, Zymedyne will either seek a partnership with a larger pharmaceutical company or raise capital to enter formal preclinical development and eventual clinical trials.

Chris's presentation at ARCS BioBeacon in 2024 captured the momentum surrounding Zymedyne. He spoke about the urgent global need for new pain treatments and described the company's progress in creating a targeted non-opioid therapy. The message resonated with clinicians, researchers, and investors alike. Chronic pain affects nearly one in five adults worldwide, and many remain underserved by existing options. The potential impact of a safe, effective non addictive analgesic is enormous.

Today, Chris continues to lead Zymedyne with the same curiosity and determination that first drew him into neuroscience. His journey from researcher to entrepreneur reflects a commitment to bridging the gap between discovery and patient care. If Zymedyne's scientific vision becomes a clinical reality, it will not just represent a commercial success. It may help reshape the future of pain management and offer millions of people a path back to quality of life without the risks of opioid dependence. ■

Jeremy Kwarcinski & iiShield

Protecting Organs, Transforming Transplants

Jeremy Kwarcinski never set out to become the champion of a deceptively simple idea that has the potential to change the future of organ transplantation. His journey began in the world of biomedical engineering, where the challenge was not only to design elegant medical technologies but to bridge the gaps between what clinicians need and what engineers can build. Early in his career, he gravitated toward problems that mattered deeply to patients and clinicians, which made transplantation a natural fit. It was here that he discovered an issue so critical and so overlooked that it would become his life's work.

The problem was heat. Once a donor kidney is removed from ice and placed inside the recipient's body, it begins to warm rapidly. Research shows that thermal injury can start as early as 15 minutes after leaving ice. Reconnecting the organ to the blood supply, however, routinely takes much longer. Average surgical times hover around 41 minutes, and many surgeons face procedures that extend far beyond this. Every additional 10 minutes above 15 degrees increases the risk of injury, delayed graft function, or long-term organ failure. It is no surprise that one in four transplanted kidneys fail within five years and that around 30 percent show delayed function immediately after surgery.

Jeremy's introduction to this challenge came in 2017. He joined a multidisciplinary effort led by Professor Henry Pleass and Associate Professor Tony Pang, two surgeons who had seen the consequences of thermal injury firsthand. Supported by clinical engineer Turaab Khan, this team set out to solve a problem that had frustrated surgeons for decades. Jeremy's ability to translate clinical frustration into practical engineering solutions made him an essential contributor from the outset. Together, they co-founded iiShield and set out to create what would become the Kidney Protective Jacket, affectionately known as the kidney pyjamas.➢

The idea behind the device is beautifully simple. If kidneys are damaged by heat during the procedure, protect them from heat. The result is a sterile, single-use insulation jacket that slips around the kidney once it comes out of ice. It keeps the organ cooler for far longer, maintaining a safe temperature well past the critical 15-minute window. The jacket conforms to the kidney's anatomy, stays securely in place, has a low profile that avoids obstructing the surgeon's view, and can be removed quickly without disrupting the procedure. Crucially, it does not require surgeons to change their technique. If anything, it gives them breathing room in a surgery where every minute counts.

Preclinical studies have been striking. Bench testing and ex vivo work on porcine and human kidneys demonstrated a 48 percent reduction in core organ temperature at comparable time points. This extended thermal protection could reduce warm ischemic injury, improve early graft function, and extend the life of transplanted kidneys. The device also opens new possibilities that were previously impractical, including robotic transplantation, which offers real benefits to patients but is slower than traditional surgery.

Jeremy's leadership has helped move iiShield from an idea to an emerging global innovator. The company secured a major win in 2021 when it received a two million dollar grant from the NSW Health Medical Device Fund and has found continued support, with a Seed round closed in 2025, led by the Sydney Angels. This support enabled the pursuit of international patents, regulatory preparation, and a multi-centre study to move the product closer to clinical use. Today, iiShield holds IP protection in ten key markets and the device has a defined regulatory pathway as a Class II medical device, validated through discussions with the FDA.

The company continues to refine its clinical-grade prototypes at the Cicada HealthTech Hub, working alongside clinicians and engineers. Interest from the transplant community has been strong. Surgeons everywhere understand the pressure of working against the clock and recognise how even a small reduction in warm injury can translate to years of improved organ function for patients.

The implications go well beyond individual surgeries. By reducing early damage to transplanted kidneys, the jacket could make more donor organs viable, including those from older or medically complex donors. These marginal kidneys are often rejected due to fear of poor outcomes. With thermal protection, more of them may become suitable for transplant, easing the global shortage that leaves thousands of patients waiting.

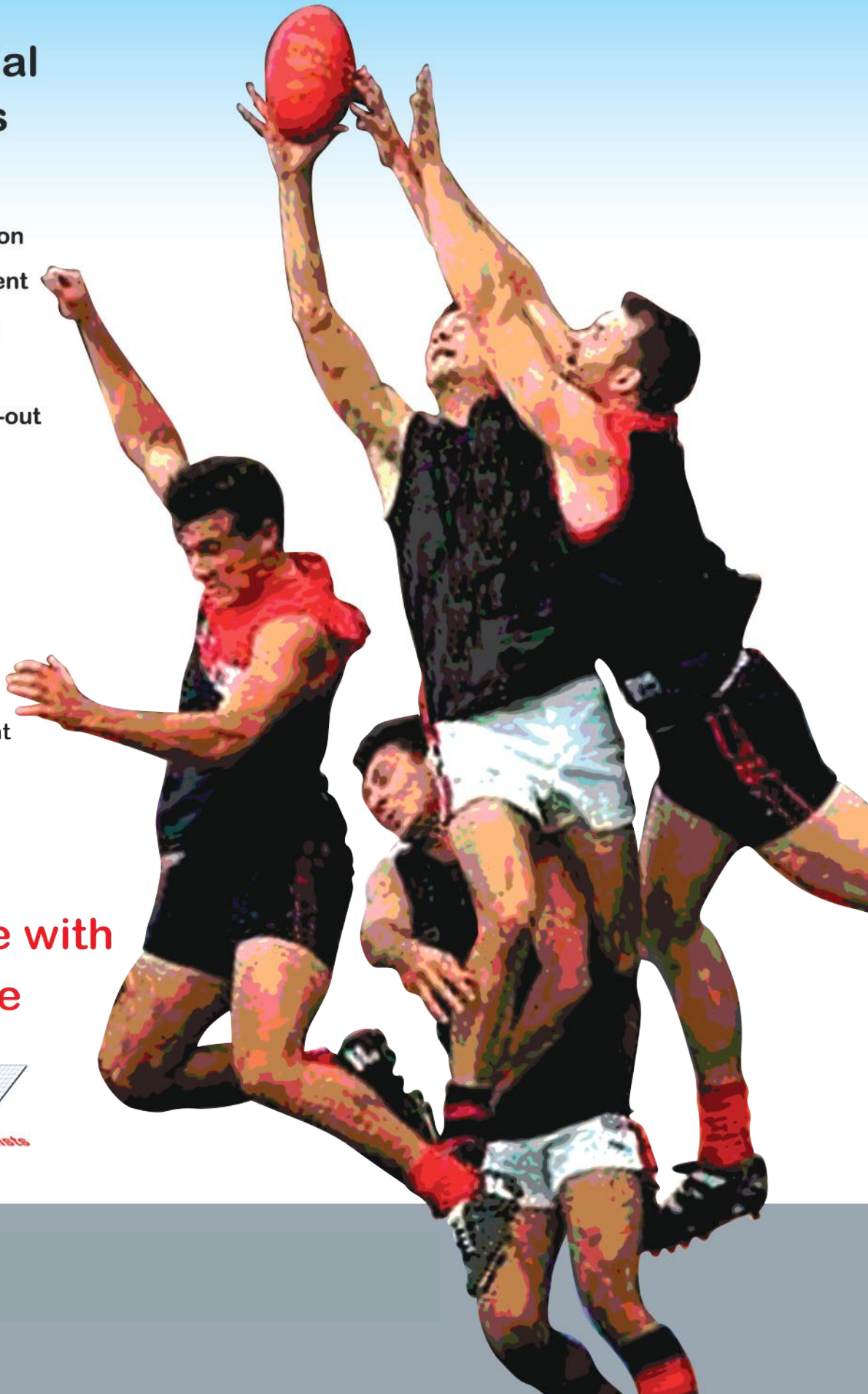
Jeremy Kwarcinski's story is one of persistence, ingenuity, and the power of multidisciplinary collaboration. His work with iiShield reflects a philosophy shared by many innovators in healthcare, which is that sometimes the biggest breakthroughs come from simple ideas executed with precision. By focusing on the physics of the transplant process rather than the biology alone, iiShield shows that profound improvements in patient outcomes can come from reimagining long-accepted limitations. Jeremy's journey from biomedical engineer to the leader of a company poised to transform transplantation is a testament to what happens when engineering meets genuine clinical need, and when people are willing to challenge the way things have always been done. ■

DatapharmAustralia

Fully integrated eCRO Established 1987

Clinical Trial Specialists

- Feasibility
- Investigator Selection
- Protocol Development
- Clinical Trial Set-up
- CRF Design
- Site Initiation/Close-out
- Monitoring
- Data Entry/Capture
- Data Management
- Data Validation
- Biostatistics
- Medical Writing
- Project Management
- Pharmacovigilance



Reach for Excellence with Experience

Project Advantage™ Datapharm Australia Clinical Trial Specialists

FOREWORD DDF & BioBeacon 2025 Gamechangers

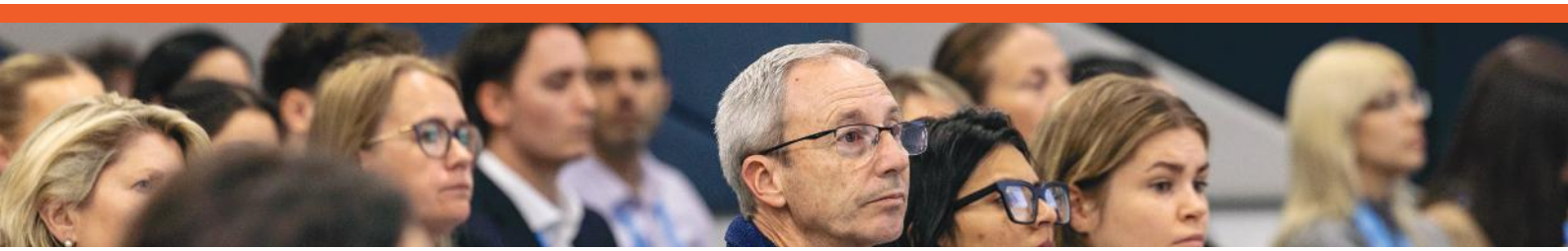
Professor Michael Kassiou
Chair of the DDF

Each year, researchers can connect with peers at a variety of conferences, symposia, and meetings. But as commercialisation becomes an increasingly important step toward addressing real-life health issues—of taking therapeutics from bench to bedsides where they are urgently needed—spaces where academia and industry connect have become a new mainspring of therapeutic innovation.

The NSW Drug Discovery Forum was launched by the Centre for Drug Discovery Innovation in 2024 as a keystone event to generate new connections between academia and industry from around the state. Since then, the forum has become a dynamic platform that enables researchers to learn more about commercialisation pathways and translation challenges specific to their projects, as well as for investment and biotech professionals to unearth leading-edge ideas for uptake. Based on a live pitch-and-feedback format, the forum is also unique in being a productive endeavour not only for active participants, but for a broader audience.

The 2025 forum was powered by BioBeacon in partnership with ARCS Australia, reaching new heights with over 100 attendees from across the state. The Biobeacon Gamechangers Cohort represented institutions from around NSW, and pitched work that tackled globally significant health challenges, including neurological and CNS disorders, infectious diseases, oncology and cardiometabolic diseases. Expert panellists brought decades of collective biotech and investment experience, representing twelve companies with long-standing national and global profiles, including Tenmile, IP Group, and Uniseed. The innovative health solutions explored on the day ranged from therapeutic hypothermia for the treatment of stroke, to the development of new therapies targeting triple-negative breast cancer. It has been deeply gratifying to see the forum evolve into a leading event for therapeutic commercialisation in NSW. As the Centre for Drug Discovery Innovations gears up to deliver the 2026 Biobeacon-powered forum, I look forward to hearing more leading-edge pitches on June 11.

2025 COHORT



BIOBEACON DDF AND GAMECHANGERS COHORT

In 2025, BioBeacon partnered with the Drug Discovery Forum to shine a light on the next wave of visionary researchers whose cutting edge work is poised to deliver future breakthroughs and redefine medical possibilities. These individuals are tackling some of the most challenging diseases and fundamental biological problems, laying the groundwork for therapies and diagnostics that will shape the future of healthcare.

	Researcher Name	Affiliation	Core Research/ Innovation	Key Market/ Disease Area	Impact Pathway
30	Professor Julie Atkin	Macquarie University	Small molecule drug & biomarker for motor neuron disease	Motor Neuron Disease (MND)/ALS	N/A
31	Dr Alexandra Daryl Ariawan	Macquarie University	Cyclic peptide therapeutics to treat Alzheimer's Disease	Alzheimer's Disease	N/A
34	Nathan Bryant	The University of Newcastle	Small interfering RNA for the treatment of rhinovirus infections	Respiratory viral infections (e.g., rhinovirus, COVID-19)	Ena Respiratory (industry partner)
36	A/Prof David Croucher	Garvan Institute	Selective inhibition of oncogenic JNK signalling in metastatic triple negative breast cancer	Metastatic Triple Negative Breast Cancer (TNBC)	N/A
38	Dr Pegah Varamini	The University of Sydney	Targeted peptide-drug conjugate platform for triple-negative breast cancer	Triple Negative Breast Cancer (TNBC)	N/A
40	Dr Daniel Beard	The University of Newcastle	Nanonitrate: Selective brain blood flow enhancer to treat stroke	Stroke	Shear Flow (startup)
42	Dr Kirsten Coupland	The University of Newcastle	A drug-based means of inducing therapeutic hypothermia	Stroke	N/A
43	Dr Bijay Dhungel	Centenary Institute	Receptor modulation to lower AAV gene therapy dose	Gene therapy, rare genetic diseases (e.g., Pompe disease)	AAVec Bio (startup)
46	Dr Lisanne Spenkelink	University of Wollongong	Detection of low-abundant biomarkers using single-molecule sensing	Disease diagnostics	N/A

Professor Julie Atkin

Pushing the Frontiers of Motor Neuron Disease Research

Professor Julie Atkin's journey into Motor Neuron Disease research began long before she became one of Australia's most respected leaders in the field. Trained as a cell biologist and biochemist, her early career was shaped by a fascination with the intricate machinery that sustains human cells. Over time she became deeply compelled by a group of devastating illnesses that relentlessly destroy motor neurons. Twenty-three years ago she made a decisive turn in her scientific path and committed herself entirely to understanding Motor Neuron Disease, a commitment that continues to define her work today.

When she moved to Macquarie Medical School's Motor Neuron Disease Research Centre, she stepped into an environment where this philosophy could flourish. Today she co-directs the Centre and leads the Cellular Biology and Therapeutics team, a group dedicated to uncovering the cellular failures that drive MND and developing interventions that can stop them.

Over the years the team has uncovered several groundbreaking mechanisms relevant to MND and frontotemporal dementia. One early breakthrough was identifying the normal function of C9orf72, a protein commonly mutated in the most frequent genetic form of MND. This finding illuminated entirely new pathways involved in the disease and shifted global understanding of how ALS develops. They also showed that TDP-43, a protein that misbehaves in nearly all MND cases, plays an essential role in repairing DNA in neurons. Another discovery revealed a unique form of the FUS protein that accumulates outside cells, a finding that continues to influence how researchers understand protein toxicity in neurodegeneration.

These discoveries created the backbone of a complete pipeline that runs from foundational biology to drug development. For more than a decade the team has been testing new small-molecule drugs in cells, zebrafish and mouse models. Several compounds have shown the ability to protect motor neurons and improve motor function in mice , a major step toward effective treatment. This comprehensive approach is rare in neurodegeneration research and positions Professor Atkin's group to move quickly when promising results appear. Patents for the lead drug candidates are now pending, and collaborations with chemists at La Trobe University are refining the drugs so they are suitable for human trials.

A crucial parallel effort in her lab focuses on biomarkers. MND is not a single uniform disease. Symptoms vary widely and different molecular pathways drive degeneration in different patients. This variability contributes to the difficulty of diagnosing and treating the condition. Professor Atkin aims to identify protein markers that explain why some motor neurons are more vulnerable than others. By pinpointing molecular signatures linked to disease onset and progression her work could shape a precision medicine approach where therapies are tailored to specific subtypes of MND.

This effort is strengthened by one of Australia's most powerful research assets. Macquarie University's Neurodegenerative Diseases Biobank holds a rich collection of samples from MND patients along with detailed clinical information. The biobank is certified by NSW Health for high-quality collection and has become a cornerstone of biomarker discovery. The ability to analyse samples collected at different stages of a patient's disease allows Professor Atkin's team to track molecular changes as MND progresses and test whether potential biomarkers hold up in real-world conditions.

The urgency behind this work is profound. MND, including its most common form ALS, is a rapidly progressive illness that leads to paralysis and death, often within a few years of diagnosis. Treatments such as riluzole and edavarone offer limited benefit. There is no test that can diagnose the disease early or reliably track its progression. Professor Atkin's drug and biomarker program directly addresses these gaps. She has explained that cellular stress pathways, including DNA damage and protein misfolding, are central drivers of neuron death. Her research on proteins such as protein disulphide isomerase (PDI), a protective factor that her team identified functions in DNA repair and prevents many cellular events in MND, has shown that enhancing these natural repair mechanisms may counteract degeneration. These insights continue to guide her drug design strategy.

Her work has been recognised by major organisations, including FightMND and the NHMRC. It has also captured interest through the NSW Drug Discovery Forum where she presented her emerging drug and biomarker program in 2025. This forum connects academic breakthroughs with industry partners and signalled the readiness of her discoveries for the next stages of translation.

Today Professor Atkin stands at the forefront of a new direction in MND research. Her focus on targeted therapies and precision biomarkers represents a shift towards treatments grounded in the specific biology of each patient. If her drug candidates continue to succeed, they could form the basis of one of the first disease-modifying therapies for MND. Likewise, a validated biomarker could transform diagnosis and dramatically improve clinical trial design.

Her journey shows what is possible when deep curiosity, scientific rigour and translational ambition come together. Professor Atkin and her team are pushing MND research out of the realm of inevitability and into a future where early diagnosis and effective treatment may finally be within reach. ■

Dr Alexandra Daryl Ariawan

Pioneering Cyclic Peptide Therapeutics for Alzheimer's Disease

The path that led Dr Alexandra Daryl Ariawan into the heart of Alzheimer's disease research began long before she joined Macquarie University's Dementia Research Centre. As a young scientist fascinated by the structure and behaviour of molecules, she first carved her place in medicinal chemistry during her doctoral studies at the University of New South Wales. There she immersed herself in the world of small molecules and peptides, contributing to cancer drug discovery and sharpening both her synthetic and computational chemistry skills. That early training became a powerful foundation, shaping a career defined by curiosity, innovation and an unrelenting drive to solve problems that matter.

After completing her PhD, Dr Ariawan joined Macquarie University under Professor Lars Ittner, where her research direction shifted toward neurodegeneration—a field that demands both scientific precision and creative thinking. It was during her time at Macquarie that she received an NHMRC Ideas Grant in 2021 to study the protein TDP-43 in frontotemporal dementia and motor neuron disease. The award validated her growing reputation for tackling difficult biological challenges through clever molecular design and marked the beginning of her deeper involvement in diseases that rob memory, personality and independence from millions of people worldwide.

This trajectory has solidified her role at Macquarie University, where she works alongside renowned dementia researcher Professor Lars Ittner. At the Dementia Research Centre she is pioneering a new class of therapeutics for Alzheimer's disease built around cyclic peptides. These molecules are designed to block the toxic effects of tau, the destructive protein that clumps within neurons and contributes to the cognitive decline experienced by people with dementia. While global efforts for decades focused heavily on amyloid beta, repeated failures of amyloid-targeting drugs opened the door to new strategies. Tau has since emerged as a critical target, and Dr Ariawan is among the researchers leading this shift.

Cyclic peptides are at the centre of her approach. Unlike traditional small molecule drugs that often struggle to disrupt complex protein interactions, or large biologics that cannot easily enter the brain, cyclic peptides offer a unique balance. Their looped structure grants them stability, high binding affinity and selectivity. They can also be ➢

engineered to cross the blood brain barrier. These traits give them strong potential to interfere with the molecular events that drive neuron death. Dr Ariawan describes cyclic peptides as the future because their resemblance to natural human proteins means they come with lower safety risks and can be tailored for multiple disease pathways.

Her research program spans several interlinked stages. The first involves preclinical testing in genetically engineered mouse models of Alzheimer's disease. Peptide treatment is assessed through EEG recordings, behavioural tests such as the water maze, and detailed analysis of brain tissue. The second stage moves into human biology using brain organoids, tiny three dimensional tissues grown from stem cells that mimic aspects of the human brain. These organoids allow her team to validate promising peptide candidates far earlier and with more precision than traditional cell culture methods. If successful, the third stage focuses on preparing the treatment for human use, including developing a formulation that remains stable through the digestive system and can reach the brain. This full pipeline approach reflects both scientific depth and an awareness of translation pathways that can take discoveries from the lab into clinics.

A major recognition of her progress came in 2025 when she received the AbVance Commercialisation Award at the NSW Drug Discovery Forum. Beyond the accolade itself, the award provides a vital industry support package from Ab Initio Pharma, including formulation, analytical development and preclinical services. This practical assistance often accelerates development more effectively than direct financial funding alone. It signals that her peptide candidates are now maturing into viable drug leads with potential for genuine commercial and clinical traction.

Her work is further supported by the Dementia Australia Research Foundation and the community driven Bondi2Berry initiative. Together these supporters help advance a project that could reshape the therapeutic landscape for Alzheimer's disease. The stakes could not be higher. More than fifty five million people globally live with dementia and existing medications only manage symptoms rather than slow or stop the disease process. A successful cyclic peptide therapeutic has the potential to become a first in class treatment that directly modifies disease pathways.

Dr Ariawan's journey continues at pace. She brings together computation, chemistry, neuroscience and a translational mindset in a way that is rare in early career researchers. Her vision is clear. By turning stable, well designed peptides into precision weapons against tau and other toxic proteins, she aims to give future patients and families something they currently do not have. A realistic path toward stopping Alzheimer's disease rather than simply living with it. ■

mexec
connecting people
for success

Who Is mexec?

mexec is an **Executive Search Recruitment** firm supporting clients to bulid their leadership team. mexec also supports individuals seeking to transition to a new role through our mexec jobstrategy™ and interview programs. We are experienced in resourcing staff for companies, including Executive Search and selection services to build your leadership team.

Why Search With mexec?

- Established partner and long-term supporter of ARCS and the clinical research and life sciences sectors
- Access to our extensive local and international network of regulatory and clinical research professionals
- mexec has proven success in recruiting for clinical and regulatory roles at all levels. Scan the QR for examples.

Meet The mexec jobstrategy™ & Recruitment Team

Marilyn Jones
mexec Director & Founder

Dr Sue Forrest
Senior Consultant

Dr Mark Thomas
Recruitment Consultant

Janice Woods
Manager - mexec jobstrategy™ program

Clarissa Merrigan
Recruitment Administrator

Nick Jones
Finance Administrator

Contact mexec today for all your recruitment and employment needs at careers@mexec.com

Nathan Bryant (The University of Newcastle)

Targeting Rhinovirus Infections with siRNA

When Mr Nathan Bryant began his scientific journey, he did not set out to solve one of the oldest problems in medicine. Yet his work today is part of an ambitious attempt to create the world's first clinically approved, targeted antiviral therapy for rhinovirus, the virus responsible for the common cold. What began as a fascination with molecular biology and respiratory disease has evolved into a translational research program that could change how we manage respiratory infections.

Mr Bryant's path has been shaped by the environment around him, particularly the vibrant research community at the University of Newcastle and the Hunter Medical Research Institute. Working alongside Professor Nathan Bartlett, a global leader in viral immunology and respiratory disease, Bryant has become part of a team known internationally for creating sophisticated in vivo and human airway epithelial models of rhinovirus infection. The group's work is grounded in real clinical need. Although the common cold is mild for most people, it causes serious complications in those with asthma, chronic obstructive pulmonary disease or weakened immune systems. A routine cold can send an asthmatic patient to hospital, yet there are still no antiviral medications approved for rhinovirus.

Bryant's research seeks to change that through a strategy rooted in RNA interference (RNAi). RNAi is a natural cellular process that silences unwanted or harmful genetic messages. By designing short interfering RNA (siRNA) molecules that bind to rhinovirus RNA, Bryant can mark the virus for destruction and halt its ability to replicate. The concept is elegant. If the viral RNA is chopped up before it can produce viral proteins, the infection is controlled at its source. The aim is to introduce these siRNAs directly into airway cells using a nasal spray or inhaler so that the treatment can act in the earliest stages of infection.

The idea of silencing the common cold might sound bold, but Bryant and his colleagues have spent years developing the tools needed to test it. Professor Bartlett's own career began with an early scholarship at what is now the Australian Centre for Disease Preparedness. This introduced him to virology research and later led to postdoctoral work at Oxford University on viral vector vaccines and at Imperial College London on viral exacerbations of asthma and COPD. When he returned to Australia in 2015 to join the Hunter Medical Research Institute, he brought with him a deep understanding of how respiratory viruses invade and damage the airway.

Seed funding from Asthma Australia and HMRI allowed the group to develop the sophisticated virus infection models that now underpin Bryant's work. These models have helped them reveal the earliest steps in respiratory infection and provided a platform to trial antiviral approaches like siRNA. The collaboration with industry partner Ena Respiratory further advanced the program and helped create a nasal spray designed to stimulate innate immune defences in the upper respiratory tract. This spray entered Phase 1 clinical trials in 2021 and demonstrated the strength of the group's translational pipeline.

Bryant's work builds on this foundation while pushing into new territory. Delivering siRNA into the airway is not easy. The molecules are fragile and can be broken down quickly. They also have trouble entering cells in high enough amounts. Bryant is exploring next generation delivery systems, including nanoparticles and chemically modified RNA that is more stable. If he succeeds, his approach could become the first targeted antiviral therapy for the common cold, a virus that causes immense global burden through lost productivity, hospital visits and complications in vulnerable people.

The promise of the work became even clearer during the COVID pandemic. The knowledge the group had built in rhinovirus research translated rapidly to coronavirus, demonstrating how adaptable the platform is. A treatment that targets early infection in the upper airway could make a significant difference during future outbreaks, particularly for viruses that spread easily before symptoms appear.

Bryant's research has begun to attract wider attention. It was highlighted at the NSW Drug Discovery Forum 2025 and featured in a recent narrative review outlining opportunities for RNA therapeutics against rhinovirus. The broader scientific community is watching closely. After the pandemic, there is renewed interest in therapies that can provide fast, broad protection against respiratory viruses when vaccines are unavailable or less effective.

The University of Newcastle and HMRI are well positioned to support this effort through strong translational programs and industry engagement. Bryant is already contributing to collaborative grants and publication efforts, and early preclinical findings suggest that the siRNA platform can reduce viral load and improve outcomes in animal models of infection.

While the common cold might seem like an unlikely target for cutting edge genetic medicine, Bryant sees it differently. Rhinovirus is both widespread and underestimated. It is a driver of serious illness in millions of people each year. By targeting the virus at the molecular level, Bryant hopes to produce a therapy that protects the community, shields vulnerable groups and transforms how we respond to respiratory threats. His work is a reminder that even everyday illnesses deserve innovative solutions and that the future of antiviral therapy may begin with the virus most people take for granted. ■

A/Prof David Croucher

Rewriting the Story of Metastatic Triple Negative Breast Cancer

When Associate Professor David Croucher first began investigating the tangled web of cellular signalling that fuels aggressive cancers, he was struck by the puzzle of one particular pathway. It was a molecular contradiction that seemed almost poetic in its complexity. The JNK pathway could protect healthy breast cells by helping them maintain normal structure and respond to stress, yet in the harsh environment of triple negative breast cancer it shifted allegiance and became a driver of metastasis. That paradox would become the foundation of his research career and the catalyst for a therapeutic strategy that may, in time, reshape how clinicians treat one of the deadliest forms of breast cancer.

Triple negative breast cancer, or TNBC, accounts for about 15 to 20 per cent of breast cancers in Australia. Each year around 3,000 women receive this diagnosis and many face a gruelling path. TNBC lacks the hormone receptors that make targeted therapies possible in other breast cancers. Standard care relies heavily on chemotherapy, immunotherapy, and surgery, yet about 40 per cent of patients relapse within two years. When relapse occurs, the disease often spreads quickly and there is no drug available today that prevents the onset of metastatic outgrowth during remission. That gap is where Croucher has placed his scientific focus.

Early in his career, he recognised that JNK was central to the spread of TNBC. Previous attempts to block the pathway had failed. Broad JNK inhibitors performed poorly in clinical trials for multiple diseases, including solid tumours. These older therapies indiscriminately shut down the entire pathway and removed both its beneficial and harmful signals. That approach produced intolerable side effects and limited clinical potential. Croucher believed the failures reflected the wrong strategy, not the wrong target.

Along with Dr Sharissa Latham at the Garvan Institute, he built a research program designed to map the fine detail of JNK signalling. Working with advanced imaging and computational network modelling, his team is unravelling the geography of the pathway inside cancer cells. The hope for this approach is to be able to identify and then target precisely where TNBC is most lethal. Currently, he is undertaking work that suggests we may be able to selectively inhibit the oncogenic part of the JNK pathway while leaving the beneficial parts intact.

Throughout this journey, A/Prof Croucher and Dr Latham have received support from the National Breast Cancer Foundation and Cancer Council NSW, and this work has been showcased at major scientific forums, including the NSW Drug Discovery Forum. They continue to investigate on target toxicities, refine improved analogues, and explore whether the same pathway biology applies to other rare tumour types that have high relapse rates due to undetectable micrometastatic disease. Such indications could allow early clinical trials in smaller patient populations and help accelerate translation.

For patients living with the fear of recurrence after primary treatment for TNBC, this research represents genuine hope. A therapy that prevents metastatic outgrowth at its origin would fundamentally change the story of TNBC. What began as a puzzling contradiction inside a signalling pathway is becoming a breakthrough that saves lives. As Associate Professor Croucher and his collaborators work on the next breakthroughs, the oncology community is watching closely. Their vision for a selective JNK inhibitor is steadily moving from concept to reality, guided by scientific curiosity, careful observation, and a determination to give women facing TNBC a future beyond relapse. ■

SMARTWAYS
logistics for life

Revolutionising Clinical Trials with Instant Setup, Real-Time Data, and Seamless Efficiency.

SMARTCLINICAL

Reduced Set-Up Time
We have reduced the setup time from multiple weeks to minutes by having data provided through our online portal, instead of typing details into spreadsheets and then waiting for others to action them.

Data Integrity
With a database of sites all around ANZ, managed by the sites themselves, data is accurate and available with the click of your mouse.

Real-Time Study Adjustments
With all details in one place, you can add and remove sites in seconds, allowing more flexibility.

Real-Time Sample Tracking
With our industry leading technology all information is available in dashboards by simply logging in to the Smartways system. In the future, you will even be able to see sample collection time points and sample types.

Site Advantages
Sites will be able to book shipments in a fraction of the time they currently do, allowing better patient care. Sites will also manage their own details, ensuring addresses and contact details are accurate and updated as required.

Green Solutions
No more paper is sent to sites as our setup includes an email and all relevant details are within the portal and found using the study protocol as a unique identifier. And of course, Smartways is still 100% carbon neutral.

No lost paperwork
All details stored in one place, on SmartClinical.

For a free demonstration or to find out more please contact:

Marcin Drag | Head of Clinical
m +61 437 505 569
e marcin.drag@smartwayslfl.com

AU +61 2 9808 2750
NZ +64 9 526 4222

www.smartwayslfl.com

Dr Pegah Varamini

Pioneering Precision Peptide Drug Conjugates for Triple Negative Breast Cancer

When Dr Pegah Varamini reflects on the path that led her to develop one of Australia's most promising targeted therapies for triple negative breast cancer, she often speaks about the personal experiences that shaped her scientific purpose. Losing her sister to cancer left a mark that would eventually guide her research philosophy. It inspired her commitment to designing therapies that are both effective and kind, capable of attacking cancer without inflicting unnecessary suffering. That mission now sits at the heart of her work at the University of Sydney, where she leads the Breast Cancer Targeting and Drug Delivery Group in the Sydney Pharmacy School.

Triple negative breast cancer, known for its speed, severity, and scarcity of treatment options, affects younger women and represents a major unmet clinical need. Unlike other breast cancer subtypes, TNBC lacks the three receptors that make targeted treatments possible. The result is a brutal reliance on chemotherapy, which causes widespread toxicity and yet often fails to prevent relapse. More than 45 percent of patients experience recurrence within two to three years and TNBC accounts for 40 percent of all breast cancer deaths in Australia. Current options remain limited: PARP inhibitors help only a narrow group of patients, immunotherapy plus chemotherapy delivers modest benefit, and the latest antibody drug conjugates offer only short extensions in progression-free survival. As Dr Varamini notes, and as echoed by multiple KOLs, the situation is clear. Better therapies are urgently needed.

This is where her innovation shines. Her peptide drug conjugate platform, nearly a decade in development, acts as a guided missile against cancer. The technology connects a homing peptide to a powerful cytotoxic payload. The peptide identifies and binds to a specific receptor found abundantly on TNBC cells and the drug is released only once inside the cancer cell. It is a simple idea executed with remarkable sophistication. From a library of forty peptides designed and screened for stability, binding, and specificity, her team selected a single highly stable candidate. To this peptide they attached a toxin more than one hundred to a thousand times stronger than standard chemotherapy agents. A clinically proven linker keeps the payload stable in circulation until it reaches the tumour.

The target of this guided approach is present in up to one hundred percent of TNBC tumours but rare in visceral healthy tissue. Once the peptide binds to the receptor, the conjugate is drawn into the cell. Inside the endolysosome, the enzymes cuts the linker and releases the warhead, which then disables the cell's internal scaffolding and triggers its death. The elegance of the approach lies in its precision. It keeps toxicity contained and allows the use of stronger drugs that would otherwise be too dangerous.

Dr Varamini's lead candidate, has produced striking preclinical results. In tumour bearing models, once weekly dosing suppressed tumour growth even at low concentrations. Twice weekly dosing was well tolerated. In a liver metastasis model, treated animals showed no significant metastatic spread. When directly compared with Trodelvy in a resistant and fast growing model, the differences were stark. Trodelvy had minimal effect. The peptide drug conjugate, by contrast, triggered deep tumour regression, even in large, treatment resistant tumours. Its small molecular size allowed it to infiltrate tissue that bulkier antibody drug conjugates struggle to penetrate.

These breakthroughs are supported by a strong foundation of recognition and funding. In 2018, her early promise was acknowledged with a Fresh Scientist of the Year award. In 2023, she secured a half million dollar Australia's Economic Accelerator Ignite grant to advance manufacturing and prepare her candidate for clinical translation. That support is helping to refine the chemistry, scale production for Good Manufacturing Practice, and conduct the regulatory groundwork needed for first in human trials. She has enlisted regulatory advisors, partnered with CSIRO, and joined the Stanford SPARK Global program, which connects leading academic innovators with seasoned commercial mentors around the world.

While the science is compelling, it is her story that brings the work into sharp relief. Her work to address the unmet need in TNBC began with a first-in-class peptide drug conjugate designed to provide a truly targeted option and to interrupt the pathways that drive tumour growth and metastasis. Recognising that TNBC patients still endure highly aggressive cytotoxic regimens, she later explored nano-curcumin as a complementary supportive strategy to help patients better tolerate treatment and reduce the risk of metastatic spread.

The next chapter is taking shape. A decade of foundational research has laid the groundwork, and advanced preclinical studies are now progressing. With safety evaluation and translational planning underway, her goal is clear: to reach Phase 1 clinical trials and turn scientific promise into real impact for patients.

Dr Pegah Varamini is not only developing a new therapy for triple negative breast cancer — she is helping to reshape what targeted cancer treatment can achieve. By letting biology guide design and anchoring her work in patient need, she is advancing precision medicine toward practical, near-term impact. ■

Dr Daniel Beard

Using Nanonitrate to Buy Time for the Brain

Dr Daniel Beard's career has been shaped by a single question. How do you save the brain when every passing minute destroys millions of neurons during a stroke? That question first took root during his early training in neurovascular biology and grew stronger during his time as a Postdoctoral Researcher at Oxford University. It continued to guide him when he returned to the University of Newcastle to establish the Neurovascular Research Laboratory. Today, that question is the driving force behind one of Australia's most promising stroke innovations. It is a nanoparticle therapy called Nanonitrate and it aims to give stroke patients something they currently lack. Time.

Stroke is one of the world's most devastating medical emergencies. One in four people will experience a stroke in their lifetime and it costs the Australian economy roughly nine billion dollars every year. When an artery that feeds the brain is blocked, neurons begin to die within minutes. Emergency teams race the clock and rely on clot busting drugs and mechanical thrombectomy to reopen the artery. These treatments can be highly effective but only if they are delivered early. In practice, only a fraction of patients are treated in time and only half of those treated benefit. Distance, delayed recognition and restricted access compound the challenge, especially in regional Australia. The familiar refrain in stroke medicine says it all. Time is brain.

Dr Beard's research focuses on a lesser known but powerful feature of brain circulation. Collateral vessels. These small bypass vessels can deliver blood around a blockage and keep tissue alive. They cannot fully compensate for an occluded artery but good collateral flow can dramatically slow the pace of brain injury. Early in his career, Dr Beard became fascinated by an observation that changed his scientific path. During stroke, blood moving through collateral vessels surges at very high speed. This creates a huge rise in shear stress, the frictional force of blood against the vessel wall. His team discovered that this stress is about six times higher in stroke affected collateral vessels than in normal vessels. That single insight planted the seed for Nanonitrate.

Collaborating with Harvard University bioengineers Professor Donald Ingber and Associate Professor Netanel Korin and working alongside stroke clinician Professor Neil Spratt, Dr Beard helped develop a nanoparticle system that could sense and respond to this spike in shear stress. Each nanoparticle is made from a biocompatible PLGA matrix that carries tiny amounts of nitroglycerin, a vasodilator commonly used to treat angina. The particles remain intact in normal circulation. Once they encounter shear stress above 100 dynes per square centimetre they break apart and release the nitroglycerin directly into the collateral vessels. The drug then relaxes those vessels and increases blood flow to the endangered brain tissue.

This is the core of the Nanonitrate concept. A therapy that activates itself only where the brain needs it. A therapy that delivers vasodilation without the drop in systemic blood pressure that makes ordinary nitroglycerin unsuitable for stroke patients. Essentially, the nanoparticles put the brain on life support while clinicians work to remove the blockage.

In laboratory stroke models, the results have been remarkable. Nanonitrate produced a rapid rise in collateral blood flow and achieved what free nitroglycerin could not. It improved perfusion without lowering blood pressure. Tissue analysis revealed smaller infarct volumes, greater salvage of vulnerable tissue and reduced neurological deficit. The data showed a strong relationship between improved collateral flow and smaller stroke size. Better flow meant more brain saved.

This scientific progress caught national attention. In 2024, Dr Beard won the Proto Axiom Challenger Prize, securing one hundred and fifty thousand dollars to advance Nanonitrate. Judges praised his approach as a potential game changer in acute stroke care. His university also highlighted the work as a major step toward extending the treatment window for patients who currently miss out on clot retrieval.

To prepare for clinical translation, Dr Beard and the team at his spin out company Shear Flow have set out two major milestones. The first is manufacturing and safety de risk. This involves transferring the nanoparticle technology to a United States based manufacturing partner, replicating the particles at scale and completing pharmacokinetic, pharmacodynamic and toxicology studies. The second milestone involves testing Nanonitrate in a large animal stroke model at the University of Adelaide, where the anatomy allows investigators to evaluate how well the therapy enhances collateral perfusion in a brain that more closely reflects human physiology.

Although stroke has a history of failed drug trials, Dr Beard is confident that Nanonitrate is tackling the root problem. Most damaged brain tissue dies because blood supply fails, not because the tissue is beyond repair. By selectively boosting that supply, Nanonitrate may extend treatment times, improve eligibility for thrombectomy and reduce disability on a large scale. It may even open a pathway for earlier intervention in the ambulance, long before the patient reaches hospital.

Dr Beard has suggested that other conditions such as peripheral arterial disease or pulmonary hypertension may also benefit from the same shear activated delivery system.

From a question first formed in a lab to a nanoparticle poised for translation, Dr Daniel Beard's journey reflects deep scientific curiosity and a clear vision of patient impact. If Nanonitrate succeeds in clinical trials, it could one day become as standard in emergency stroke care as clot busting drugs or defibrillators. A small innovation with the potential to save thousands of brains and change lives. ■

Dr Kirsten Coupland

Pioneering Drug-Induced Hypothermia for Stroke Neuroprotection

When Dr Kirsten Coupland began her scientific career, she was driven by a fascination with how the body regulates itself in moments of crisis. This early curiosity eventually led her to one of the greatest challenges in modern neurology. Stroke affects about 45,000 Australians every year and remains one of the leading causes of disability and death. The urgency around treatment is immense, yet less than one fifth of patients with ischaemic stroke are eligible for current therapies because the treatment window is narrow and access to specialist care can be limited, particularly in regional communities. For Dr Coupland, a physiology researcher at the University of Newcastle and part of the Hunter Medical Research Institute's Heart and Stroke Program, the question became clear. What if we could slow the brain's deterioration long enough for more patients to receive definitive treatment?

Her answer lies in therapeutic hypothermia. Cooling the body by even a few degrees slows cellular metabolism and has been shown in preclinical models to reduce the size of the infarct after stroke by an average of about 40 per cent. The problem is that cooling a conscious human is extremely difficult. Traditional methods of inducing hypothermia including cooling pads and ice infusions are either too invasive or fail to achieve target temperature in conscious patients. Furthermore, existing hypothermia protocols require intensive care and general anaesthesia, with half the patients developing complications such as pneumonia. Therapeutic hypothermia works, but the practical barriers have prevented its widespread use.

Dr Coupland's breakthrough is to bypass physical cooling altogether and instead use a drug to instruct the brain to lower the body's internal temperature set point. Rather than forcing the body to cool from the outside, her approach convinces the hypothalamus to initiate cooling from within. It has the potential to transform hypothermia from a complex hospital-based intervention into something that could begin in an ambulance or an emergency department anywhere in the country.

The scientific foundations of her work were laid during a collaboration with researchers at K.U. Leuven in Belgium who specialise in nanobody technology. Neurotensin, a natural neuropeptide, can induce deep hypothermia when it reaches the central nervous system, but it cannot cross the blood brain barrier on its own. The Leuven group had engineered small antibody fragments that act as shuttles, carrying compounds directly into the brain. By linking neurotensin to one of these nanobodies, Dr Coupland and her collaborators produced a pharmacological construct that could reliably drop the core temperature of awake mice by six degrees for roughly 80 minutes. This depth and duration of cooling is more than sufficient to protect brain tissue based on preclinical stroke research. Even shorter and milder cooling, such as one hour at 33 degrees, may be clinically valuable and far less likely to cause pneumonia.

Dr Coupland's laboratory has advanced the field by adapting A/Prof Alan Urban's awake stroke model. This allows the team to evaluate the true effect of hypothermia without the confounding influence of anaesthetic drugs on body temperature and infarct volume. They are currently collecting pharmacology data, biodistribution data, and safety data to support future development. The team is strengthened by Professor Neil Spratt, a stroke neurologist with extensive clinical trial expertise, and Associate Professor Martin Dewilde of K.U. Leuven whose nanobody engineering has been crucial to the project. Work is also underway to extend the half life of nanobodies in the body, which may further improve the practicality of the treatment.

Her efforts have been recognised through awarding of a travel fellowship from The Research Foundation – Flanders (FWO) to work alongside her collaborators in Belgium and being selected as one of four finalists in the Newcastle Permanent and HMRI Innovation Accelerator Program in 2025. The accelerator provides funding, mentorship, and commercial expertise. Dr. Coupland received twenty thousand dollars in seed funding and the chance to compete for a two hundred thousand dollar prize to progress the therapy. The program also opened doors to industry advisors who are helping the project navigate manufacturing considerations, dosing strategies, and regulatory expectations. Media coverage through HMRI has described her project as making stroke treatment safer and more accessible, particularly for regional patients who currently face the greatest disadvantage.

The path to translation is not without challenges. Experts have advised her to consider additional indications such as neonatal care or pulmonary hypertension to de risk the asset and attract broader investment interest. Others have highlighted the value of her partnership with K.U. Leuven which is seen as a compelling gateway to European pharmaceutical companies. Building a multidisciplinary team early, particularly in regulatory affairs and advanced manufacturing, has been emphasised as essential for a therapy that sits at the intersection of neurology, immunology, and drug delivery.

Yet the promise of Dr Coupland's idea is undeniable. A simple injection that brings on a safe and controlled cooling response could democratise one of the most powerful neuroprotective tools available. It could allow paramedics to begin stroke treatment at the scene, preserving precious brain tissue long before a patient reaches hospital. In a country where distance often dictates outcomes, this innovation could change lives.

Dr Coupland is pushing toward a future where hypothermia is not a last resort in intensive care but a frontline therapy available to every Australian, no matter where they live. Her journey reflects the best of translational research, where curiosity meets compassion and science becomes a vehicle for hope. ■

Dr Bijay Dhungel

Reimagining Gene Therapy Through Receptor Modulation

At the Centenary Institute in Sydney, Dr Bijay Dhungel is part of a team working to solve one of gene therapy's most persistent challenges. While adeno associated viruses have become a cornerstone of modern genetic medicine, their promise has always been held back by a simple but daunting barrier. To treat many conditions effectively, especially those involving muscle or the central nervous system, extremely high doses of AAV vectors must be delivered. These doses can provoke serious immune reactions, cause liver toxicity, and in several clinical trials overseas, have resulted in fatal complications. Manufacturing such vast quantities of virus is also enormously costly, driving therapy prices into the millions. For years the field has been searching for ways to make AAV gene therapy both safer and more accessible.

For Dr Dhungel, the journey to this scientific frontier began in molecular biology and gene therapy research at The University of Sydney, with publications spanning cancer metastasis, gene fusion detection, and AAV transduction. These early studies taught him how viruses interact with human cells, how they navigate intracellular pathways, and how immune systems respond to their presence. When he joined the Centenary Institute, those foundations set the stage for a shift in focus. Instead of trying to change the virus, he began to explore whether changing the cell itself might offer a breakthrough.

That insight grew into a simple and powerful concept. If target cells could be made more receptive to AAV entry, the amount of virus required to deliver a therapeutic gene could be dramatically reduced. Rather than overwhelming the body with particles to ensure enough make it into the cells, what if the cells could be primed to take up more virus from the outset.

Working under the leadership of gene therapy expert Prof John Rasko and Dr Chuck Bailey, Dr Dhungel and colleagues identified a key leverage point. A protein called AAVR, discovered less than a decade ago, serves as a major entry receptor for AAV. In their research, they found a specific regulator, referred to as AAVR2, that when boosted in cells, significantly increases the efficiency of viral uptake. In other words, by increasing levels of AAVR2 in tissues like muscle or heart, they believe they can reduce the required dose of AAV vectors by five or even tenfold while achieving the same therapeutic effect. These discoveries have now been published in the prestigious journal Cell (Dhungel et al. Cell, 2025).

The potential impact is profound. A lower dose means a far lower chance of triggering dangerous immune responses. It means a large reduction in manufacturing costs. It means safer reinfusion if a patient ever needs a second treatment. Most importantly, it expands who can be treated. ➢

For conditions such as spinal muscular atrophy, Duchenne muscular dystrophy, and Pompe disease, where whole body delivery is required, dose safety limits have long restricted patients from accessing gene therapy.

Pompe disease is central to their proof of concept. This rare disorder affects roughly one in forty thousand people and causes progressive muscle weakness, heart problems, and severe breathing difficulties. Existing gene therapy approaches require large systemic AAV doses to reach muscle and cardiac tissues. By increasing AAVR2 levels before treatment, Dr Dhungel's team hopes the same therapeutic gene effect can be achieved with a fraction of the viral material. In practice, this may involve administering a short acting drug or biologic that temporarily elevates AAVR2 expression (e.g. using LNPs), followed by the gene therapy vector once cells are primed.

Australian support for the idea has been strong. In late 2024 the team secured a National Health and Medical Research Council Ideas Grant of $1.065 million for their project titled Enhanced adeno associated virus vectors for safer gene therapies. Around the same time, AAVec Bio, a spin out company connected to the research group, received $500,000 from CUREator, Australia's national biotech incubator. CUREator funding not only provides capital but also commercial and regulatory guidance, setting the stage for eventual translation of the technology into industry partnerships and clinical development.

The story behind this work is one of incremental discovery building toward a clear goal. Early in his career, Dr Dhungel studied how AAV moves through cells. Later he examined how AAV triggers immune responses. Now that knowledge converges into an approach that shifts the paradigm. Instead of pushing the limits of virus manufacturing and dose escalation, his strategy focuses on making the patient's biology work with the therapy. It is a subtle reframing but an important one. Rather than trying to out engineer nature, the team is coaxing cells to become more inviting hosts for the therapeutic virus.

The broader gene therapy field is watching developments like this closely. Many companies are searching for technologies that reduce AAV dose requirements, and receptor modulation offers a practical path that could pair with existing AAV platforms. If successful, it may become standard to deliver a short priming therapy before AAV infusion, making treatments safer while cutting costs dramatically.

For Dr Bijay Dhungel, the hope is simple. A future where gene therapy is not limited by safety concerns, where rare diseases are treated early and effectively, and where patients across Australia and the world can access life changing therapies without facing prohibitive risks or costs. His work represents the next step in making that future possible, by ensuring AAV gene therapies work smarter, not harder, as they move toward mainstream medicine.■

MILLS OAKLEY

THE LEGAL PARTNER BEHIND AUSTRALIA'S HEALTH INNOVATION

With more experience and depth than any other law firm in Health & Life Sciences, our team is trusted on high-stakes regulatory disputes, complex commercial transactions and emerging technology matters.

We understand that innovation doesn't happen in isolation. That's why Australia's leading organisations trust Mills Oakley to deliver legal precision where it matters most.

Dr Lisanne Spenkelink

Illuminating the Nearly Invisible: A Journey into Single-Molecule Diagnostics

When Dr Lisanne Spenkelink first began studying physics in the Netherlands, she was fascinated by the idea that the deepest biological mysteries could be solved by looking at the smallest possible scale. That curiosity carried her through a Bachelor and Master of Science and eventually into a joint PhD between the Universities of Groningen and Wollongong. By the time she completed her doctorate in 2018, she had become captivated by the idea that watching a single molecule behave in real time could transform the way we understand life.

Today, as a Senior Research Fellow at the University of Wollongong's Molecular Horizons Institute, she has carved out a place as one of Australia's leading single-molecule biophysicists. Her work blends physics, chemistry, and biology to study complex biological processes one molecule at a time and uses this understanding to build diagnostic tools that can detect diseases far earlier than is currently possible.

Her research programme began with fundamental work. In her early career, she used single-molecule fluorescence microscopy to watch tiny enzymes involved in DNA replication moving along strands of genetic material. She became known for showing how these molecular machines behave in surprisingly stochastic ways, challenging the long-held assumption that biological systems operate in neat and predictable sequences. Instead of regimented molecular behaviour, she found bustling, noisy systems where random fluctuations matter. Understanding this natural variability became the foundation of her diagnostic vision.

It was during this period that she began to see the potential of applying single-molecule techniques to medicine. If she could watch individual molecules, she reasoned, then perhaps she could also detect individual traces of disease in a blood sample. This idea places her at the cutting edge of diagnostic innovation: the detection of extremely low-abundant biomarkers down to levels of about one femtogram per millilitre. To put that into context, that is only a few dozen molecules in a small blood sample. Detecting something that scarce has been compared to finding a single drop of water in twenty Olympic swimming pools.

Dr Spenkelink leads the Single-Molecule Biophysics Lab at UOW, where she and her team are building biosensors capable of reading these whisper-level molecular signals. Instead of relying on traditional assays that average the signals of millions of molecules, her technologies allow each individual biomarker to produce its own detectable event. Count the events, and you count the molecules. It is a digital approach to diagnostics that removes the background noise that limits current clinical methods.

Her sensor platforms involve advanced fluorescence techniques, such as single-molecule imaging where binding of a biomarker triggers a measurable change in fluorescence, or Fluorescence Correlation Microscopy on small devices allowing biomarkers to be detected at low cost. She is also exploring tailored directed-evolution approaches to create sensors optimised for detecting vanishingly rare proteins. This innovative direction was recognised in 2022 with a highly competitive NHMRC Investigator Grant, providing support for her work designing single-molecule directed-evolution methods.

These technologies have remarkable implications. Early detection of cancer biomarkers, blood based monitoring for neurodegenerative disease, rapid diagnosis of infectious pathogens, and tracking minimal residual disease after cancer therapy could all become far more accessible. Being able to diagnose a condition at the earliest molecular stage could give clinicians years of additional lead time before symptoms appear. It could also dramatically reduce the need for invasive procedures by bringing genuine precision to liquid biopsies.

The real world potential of this work has been recognised well beyond academia. Dr Spenkelink was showcased among the 2025 NSW Drug Discovery Forum cohort as a representative of next generation diagnostic innovation. Her presence in that group signals that her technologies are progressing from conceptual science into possible translation. With collaborations across chemists, nanotechnologists, and clinicians at Molecular Horizons, and the entrepreneurial ecosystem surrounding the university, it is easy to imagine a future spin out company bringing her diagnostic platforms to market.

Her path from fundamental biophysics to transformative diagnostics reflects a clear narrative thread. She set out to study molecules because she believed they held the secret to understanding life. Now she is using that understanding to reveal molecular signals that traditional tests have always missed. Her work aims to shine light on what is nearly unobservable, helping doctors detect disease at its inception rather than once it has already caused damage.

As science steadily moves toward more personalised and preventative medicine, her biosensors may become essential tools. They promise a future where a single drop of blood contains a story doctors can read with extraordinary precision, offering answers long before disease takes hold. Dr Lisanne Spenkelink's journey shows how curiosity driven science can evolve into innovations with the power to change lives, illuminating the molecules that once hid in the shadows and bringing a healthier future into view. ■

BIOBEACON GAMECHANGERS – WRAP UP

The BioBeacon Gamechangers edition of Cognitio illuminates a vibrant and rapidly evolving Australian life sciences ecosystem, characterized by groundbreaking research and a strong drive towards commercialization. The 2024 cohort, comprising companies like Ab Initio Pharma, ARIA Research, Culturon, DermR Health, NGB Innovation, Roam Technologies, Eudaemon Technologies, Zymedyne, and iiShield, demonstrates a tangible impact on current healthcare challenges. These ventures are not only introducing novel products and services but are also addressing critical gaps in pharmaceutical manufacturing, assistive technologies, laboratory consumables, diagnostics, pain management, and organ transplantation. Their collective progress underscores a growing maturity in Australia's ability to translate scientific discovery into market-ready solutions, often supported by significant private and governmental funding. The consistent investment in these companies, even in pre-approval stages, reflects a strong confidence in their long-term potential and the transformative nature of their innovations.

Looking to the 2025 cohort, researchers such as Professor Julie Atkin, Dr. Alexandra Daryl Ariawan, Nathan Bryant, Dr. Matthew Doyle, A/Prof. David Croucher, Dr. Pegah Varamini, Dr. Daniel Beard, Dr. Kirsten Coupland, Dr. Bijay Dhungel, and Dr. Lisanne Spenkelink are shaping tomorrow's breakthroughs. Their work, ranging from precision medicine for neurodegenerative diseases and targeted cancer therapies to novel antiviral strategies and advanced diagnostics, is poised to redefine medical possibilities. A recurring theme across both cohorts is the emphasis on addressing profound unmet needs, often leveraging multidisciplinary approaches and innovative methodologies (e.g., brain organoids, selective pathway inhibition, human-centered design). The strategic importance of robust academic-industry partnerships, government grants, and a clear focus on commercialisation pathways is evident in their progression.

The success stories and promising trajectories highlighted in this report reinforce BioBeacon's vital role as a catalyst within the Australian life sciences sector. By providing visibility, fostering networks, and facilitating access to resources, BioBeacon actively de-risks early-stage ventures and accelerates their journey from the laboratory to patient impact. The collective efforts of these game-changers are not merely advancing individual scientific fields; they are strategically positioning Australia as a global leader in health innovation, contributing significantly to patient outcomes, economic growth, and the advancement of medical science worldwide. Continued support and investment in this dynamic ecosystem will be crucial to realizing the full potential of these transformative endeavors. ■

BIOBEACON

BIOBEACON EXPERT PANELISTS

2024

Anita van der Meer
Head of Business Development and Partnerships, VVMF

Ben Wright
CEO, Mimetic

Edwina Lim
COO, Mimetic

Elizabeth Stares
Innovation and Translation Lead, MTP Connect

Nick Northcott
Managing Partner Chrysalis

Natalie Barber
Director Clinical Operations, Chrysalis

Pat Stewart
Head of Growth, Advanced

Rosalie Cull
CEO, Adjutor Healthcare Group

Sharon Charles
VP Clinical Operations, ProPharma

Stuart Anderson
CTCM Program Manager, MTAA

2025

Prashanth Rajan
Investment Analyst Brandon Capital

Kathy Connell
Non Executive Director Avecho Biotechnology

Wolfgang Jarolimek
Head of Drug Discovery Syntara

Phil Kearney
CEO Axelia Oncology

Aleta Knowles
Investment Manager Uniseed

Paul Young
CEO Ab Initio Pharma

Laura Issa
Strategic Advisor Facio BioTherapies

Siro Perez
Head of Life Sciences IP Group

Chris Alma
Director of Cell & Gene Therapy, CSL

Lindsay Wu
Chief Science Officer Proto Axiom

Brendon Boot
CEO Skin2Neuron

Sharon Charles
VP Clinical Operations ProPharma

Mike Lamprecht
Investment Manager, Tenmile

At Novotech, we combine our position as a globally recognized leader in clinical research with an award-winning workplace culture where ambition, innovation, and personal growth thrive. With a team of more than 3,000 professionals across 30+ countries, we're proud to support world-class biotech breakthroughs that improve lives globally.

At Novotech, our people are our greatest strength, and we empower every team member to work with passion and integrity, to help make an impact that matters.

Advancing research. Unlocking talent. Transforming global health.

novotech-cro.com

ARCS welcomes our new members

Professional Members (MMPP)

Aarti Iyer
Adam Michael
Akanksha Dutta
Alejandra Fernandez
Alison Davis
Amanda Xiaoqing Mao
Amber Leah
Amelia Edington
Angela Barclay
Angela Oakman
Anna Shi
Ashish Nair
Ashutosh Singh
Ata Arkham
Avanthika Lakshmanan
Belle Roels
Bernadette Aliprandi-Costa
Bonita Tapp
Brinda Kinkkal
Caitlin Firkin
Caroline Benyamin
Catherine Osborne
Chloe Akyayli
Christine Limwattana
Corinna Johnson
Dane Hunnerup
Darshika Solanki
David Witcombe
Devika Krishnamurthy
Durga Dharmadana
Emily Birthisel
Emma Mccann
Enisa Savic Hjelmaas
Erika O'dea
Gail Wiggins
Gary Neugebauer
Geoff Bloom
Geoffrey Chin
Gillian Woodhouse
Heather Wrightman
Helen Poliviou
Hend Youssef
Hilary Young
Hsing-Ying Lee
Ivan De Jesus Estrada
Jacqueline Ku
James Cokayne
Jared Ou-Young
John Patava
Karen Morris
Kate Trescowthick
Keely Bumsted O'Brien
Kim Mitchell
Kirsten Remen
Kristen Houdyk
Leigh Clemence
Liam Downey
Liz Pound
Loan Tran
Luke Edington
Mae Wong
Maneet Waraich
Mareeha Zaki
Mariana Costa De Almeida
Marina Skiba
Megan Gillett
Melanie Berg
Mia Mudge
Michelle Palmieri
Michelle Tusler
Mimi Nguyen
Nabila Akhtar
Naomi Brook
Natasha Asgari
Nina Mapson Bone
Philippa Charlesworth
Ragini Singh
Rakesh Iyer
Ram Bhat
Raphaelly Pereira
Rebecca Pearce
Richee Moon
Rohini Chari
Ryan Carrucan
Samantha George
Selma Kumbaric
Severin Rakic
Sharna Lawson
Simin Hosseini
Siouxzy Morrison
Stephanie O'Brien
Stephanie Shepheard
Su Cox
Tania Timotic
Tara Mcavoy
Teresa Nicoletti
Teresa Ringeri
Tetiana Shurygina
Tharuni Hewa Dewage
Thobe Mthethwa-Pitt
Victor Loh
Wai Wong
Wendi Tian

Associate Members

Agatha Kanyunyuzi
Akhil Bhalla
Akhil Jacob
Alex Williams
Alvin Lai
Ambaalika Sarna
Antoinette Casado
Anudarshini Sathish Kumar
Anusha Kode
Arian Gazi
Arron Horsington
Bastian-Alexander Truppel
Bhuvaneswari Kanuri
Billie Pardavi
Boxin Zhang
Bronte Coorey
Cadence Raymer
Cameron Trought
Camille Grondin
Cara Hersov
Carina Lin
Cecilia Hernandez
Charmaine Kai
Cherish Kudjarno
Christy Sojan
Dingyuan Fan
Diva Zaafira
Donia Abeid
Dylan Johnston
Elise Mackay
Emma De Somer
Eric Phan
Erika Visser
Euniss Hung
Florence Pervaiz
Frieda Leszczynski
Habiba Danish
Hafza Afzal
Hanlin Chen
Hanzel Irawan
Hasanin Sanim
Helen Maccan
Ichsana Widya
Iqra Adil
Ishraq Walid
Ivy Braddick
James Stinson
Jasmine Catague
Jess Sharkie
Jessie Zhang
Jessie Lieu
Judith Walker
Julian Hayden
Kanth Vanka
Kiran Naidu
Koo Yau
Lanlan Huang
Leanne Doarti
Leila Janghour
Linda Lin
Lucy Athanasiou
Luyao Ding
Mai Nielsen
Meenu Pillai
Meet Soni
Meriam Salloum
Mia Adams
Michael Glass
Michelle Boom
Millicent Opoku
Mizuki Muramatsu
Mohammad Henry
Nazirah Harizan
Neha Sirwani
Nidhi Vishwas Kadadi
Niharika Rongali
Niranjan Chouhan
Ohi Chowdhury
Omar Hassanien
Priya Haragapure
Priya Padmanabhan
Priyanshi Roshan
Rachel Craft
Rachel Wong
Ravindra Nettimi
Reshmi Krishnan
Rohitha Nagareddy
Rufia Banu Sadiq Ali
Rujia Wang
Saba Nabi
Samea Khan
Shayalini Wignarajah
Shifhali Morabad
Simran Udeshi
Sofia Li
Srivari Srinivasan
Tejaswini Bala
Thi Trang Linh Le
Tima Porsa
Vanshi Kamdar
Vignesshwar Venkatachalam
William Yang
William Nguyen
William Lazaris

ARCS AUSTRALIA

ARCS Office
PO Box 448, North Sydney NSW 2059
Phone: 02 8905 0829
Email: arcs@arcs.com.au
Web: www.arcs.com.au

Editors
Dr Tim Boyle ChMPP
Dr Navinisha Lee FMPP

Advertising
Ellen McMahon
emacmahon@arcs.com.au

Designer
You Tarzan

ARCS
ANNUAL CONFERENCE

SAVE THE DATE

- 10-11 June 2026

The ARCS Annual Conference will be held at ICC Sydney.

2026 ARCS
ANNUAL CONFERENCE

The 3-day ARCS Annual Conference is the largest of its kind, that unites professionals across various functional areas within the medtech and pharmaceutical sectors, including clinical research, regulatory affairs, medical operations, pharmacovigilance, quality, medical device, and reimbursement.

Its primary purpose is educational and aims to provide a neutral forum for debate and discussion around processes, policies and the future of the industry.

Delegates represent a cross section of professionals at all stages of their careers working in academia, government, biotech, Medtech and Pharmaceutical companies, hospitals and healthcare settings and other organisations.

ARCS Australia
www.arcs.com.au
arcs@arcs.com.au
P: +612 8905 0829

Join us at 2026 ARCS! Go to **www.arcs.com.au/annual-conference/** for further information.