

The background features a complex abstract design with overlapping organic shapes in various shades of blue (from dark navy to light sky blue), white, and a bright orange. The shapes are layered, creating a sense of depth and movement. The text is positioned in the center-left area, overlaid on the dark blue background.

BEYOND SCIENCE
Annual Report 2022

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EXECUTIVE SUMMARY:

Fostering impact through connectivity

The Beyond Science program is a capability building initiative for Early Career Researchers undertaking translational research in Otolaryngology, Head and Neck Surgery.

It is an Australian-first initiative which aspires to achieve transformational change in training, output and impact of translational research.

The program **goals** include:

- 1: Increase project **impact** by fostering interdisciplinary collaborations
- 2: Scaling **outputs** of research by linking to health systems with academic expertise
- 3: Advocacy on behalf of Early Career Researchers by **connecting** stakeholders involved in supporting research including College, Community, Government, Industry and the University sector.

Why is this needed?

Despite a rich history of biomedical innovation in Australia, there are limited training opportunities for surgeons to develop these skills. Within NSW, there are no formal surgeon-scientist training pathways in Otolaryngology, Head and Neck Surgery. Our limited understanding of technology commercialisation has impeded our ability to translate fundamental scientific breakthroughs to the bedside. While the growing needs to Surgery demands faster translation, the rapid pace of evolution of medical technology results in constant changes in regulation and policy. A networked approach that will drive a culture to embrace changes and educate researchers early in their career is therefore essential for Australian Otolaryngology to continue to deliver innovations to the community.

Launch:

The Beyond Science Platform was launched in February 2022 during the Royal Australasian College of Surgeons New South Wales (RACS NSW) Surgeons' month. The launch was announced at a Blacktie dinner held at NSW Parliament House as part of NSW Surgeons' Evening, the pinnacle event of Surgeons' Month, which recognises and celebrates the exceptional and committed surgeons in NSW.



Image: Anne O'Neill presenting at the NSW Surgeons' Evening February 2022 on NSW Health's training program in Medical devices which has been running for 10 years. Em Prof Jim Patrick AO chair of Beyond Science Advisory Committee launched the program and spoke about Australian innovation.

STRUCTURE AND GOVERNANCE:

During its inaugural year, Beyond Science has implemented a governance structure through the establishment of a Board consisting of both clinical and scientific members. Activities to be undertaken are discussed by the Board and overseen by an Advisory Committee. In its inaugural year, the clinical and scientific membership was determined by the co-founders and consists of 18 participants. Changes in the membership of the board is decided by discussion with the Board. The membership of the Advisory Committee was determined by the co-founders and roles and responsibilities have been agreed upon by terms of reference signed by each Advisory Committee member (Appendix).

Inaugural members of Beyond Science Board

Clinical

Associate Professor Payal Mukherjee (CoFounder)
Associate Professor Kelvin Kong
Professor Stuart Mackay
Professor Raymond Sacks
Professor Richard Harvey
Associate Professor Raewyn Campbell
Professor Nirmal Patel
Associate Professor Daniel Novakovic
Professor Jonathon Clark

Scientific

Professor Gordon Wallace (CoFounder)
Professor Ben Eggleton
Professor Gregg Suaning
Professor Svetha Venkatesh
Associate Professor Hamish Macdougall
Professor David McAlpine
Professor Nigel Lovell
Professor Laura Poole-Warren
Professor Jeremy Crook

Inaugural Members of Beyond Science Advisory Committee

Professor Jim Patrick AO (Chair)
Professor Philip Truskett
Professor Susie Nilsson
Adjunct Professor Jean-Frederic Levesque
Dr Bridget Clancy
Anne O'Neill

Diversity:

The Beyond Science Board diversity is articulated in the skills matrix below. The advisory committee diversity includes representation from industry, science, clinical, philanthropy and government.

Milestones achieved 2022:

The following milestones were achieved during 2022 and are listed below under the categories of governance, meetings organised, activities undertaken, engagement actions, and sustainability planning.

1: Governance

- a. Terms of Reference:
 - a. Terms of Reference have been agreed and finalised for the Advisory Committee
- b. Project call:
 - a. Project proforma has been established and approved by Board and Advisory Committee
 - b. A call for Expressions of Interest for projects has been made through the Australian Society of Otolaryngology Head and Neck Surgery NSW Branch (ASOHNS NSW) as well as Royal Prince Alfred Hospital Institute of Academic Surgery: [See link](#)

2: Meetings:

1. During 2022 the Board and Advisory Committee met three times each. Board meetings are followed by Advisory Committee meetings.
2. In line with the Board and Advisory Committee meetings, A/Prof Mukherjee has reported progress to the RPA Institute of Academic Surgery three times during 2022
3. Areas of need that were identified:
 - a. Workforce skills gap in forming interdisciplinary teams and research projects
 - b. Missed opportunity for subspecialties to learn from each other about translational hurdles
 - c. Translational research predominantly undertaken by preSET workforce
 - d. Lack of opportunities or incentives to engage in research during training, creates a gap in accessing networks during or after training which risks losing early career researchers in Surgery. This has a secondary barrier for early career scientists in developing collaborations.
 - e. Lack of support for translational research in regional, rural and remote areas which is exacerbated by workforce shortage in Otolaryngology and head and neck surgery in these areas. This was also highlighted in the Parliamentary Enquiry into Rural health in NSW in 2022 – [See link](#)
 - f. In contrast there is a real demand in the scientific world for clinical engagement to help drive research to solve real unmet needs (rather than perceived ones)
 - g. There is an urgent need for collaboration between institutions and health systems to leverage each other's networks and overcome this gap

3: Activities:

- a. Promoting use of existing infrastructure
 - a. Cicada Innovations courses: We have used one project (a prior Garnett Passe funded project) to do the Cicada Innovations course as an exemplar.
 - b. MTP Connect: MTP Connect has launched both the REDI program and the CEP (Clinician Entrepreneur Program). There has been one ENT REDI Fellowship in NSW completed in 2022. The CEP program was launched in September in NSW. Beyond Science will work next year to boost enrolment of students in the CEP program
- b. Events/ Conferences
 - a. RACS events:

- i. Developing a career in Academic Surgery – RACS ASM (organised by the Section of Academic Surgery this is aimed at Early Career Researchers
 1. Invited talk on Interdisciplinary Research – [See Link](#)
 - ii. November Annual Academic Surgery Conference – (organised by the Section of Academic Surgery, chaired by A.Prof Payal Mukherjee aimed at Mid Career Researchers) – [see link](#)
 - iii. Connecting the Dots: Funded by NSW Health and Experience Insurance, this was an inaugural meeting hosted by the Beyond Science Board to address the deficiencies identified in the 1st year of the program in translational research in Australia – In the spirit of sustainability the program was published and distributed electronically only [See e-program](#). There was a research competition run on Day 1 of the program that attracted 26 abstract submissions of which 10 were chosen. All abstracts were converted to posters and were distributed to all attendees as an online [abstract e-book](#).
 - iv. Value Based Health Care:
 1. RACS NSW in collaboration with Agency for Clinical Innovation NSW Health (ACI NSW) hosted a series of Webinars to increase literacy about Value Based Care
 - Set the scene: Publication: doi.org/10.1111/ans.17501
 - Webinar Dates: 31st March, 19th May and 15th September
 2. This was further reiterated through the innovation and research in the Connecting The Dots meeting and the Robotics Summit (see below)
- b. RPA Events
- i. Sydney Robotics and Innovation Summit: [See link](#)
<https://sris2022.com/sris2022-1>
 1. Value based Health in Innovation: an inaugural session on Health technology and innovation, convened by A/Prof Mukherjee was introduced in the Sydney Robotics Summit which is an international meeting held in Sydney 17th and 18th of June 2022
- c. Grants Applications: (Awaiting outcome)
- i. MRFF early and midcareer research grant: Using the Beyond Science Network, the first Beyond Science grant application was submitted to promote capacity and capability in rural remote and Indigenous research, supported by RACS NSW and NSW Health



Connecting the dots event brought together state and federal collaborators in science, surgery, industry, government and philanthropy to raise the importance of interconnectivity in research translation. Training in interdisciplinary research was seen as key to support the early and midcareer researchers.

4: Engagement:

- a. The directors have had several meetings with stakeholders across the health sector
 - a. Capacity builders:
 - i. TGA: 10th August
 - ii. Prof Susie Nilsson: CSIRO: 19th August
 - iii. Dr Alfredo Martinez-Coll UTS: 6th September
 - iv. Dr Jean Frederic-Levesque: CEO ACI NSW health, 7th October
 - v. Troy Harvey: Executive Director Health Infrastructure, NSW MOH, 21st Oct
 - vi. Davor Jozic: Director Westmead Health Precinct: Greater Sydney Commission: 16th November
 - vii. ACI NSW: 21st November
 - b. Capability builders:
 - i. MTP Connect Chair: Dr Sue Mclelam 5th September
 - ii. Prof Kate Senior University of Newcastle: Indigenous Research: 9th September
 - iii. Prof Anne Kelso: CEO NHMRC: Nov 1st
 - iv. RACS president, CEO, Rural health and MTP Connect meeting: 11th November
 - v. Please note: Engagement with MRFF through NAASC 2022 meeting
 - c. Consumers and Industry:
 - i. Ian Burgess (CEO) and Stuart Anderson (CPCM lead): Medical Technology Association of Australia: 16th September
 - ii. Mark Diamond (Past Board Director): Consumer Health Forum 7th October
- b. Develop Online Platform
 - a. Beyond Science webpage on RACS NSW: [See Link](#)
 - b. Beyond Science e-book: [See Link](#)

- c. Beyond Science Logo and social media presence (twitter and LinkedIn)
- d. Surgical News article about Beyond Science: [See Link](#)
- c. Awards given:
 - a. Innovators Award RACS NSW: Presented Surgeon's evening
 - i. Awarded to Dr Shaheen Hasmat SET trainee: BLINC project (Bionic Lid Implant for Natural Closure) (COBLH)
 - b. Connecting the dots Research Competition Awards
 - i. Project addressing the most unmet need: Dr Al Rahim Habib (Unaccredited Trainee Westmead, PhD Candidate) Drumbeats AI: Use of AI in diagnosing middle ear disease
 - ii. Most Innovative project: Dr Hai Xin (Post Doctoral Research Fellow: Chris O'Brien Lifehouse) Use of bone tissue engineering for mandibular reconstruction
 - iii. Most Impactful Project: Dr Ankit Ajmera (Unaccredited trainee Sydney local health District) Value of robotic Cochlear Implantation
 - iv. Overall innovative project: Dr Johnson Chung (Post doctorate research fellow, University of Wollongong) Bioprinting cartilage for microtia reconstruction
 - c. RACS Continuing Professional Development (CPD) :
 - i. RACS CPD points have been awarded to the following meetings convened by A.Prof Mukherjee to promote the awareness of Beyond Science and promote inter-sector collaboration in translational research in NSW
 1. Connecting the dots symposium
 2. Value Based Care Webinars
 3. DCAS and NAASC meetings
 4. Robotics Summit

5.Sustainability Plan

- a. Raised funds for small project grants with engagement from RACS (Research Audit and Academic Surgery as well as Scholarships and Grants)
- b. NSW Office for Health and Medical Research (OHMR) Events grant: Connecting the dots



Dr Al Rahim Habib and Dr Hai Xin, two of the four being congratulated by .A.Prof Mukherjee and Prof Gordon Wallace AO.



Dr Shaheen Hasmat was awarded the inaugural Innovation Award by Dr Michelle Atkinson, chair RACS NSW on Surgeon's evening on November 25th.

Connecting the Dots Workshop

Medical Devices Development
Commercialisation and
Value Based Implementation

11th and 12th November

Level 5, Education Centre,
Chris O'Brien Lifehouse



Fri 11th 1-5pm REGISTER HERE

Sat 12th 8.30-5pm REGISTER HERE



Supported by:



The growing needs of Surgery demands faster bench to bedside translational of Innovation. The **Beyond Science** program is hosting an event to discuss **strategies to support academic careers in translational research** to complement large scale biomedtech infrastructure investment by state and federal governments.

This workshop will highlight some success stories in commercialisation of surgical research and focus on ethical implementation of that research in the context of a pandemic ravaged health system. Join us **Face to Face or Online**.



Royal Australasian
College of Surgeons
CPD Approved

For more info:

(02) 8298 4500

Beyond Science [webpage](#)

Beyond Science [eBook](#)

Connecting the Dots Program

Day 1 – Translational Research Ecosystem

(Focus on Otolaryngology)

Date: Friday 11th November 2022

Location: Chris O’Brien Lifehouse, Level 5, Education Centre

1300	Welcome	
1305	Young talents Competition Interdisciplinary Projects involving development, evaluation or implementation of medical devices (10 projects)	Translational Research in ENT 3minute Pitch: Trainees/Students
1400	Break	
1430	3 x 30 minute Panel Discussions: How to grow translational research nationally	
1430	People: Supporting academic careers Chairs: Payal Mukherjee, Gordon Wallace	<p>Panellists:</p> <p>1: Prof Ray Sacks – <i>President of ASOHNS, Chair of court of examiners, RACS Councillor</i></p> <p>2: Prof Nigel Lovell – <i>Scientia Professor and head of graduate school of biomedical engineering, UNSW</i></p> <p>3: Prof Bill Coman – <i>Board member Passe Williams Foundation</i></p> <p>4: Tracy Lu: <i>Managing Associate Allens</i></p> <p>5: A.Prof Kerin Fielding: <i>Chair, RACS Rural Health Strategy, Chair of Clinical Surgical Training Council-HETI</i></p>
1500	What Infrastructure is required at a state and federal level Chairs: Jonathan Clark, Lisa Horvarth	<p>Panellists:</p> <p>1: Katja Beitat – <i>head of healthtech CICADA Innovations</i></p> <p>2: Dr Peter Spencer – <i>SPHERE UNSW</i></p> <p>3. Prof David McAlpine – <i>Academic Director, Macquarie University Hearing</i></p> <p>4. Stuart Anderson – <i>MTAA</i></p> <p>5: Dr Sally Langley – <i>RACS President</i></p>
1530	Connecting systems and organisations Chairs: Alfredo Martinez-Coll , Jeanette Pritchard	<p>Panellists:</p> <p>1: Dr Antonio Penna – <i>Executive Director, Office of health and medical research, NSW health</i></p> <p>2: Ellen Rawstron – <i>Clinical Executive Director, Agency for Clinical Innovation, NSW health</i></p> <p>3: Prof Philip Truskett – <i>Board Member, Passe Williams Foundation</i></p> <p>4: Dr Susie Nilsson – <i>CSIRO, Research Director, Biomedical Manufacturing</i></p> <p>5: Prof David Currow – <i>Deputy Vice Chancellor, UOW</i></p>
1600	Discussion	
1630	Awards for Young talents competition	
1700	Finish: Networking Drinks	

Day 2: Medical Devices Research in Surgery

(Focus: Training in research, commercialisation and value-based implementation)

Date: Saturday, 12th November 2022

Location: Chris O'Brien Lifehouse, Level 5, Education Centre

0830	Session One	
	Title: Set the Scene	
0830	Welcome and Introductions Payal Mukherjee and Gordon Wallace (Convenors)	
0840	Dr Sally Langley <i>RACS President</i>	Open and Acknowledgement to Country
0850	Honorable Ed Husic (TBC) <i>Federal Minister for Science and Industry</i>	Australian vision
0900	Prof Jim Patrick <i>Chief Scientist – Emeritus, Cochlear</i>	The Cochlear Implant: Research Commercialisation to Global impact
0915	Dr Jean-Fred Levesque <i>CEO ACI NSW</i>	Driving Value based health systems
0930	Prof Henry Woo <i>RACS Councillor</i>	RACS Clinical Academic Support
0945	John Biviano RACS CEO	RACS Innovation Support
1000	Morning Tea	
1030	Session Two – Chaired by Danette Wright and Andrew Bean	
	Title: Exemplar Journeys	
1045	Prof Fiona Wood <i>Winthrop Professor, School of Surgery, UWA</i>	Bioengineered skin commercialisation journey
1100	Prof Marcus Atlas <i>Ear Science Institute – Western Australia</i>	Clear drum Commercialisation Journey
1115	A.Prof Claudia Dibella <i>St. Vincent's Hospital Melbourne</i>	Biopen Commercialisation Journey
1130	Prof Gerard Sutton <i>Vision Eye Institute</i>	iFixPen Commercialisation Journey
1145	Dr Joe Dusseldorp <i>Chris O'Brien Lifehouse</i>	Sincricity Commercialisation Journey
1200	Lunch	
1300	Session Three – Chaired by Jeanette Pritchard and Susie Nilsson	
	Title: Capacity and Capability	
1300	Davor Jozic – Director, Innovation District Ecosystem, Westmead precinct	Westmead Health & Innovation District
1315	Prof Peter Choong – Hugh Devine Chair of Surgery, University of Melbourne	Aikenhead Centre for Medical Discovery, Victoria
1330	Dr Jitender Sharma – <i>Managing Director and CEO Andhra Med Tech Zone</i>	International Capacity (Indian Initiative)
1345	A.Prof Kerin Fielding – <i>RACS Councillor, Chair Rural Health Equity Strategy Committee</i>	Building capability in rural workforce
1400	Anne O'Neill - <i>Director, Enterprise and International Partnerships, OHMR NSW Health</i>	Medical Device Commercialisation and Training Program 10 years on
1415	Jarrold Belcher – <i>Director Research Exchange and Development with Industry (REDI Initiative) MTP Connect</i>	REDI
1430	Derek Van Dyk <i>Director of Strategy, SNOW Medical Research Foundation</i>	Supporting interdisciplinary research

1445	Discussion
1500	Afternoon Tea
	Session 4 – Way Forward
1530	<p>Panel Discussion: Prof Laura Poole-Warren – Deputy Director, Tyree IHealthE, UNSW Dr Susie Nilsson: CSIRO, Research Director, Biomedical Manufacturing Prof Russell Gruen: Dean College of Health and Medicine, ANU Dr Cameron Ferris: Co-Founder and COO Inventia Life Sciences Stuart Anderson: MTAA</p>
16.30	Closing comments