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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.

Key milestones for 2023:

Based on our initial application projections, many Year 2 milestones have already been achieved (see appendix). The key focus of 2023 will be on developing project support and partnership, leveraging the outcomes of the Connecting the Dots Symposium. The outputs of the Symposium will serve as a catalyst to expand on those already achieved milestones.

- a. Governance:
 - a. Align strategy with current changes for research support within RACS
 - b. Develop terms of reference for including policy, industry, consumer groups and Early Career Researcher representatives in the platform
- b. Internal Meetings:
 - a. Continue 4 monthly Scientific, Advisory Committee and RPA Institute of Academic Surgery reporting
- c. Events:
 - a. Hold annual Symposium dedicated for Beyond Science
 - b. Continue promoting translational research by engagement with events during the year (DCAS, NAASC, Robotics Summit)
- d. Project development and Partnerships
 - a. The co-founders and the chair of the Advisory Committee to meet with all students and their supervisors who participated at the Connecting the dots 2022 workshop to gauge project and career support needed
 - b. Develop strategies to encourage rural and regional research and networks with rural networks such as Spinifex networks.
 - c. Develop a framework to stream project for assistance from ACI NSW, MTAA, TGA or consumer group representatives
 - d. Identify projects appropriate for MTP Connect CEP program or CICADA platform (also educate the educators)
 - e. Assist with grant applications by platform members through this network
 - f. Develop an advocacy strategy for state and federal governments
- e. Communications plan:
 - a. Expand social media presence, inclusions in surgical news, and traditional media
 - b. Attend stakeholder forums, meetings and conferences
- f. Sustainability plan:
 - a. Apply for Grants via submissions to MRFF, MTP Connect, NHMRC
 - b. Advocate for State, Federal government, Industry and University support
 - c. Raise funds from hospitals, universities and industry for small project grants to incentivise a network approach to research