

Institute of Academic Surgery

2022 RESEARCH REPORT
ROYAL PRINCE ALFRED HOSPITAL
SYDNEY LOCAL HEALTH DISTRICT



Pictured: Professor Gordon Wallace and A/Professor Payal Mukherjee with the NEW EARS project

INSTITUTE OF ACADEMIC SURGERY

2022 RESEARCH REPORT

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NON C D O R T N

The Royal Prince Alfred (RPA) Hospital's Institute of Academic Surgery (IAS) was established in 2014 to enhance academia in surgery at RPA. Each year, the Institute aims to progress the calibre and quantity of research conducted, with a focus on translational, clinical, health services and educational research. The aim is to support surgeons, medical, nursing and allied health staff to undertake research in their area of interest.

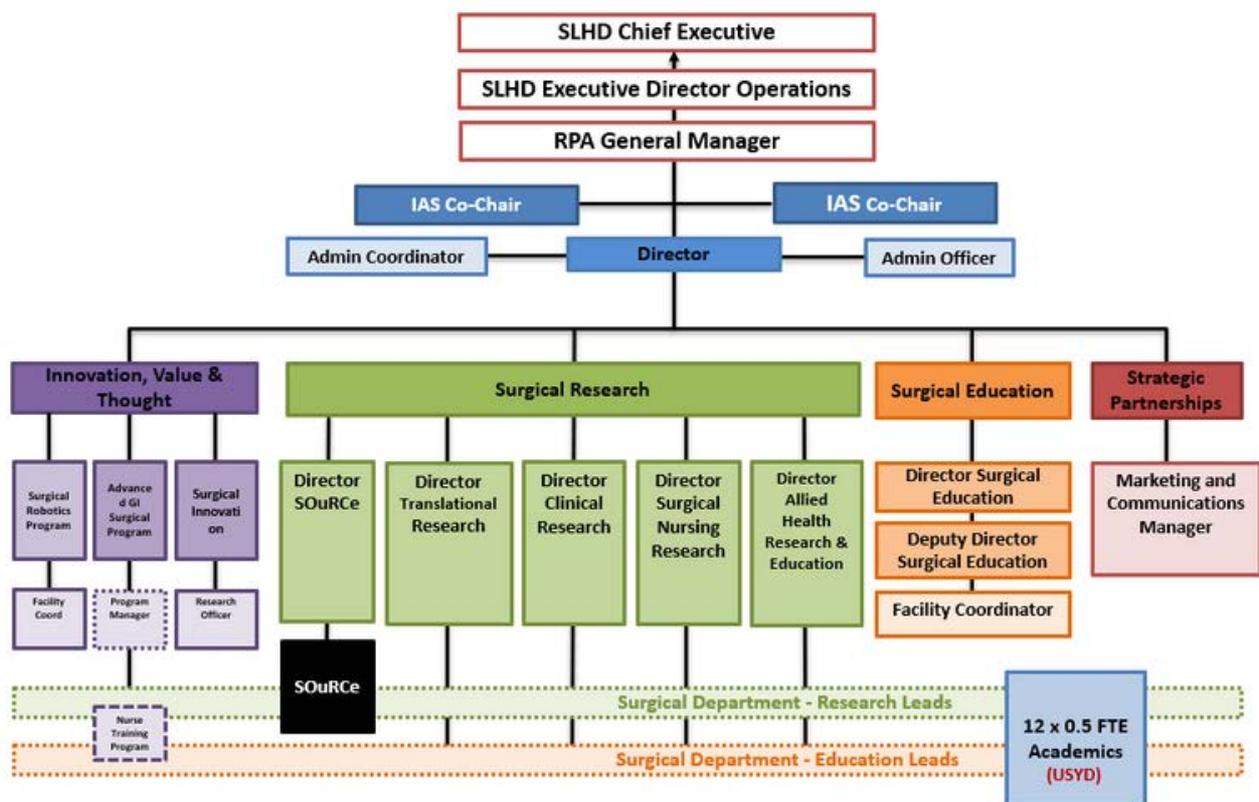
2022 yielded significant research results for the IAS. Across the key metrics, the RPA surgical departments either outperformed or remained consistent with last year's results. Many IAS researchers were also recognised for their research efforts and received prestigious awards.

The purpose of this report is to showcase each of these key metrics, and other research achievements.

Looking forward, the IAS will aim to continue fostering an environment of collaboration and support for our well-established researchers and early career clinicians but also for the up-and-coming students interested in surgical research.

ORGANISATIONAL CHART

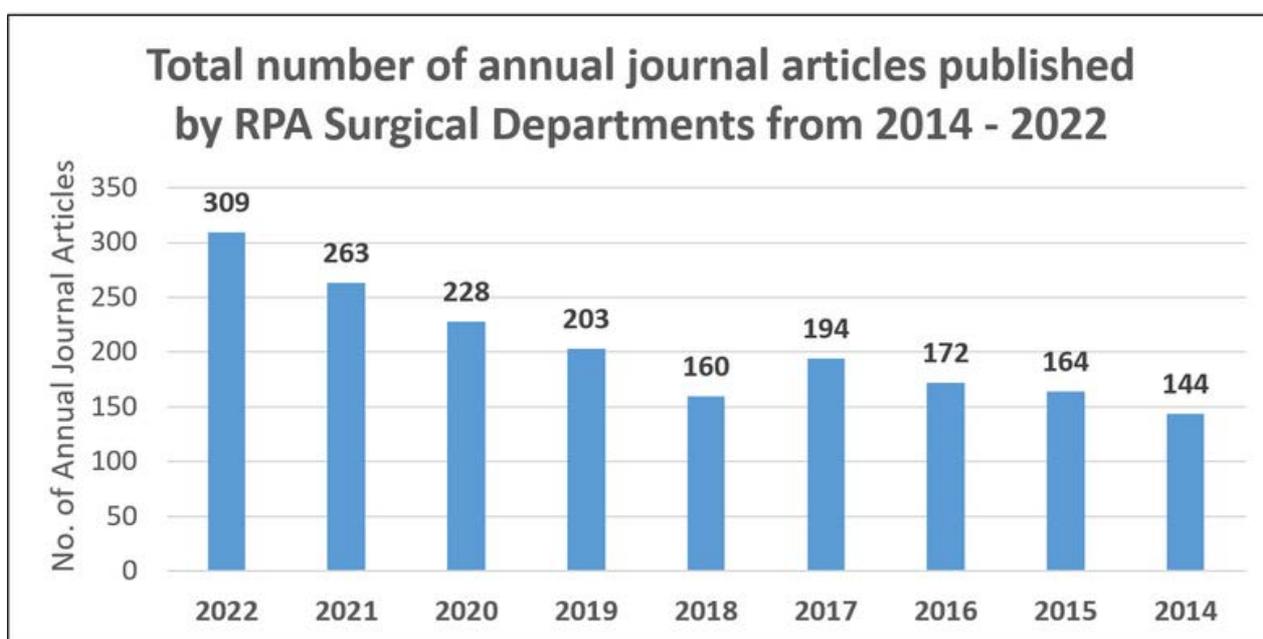
Surgical research is one of the four key portfolios at the RPA Institute of Academic Surgery. The below organisational chart showcases the five components which make up the research portfolio. These components help to ensure that the research being conducted is comprehensive and targeted.



PUBLICATIONS

Throughout 2022, RPA's surgical departments produced **309 research publications**. This demonstrates the upward trend that has continued steadily since 2014, and surpasses the monumental 263 publications achieved in 2021.

In 2022, the Melanoma & Surgical Oncology, Head & Neck and Colorectal/SOuRCe departments were the top performing surgical departments in terms of research output, collectively publishing 158 articles. The majority of surgical departments increased or maintained their output compared to the previous year.



PUBLICATIONS - BY DEPARTMENT

Annual Journal Articles Published by Surgical Department				
RPA Surgical Departments	2022	2021	2020	Trend 2022 vs 2021
Melanoma	60	47	51	Up
Colorectal/SOuRCe	45	40	42	Up
Head & Neck	53	37	25	Up
Benign Gynaecology	21	32	11	Down
Orthopaedics	16	31	12	Down
Cardiothoracic	24	22	30	Steady
HUGIT	12	13	17	Steady
ENT	12	12	13	Steady
Transplant	14	11	9	Up
Gynae Oncology	11	10	10	Steady
Vascular	12	9	8	Up
Neurosurgery	8	7	9	Steady
Urology	10	7	4	Up
Breast	7	4	4	Up
Plastics	3	3	3	Steady
Ophthalmology	1	2	2	Steady

RESEARCH GRANTS

Throughout 2022 a total of **51 grants** were awarded to the RPA surgical departments with a combined total of just over **\$35,634,725**. This success applied to a range of grants and research studies covering a three to five year period.

Major achievements included the *MRFF ARISTOCRAT Stem Cell Therapies* Grant, awarded to Professor Jonathan Clark AM and A/Professor Payal Mukherjee for a total of \$6,999,671. This bespoke research program focuses on a framework for point-of-care manufacturing and delivery with a mission to change the way we care for people living with painful joint disease and facial disfigurements. The research will also sample the processes to bring these treatments into hospital so clinicians can treat conditions faster and with fewer complications than before.

2022 Grants Awarded to RPA Surgical Departments		
Surgical Department	Grant Total	
	n	Amount (AUD)
Head and Neck Surgery*	26	19,709,186.33
Gynae-Oncology*	6	8,002,189.00
Colorectal*	3	1,171,477.00
Orthopaedics*	1	258,246.00
SOuRCe*	9	3,555,026.80
Transplant	3	2,700,000.00
ENT	1	88,600.00
Urology	2	150,000.00
Grand Total	51	35,634,725.13

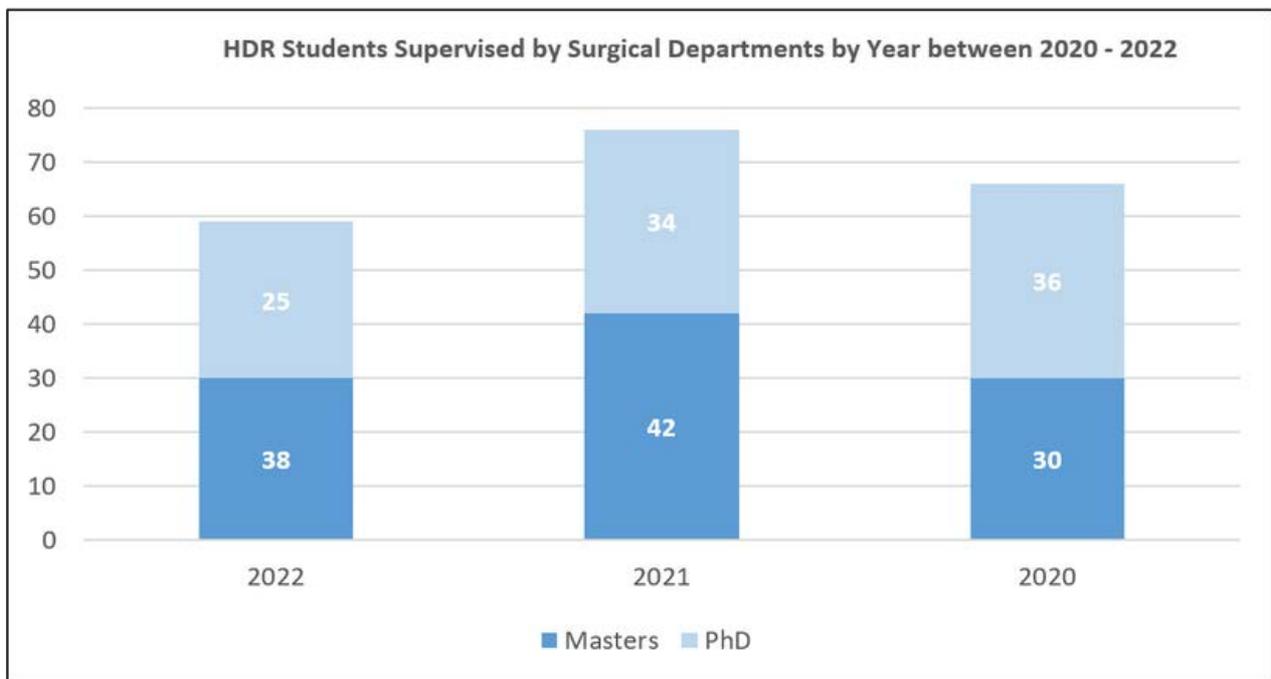
ETHICS APPLICATIONS

Throughout 2022, a total of **112 ethic applications** were submitted by the RPA surgical departments. The total number of ethics applications **increased by 37** compared to the previous year.

Ethics Applications Submitted by Surgical Departments in 2022	
RPA Surgical Department	Ethics Applications
Colorectal & sOuRCe	47
Vascular	20
Transplant	5
Orthopaedics	3
Gynae-Oncology	5
Breast	4
Benign Gynaecology	5
Head & Neck	7
Neurosurgery	1
Ophthalmology	0
ENT	3
Urology	10
HUGIT	2
TOTAL	112

HDR STUDENTS

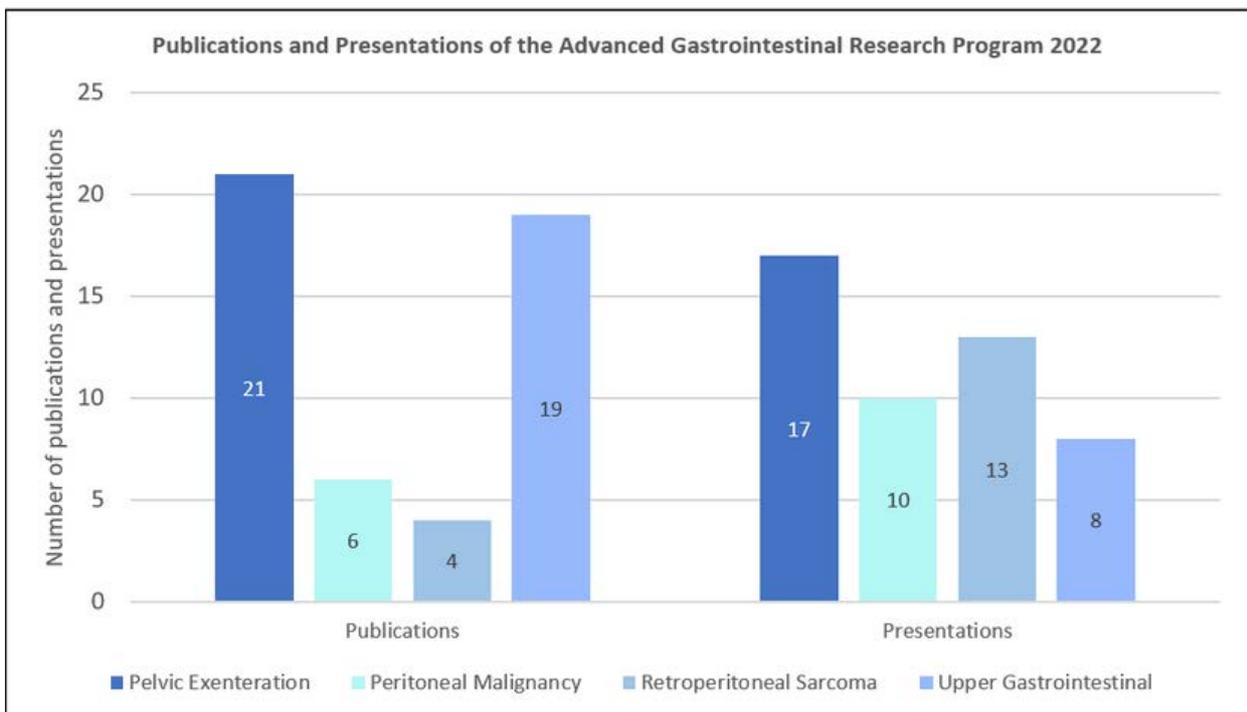
Overall, there were **63 HDR students** supervised by the IAS and the RPA surgical departments. Of these students, **25 were supervised for PhDs and 38 for Masters Degrees**. Over the last three years the number of HDR students supervised has remained steady.



ADVANCED GASTROINTESTINAL SURGICAL PROGRAM (AGISP)

The AGISP research program achieved **50 publications** and **48 presentations** in 2022.

The AGISP includes four surgical specialties including Pelvic Exenteration, Peritoneal Malignancy, Upper GI and Retroperitoneal Sarcoma. The multi-disciplinary staff behind each specialty have contributed to these extensive research results, including the team at the RPA Surgical Outcomes Research Centre.



INNOVATION, VALUE & THOUGHT

Across 2022, the Innovation, Value & Thought team developed cutting-edge surgical solutions utilising the most advanced practices in the industry including 3D printing and Virtual Reality. They achieved **seven publications** and **six presentations** over the year.

Outstanding achievements included:

- **Eureka Prize finalist** for Excellence in Interdisciplinary Scientific Research. The project, NEW EARS, is a one-step solution to a low-cost ear reconstruction.
- **Winner of SLHD Sydney Innovation “The Pitch”** for the Happy Heads project. This provides patients with helmets for head protection after a craniectomy.
- **Winner of COBLH Surfebruary Cancer Research Fund.** In this study, the surgeon uses state of the art Virtual Reality to gain access to and undertake Virtual Surgical Planning for jaw reconstructions in an immersive 3D manner.
- **IAS breast reconstruction moulds for the Brisbane Breast Surgery Society ANZ conference.** 40 breast moulds were made with Kai Cheng utilising the 3D printer and A/Professor David Storey developing the silicone recipe.

SURGICAL ROBOTICS

The Surgical Robotics team completed **eight publications and twelve presentations.**

The Surgical Robotics Program continued to operate as one of the broadest multi-specialty public programs in Australia.

Throughout 2022, five surgical specialties utilised the da Vinci XI Surgical System at RPA. These were Benign Gynaecology, Cardiothoracic, Colorectal, and Urology. In addition, Orthopaedics continued to use the Stryker MAKO Robotic System in the Institute of Rheumatology and Orthopaedics (IRO) at RPA.

During the reporting period the robotics research program had 14 prospective research projects and another seven projects in advanced stages of development.



AWARDS

Several clinicians were recognised for their hard work and accomplishments in surgical research and received the following **prestigious awards**.

Awards and Medals Awarded to RPA Surgical Departments	
Awardee	Award
Professor Michael Solomon	Ruthven Blackburn Medal
Dr Preet Makker	Hinder Memorial Prize
Dr Adrian Siu	AMA Doctor-in-Training award
A/Professor David Clark	Peter Bancroft Prize for Research Work
Professor Jonathan Clark AM	Honorary Member Australasian Society of Otolaryngology Head and Neck Surgery (ASOHNS)
Mr Jeremy Dinoro	APR Internship
Dr Merran Findlay	Doctoral Prize Dietitians Australia Joan Woodhill Memorial Prize for Research Excellence Best Oral Presentation Award Australia & New Zealand Head and Neck Cancer Society Prize Best Presentation Award Chris O'Brien Lifecare Research Symposium Sydney Health Partner Research Translation Fellowship
A/Professor Carlo Pulitano	John Mitchel Crouch Fellowship, RACS ANZHPBA Research Day
A/Prof Carlo Pulitano and Dr Ngee-Soon Lau	Mentee-Mentor Award, The Transplantation Society (TTS)
Dr Mark Ly	Early Career Researchers Award (Basic Science) (TSANZ) Royal Prince Alfred Hospital 2022 President's Prize for Laboratory Research TSANZ Early Career Award (Basic Science) ILTS 2022 Young Investigator Award McCaughey Surgical Research from RACS
Dr Mark Ly and A/Professor Carlo Pulitano	Rising Star Award, International Liver Transplantation Society (ILTS)
Dr Ngee-Soon Lau	Winner of the Inaugural ANZ Chapter of the ACS Surgical Forum

EVENTS

The IAS is committed to running events that support research collaboration and leadership. Across the year, **2 Think Tanks** were hosted as well as an **inaugural SpikNing Ceremony**.

In May 2022, the Research Collaboration Think Tank was held virtually and focused on building research networks, multidisciplinary collaboration and how best to build collaborative research teams. This was attended by 42 health staff from a range of surgical, nursing and allied health backgrounds.

In December 2022, the Research Impact Think Tank was held in-person at the IAS. This featured a myriad of experienced researchers from the IAS, University of Sydney and Agency of Clinical Innovation. The IAS sought to respond to the increasing transition towards focusing on the effect of research after it has been adopted or adapted for use.

The first SpikNing Ceremony was held by the IAS to recognise and acknowledge the research and outcomes achieved through a PhD. We celebrated six RPA staff members who have completed a PhD since the creation of the IAS in 2014. This included A/Professor Cherry Koh, Dr Kate McBride, Dr Rebecca Venchiarutti, A/Professor Payal Mukherjee, Dr Sophie Hogan and Dr David Clark. We also celebrated Professor Michael Solomon who achieved two doctorates.

How to become part of the IAS Network

We invite staff and partners to regularly check in with the IAS where we continue to support the provision of surgical research and education across RPA Hospital, as well as pursuing Innovation, Value and Thought with Strategic Partnerships.



RPA_IAS



RPA INSTITUTE OF ACADEMIC SURGERY

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