

# Australian and New Zealand Intensive Care Research Centre Annual Report 2022





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It is with great pleasure that I introduce the 2022 annual report of the ANZ Intensive Care Research Centre (ANZIC-RC), and congratulate everyone working in, or collaborating with, our Centre.

2022 was a truly remarkable year. The ACTA Clinical Trial of the Year was awarded to the REMAP-CAP trial (Webb, McArthur, Presneill, Higgins, Bellomo, Nichol, Parker, Green, Singh, et al, led from ANZIC-RC), and received by Lisa Higgins in May 2022. REMAP-CAP used a novel trial design to simultaneously evaluate potential therapies for COVID-19 in ICU patients, has produced multiple *NEJM* and *JAMA* papers, and has impacted care of critical care patients almost in real time, during the pandemic. One of these 2022 papers in *JAMA*, was led by Lisa Higgins, *Long-term (180-Day) Outcomes in Critically Ill Patients with COVID-19 in the REMAP-CAP Randomized Clinical Trial*. Remarkably in the same year, a different collaboration led by Prof Carol Hodgson published the TEAM trial (Physical mobilisation in ICU and long-term patient outcomes) in *NEJM*, and Carol also presented it concurrently at ESICM in Paris. In total in 2022 the ANZIC-RC published a record total of 300+ papers.



During 2022, the ANZIC-RC led 15 ongoing NHMRC/MRFF-funded randomised trials in different aspects of intensive care medicine. Furthermore, during 2022 the ANZIC-RC (as the coordinating centre) received an extraordinary 10 new NHMRC/MRFF grants, for a total of \$28 million. These included an NHMRC L3 Investigator Fellowship (Cooper \$3.5M); three new MRFF research Platforms for ECMO (RECOMMEND Hodgson et al \$3M), Critical Care (Udy et al \$4.9M), and ICU Nutrition (Ridley et al \$1.5M); an NHMRC trials grant (SODA-BIC Serpa Neto et al \$1.9M); and MRFF grants for CAP (Webb et al \$2.8M), COVID-19 (Webb et al \$4M), ECMO (PRECISE Burrell et al \$1M; REDEEM Burrell et al \$2.5M), and Fibrinogen In Severe Trauma (FEISTY II McQuilten et al \$3.1M). Productive ANZIC-RC research programs include Critical Care Health Economics, ECMO, Consumer Engagement, and the following:

1. Acute Brain Injury: with 8 publications including Pham et al, *JAMA Neurol*, 2022;79:1049–58; the ANZ/ Europe BONANZA trial of a brain oxygen protocol received Belgian funding for a network of sites (Taccone/Udy); and PRECISION-TBI analysing brain pressure wave forms in TBI patients commenced in Melbourne and Perth.
2. Nutrition: with 17 papers, including the protocol paper for the INTENT randomised trial which recently completed recruitment of 240 patients; and an indirect calorimetry trial in obese ICU patients was funded to commence in 2023.
3. Intensive Care Recovery Program concerns long-term functional recovery of critical illness survivors: with over 30 publications, including the TEAM randomised trial in *NEJM*, an updated systematic review/meta-analysis of early ICU mobilisation in ICU in *NEJM Evidence*, and a paper in *Lancet Respiratory Medicine* from the EXCEL ECMO registry reporting 6-month patient outcomes after ECMO in ICU.

The ANZIC-RC programs are now supported by three recent MRFF platform grants for Critical Care (to improve the care provided to those with sepsis on a national scale), Nutrition (to re-design and inform new models of nutrition care to ensure efficient and effective application of resources in the way consumers need), and ECMO (to determine the optimal treatments for patients on ECMO to improve survival and reduce disability).

I would like to thank our whole team of wonderful staff, adjuncts, students, affiliates and visiting researchers for their plain hard work and dedication to our Centre and its many programs.

*D. Jamie Cooper AO  
Sir John Monash Distinguished Professor  
Co-Director ANZIC-RC*

The Australian and New Zealand Intensive Care Research Centre (ANZIC-RC) supports the design, funding and conduct of large, randomised trials answering key clinical questions in intensive care medicine. The findings have improved clinical care and outcomes for ICU patients in Australia and internationally, and lowered health care costs. The ANZIC-RC is also a national teaching centre for clinician researchers at all levels in intensive care.

Established in 2006 with a National Health and Medical Research Council Enabling Grant and Monash University support, the ANZIC-RC is in the Monash School of Public Health and Preventive Medicine. It is located within the Alfred Research Alliance, adjacent to The Alfred Hospital, Melbourne. The ANZIC-RC offers a range of services, from research advice to complete randomised trial management, to clinical registries.

The aims of the ANZIC-RC are to:

- Conduct high-impact, large-scale, investigator-initiated clinical trials designed to determine best and most cost-effective practice in Intensive Care Medicine (ICM)
- Increase the quality of clinical trial design and biostatistical analysis in this field
- Be readily accessible to all Australian and New Zealand clinician-researchers in critical care
- Expand the national and international reach of large Australian and New Zealand led trials
- Introduce systems to integrate research results into clinical practice by promulgating research-based practice guidelines
- Develop integrated clinical research programs that provide the training ground for future clinical trialists in the field of ICM
- Encourage and support clinician researchers in research theory, study design, study conduct, data analysis and scientific writing.



Congratulations to our team members who received awards in 2022 including:

- ACTA Trial of the Year awarded to **REMAP-CAP** (CIA **Steve Webb**, **Colin McArthur**, **Jeff Presneill**, **Lisa Higgins**, **Rinaldo Bellomo**, **Jane Parker**, **Cameron Green**, **Vanessa Singh**, et al). This trial employed a novel design to simultaneously evaluate potential treatments, and efficiently and rapidly generate evidence, which had a significant impact on the care of critical patients during the COVID-19 pandemic.
- NHMRC 10 of the Best: Showcasing significant projects that support the improvement of human health. *Improving outcomes for patients with critical bleeding requiring massive transfusion* (NHMRC 1074654 Partnership Project: **Cooper DJ**, Wood E, Cameron P, Isbister J, **French C**, Stanworth S, McLintock MC, McQuilten Z, Zatta A, Barker A) was selected as one of the 10 Best.
- The Irish Healthcare Awards International Prize of the Year was awarded to the HRB-Irish Critical Care-Clinical Trials Network (HRB-ICC-CTN), led by **Alistair Nichol**, for “Working together globally to defeat COVID-19: The HRB-ICC-CTN Pandemic Preparedness Program”.
- The title of doctor honoris causa, the University of Helsinki’s highest recognition, was awarded to **Rinaldo Bellomo** at the conferment ceremony in June.
- **Rinaldo Bellomo** was ranked #10 in Australia and #455 internationally on the Research.com 2022 Ranking of the Best Scientist in the World (based on the h-index data from Microsoft Academic Graph).
- **Carol Hodgson** was elected a Fellow of the Australian Academy of Health and Medical Sciences (FAHMS).
- **Emma Ridley** won the Assembly on Critical Care International Early Career Achievement Award. Recognising a junior faculty with their primary appointment outside USA/Canada with exemplary achievements and who demonstrates clear promise for a future of sustained productivity.
- **Jamie Cooper** was awarded a NHMRC Investigator Grant (Level 3).
- **Carol Hodgson** was granted Honorary Membership of ESICM (European Society of Intensive Care Medicine).
- PhD conferred: **Dashiell Gantner**, and PhD graduation: **Bianca Levkovich**.
- **Oana Tatucu-Babet** received a travel grant from the European Society for Clinical Nutrition and Metabolism (ESPEN), awarded to the top ranked abstract submissions.
- **Michelle Paton** won the Best Allied Health Poster Award at the ANZICS ASM in Sydney for *Correlation of patient-reported outcome measures to performance-based function in critical care survivors: PREDICTABLE*.
- **Naomi Hammond** won the Gavin Leslie Best Nursing Paper at the ANZICS/ACCCN ASM for *Impact of the COVID-19 pandemic on critical care health care workers depression, anxiety, and stress levels*.
- **Oana Tatucu-Babet** selected as 1 of 20 clinical nutrition researchers internationally to take part in the advanced research training program (Fresenius Kabi JUMPstart Program).
- In the School of Public Health and Preventive Medicine Excellence Awards **Aidan Burrell** was presented with the Early Career Research Excellence Award, and **Lisa Higgins** with the Early Career Research Best Paper Award for *Predictors of death and new disability after critical illness: a multicentre prospective cohort study* (**Higgins AM**, **Neto AS**, **Bailey M**, **Bellomo R**, **Cooper DJ**, **Linke N**, **Paton M**, **Young M**, **Hodgson CL** et al; *PREDICT Study Investigators. Intensive Care Med* 2021;47:772-81).
- **Oana Tatucu-Babet** awarded a Monash University, Early Career Researcher Travel Grant.



# ANZIC-RC Governance - Advisory Board



**Prof Jamie Cooper**  
*Co-Director ANZIC-RC*  
**Prof Rinaldo Bellomo**  
*Co-Director ANZIC-RC*  
**Prof Carol Hodgson**  
*Director CRE-ICU, Co-Dep. Director ANZIC-RC*  
**Prof Alistair Nichol**  
*Co-Deputy Director ANZIC-RC*  
**Prof Andrew Udy**  
*Co-Deputy Director ANZIC-RC*



**Prof Sophia Zoungas**  
*Head SPHPM Monash*  
**Prof Sandra Peake**  
*Chair ANZICS-CTG*  
**A/Prof Craig French**  
*Immediate-Past Chair ANZICS-CTG*  
**Prof David Pilcher**  
*Representative ANZICS-CORE*  
**Prof Colin McArthur**  
*Representative New Zealand*  
**Dr Shay McGuinness**  
*Representative New Zealand*



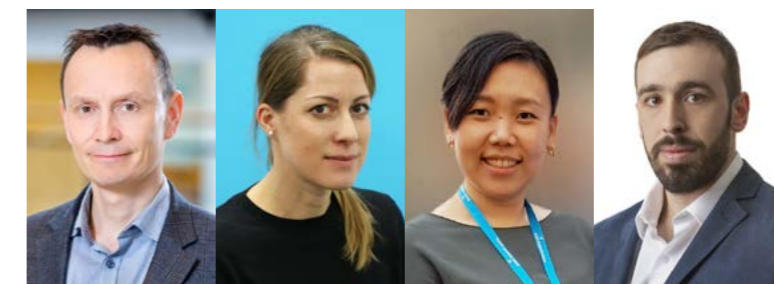
# ANZIC-RC Senior Research Fellows



**A/Prof Daryl Jones**  
*(Australia) 2006*  
**Prof Alistair Nichol**  
*(Ireland) 2007*  
**Dr Andrew Westbrook**  
*(Ireland) 2008*  
**Prof Ville Pettilä**  
*(Finland) 2009*  
**Prof Cécile Aubron**  
*(France) 2010*

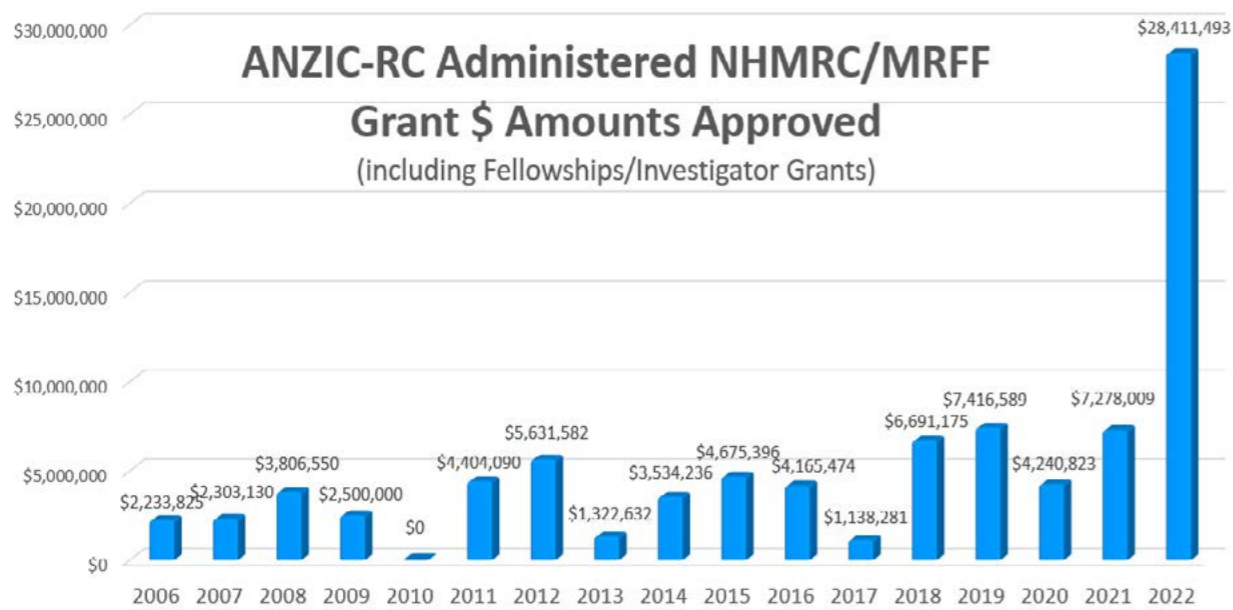


**Prof Carol Hodgson**  
*(Australia) 2011*  
**Dr Dashiell Gantner**  
*(Australia) 2012*  
**A/Prof Maija Kaukonen**  
*(Finland) 2012-3*  
**A/Prof Andrew Davies**  
*(Australia) 2014-5*

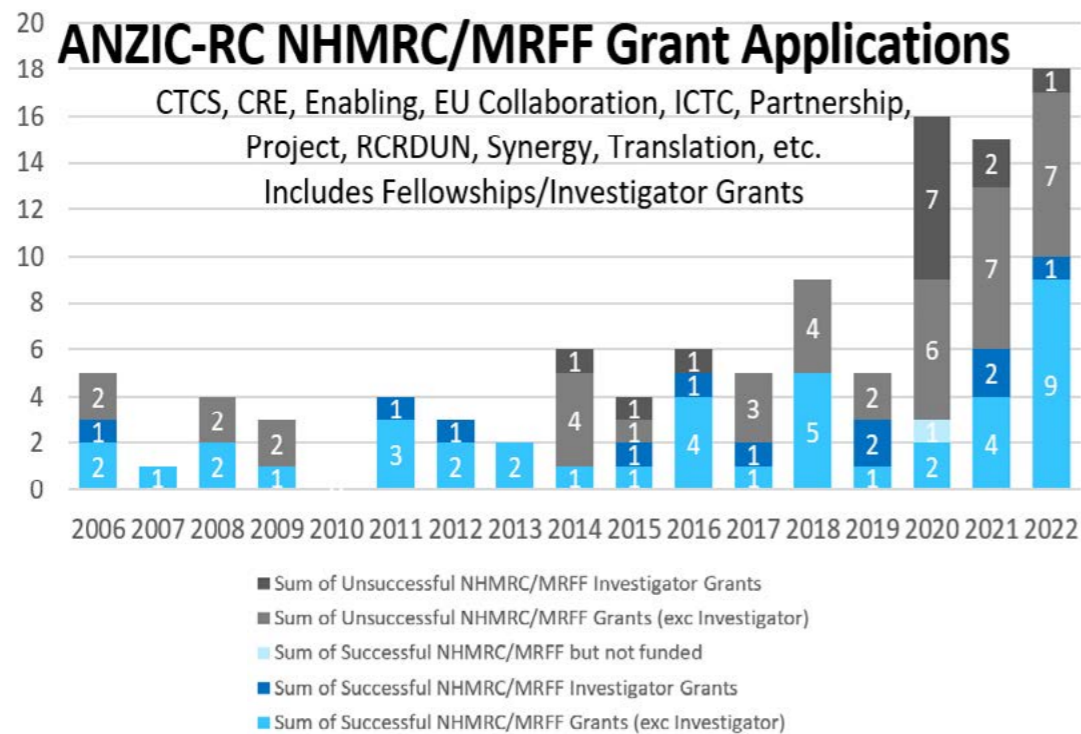


**Prof Markus Skrifvars**  
*(Finland) 2016-7*  
**Dr Nora Luethi**  
*(Switzerland) 2017-8*  
**Dr Tomoko Fujii**  
*(Japan) 2018-9*  
**Dr Ary Serpa Neto**  
*(Brazil) 2020-1*

The graph below shows that in 2022 the ANZIC-RC had a record \$28+ million in new NHMRC/MRFF grant funding for ANZIC-RC administered grants.



The graph below shows that in 2022 the ANZIC-RC had a record 10 new NHMRC/MRFF ANZIC-RC administered grants.



The 10 new NHMRC/MRFF ANZIC-RC administered grants totalling \$28+ million were:

Title	Agency / Grant Type	Chief Investigator/s	Year/s of Funding	Total Amount	Administering Institution
PLATFORM - CRITICAL CARE: A national critical care research platform to ensure high-quality sepsis care in Australian ICUs	NHMRC/MRFF 2023066 EMCR	Udy A, McQuilten Z, Saxena M, Serpa Neto A, Higgins L, Delaney A, Eastwood G, Jones D, Shekar K, Hammond N, Thompson K	2023-2028	\$ 4,899,779	Monash (ANZIC-RC)
PLATFORM - ECMO: RECOMMEND Platform Trial: Generating new evidence to reduce complications and improve the safety and efficacy of ECMO in patients with severe cardiac and respiratory failure	NHMRC/MRFF 2023109 CTAI	Hodgson C, Cooper DJ, McQuilten Z, Fraser J, Higgins A, Heritier S, Pellegrino V, Nair P, Ryan E, Fan E, Serpa Neto A, Burrell A, Orford N	2023-2028	\$ 2,985,993	Monash (ANZIC-RC)
PLATFORM - ICU NUTRITION: A national platform for improving quality of nutrition care for critically ill adults and children	NHMRC/MRFF 2023953 CR-AH	Ridley E, Peake S, Marshall A, Udy A, Hodgson C, Nichol A, Ayton D, Chapple L-A, Freeman-Sanderson A, Tatuco O, Bailey M, Butt W, Fetterplace K, King V, Winderlich J	2023-2026	\$ 1,494,951	Monash (ANZIC-RC)
*Adaptive platform trial for severe community acquired pneumonia: new interventions for severe CAP and influenza	NHMRC/MRFF 2015788 ICTC	Webb S, McQuilten Z, Nichol A, Hills T, Higgins A, Burrell A, McKenzie A, Cheng A, Seppelt I, McArthur C	2023-2027	\$2,824,703	Monash (ANZIC-RC)
Improving critically ill patient outcomes through randomised trials and registries in intensive care	NHMRC 2016324 Investigator	Cooper DJ	2023-2027	\$3,487,110	Monash (ANZIC-RC)
PRECISE: PRrecision Ecmo in Cardlogenic Shock Evaluation	NHMRC/MRFF 2017089 Cardiovascular	Burrell A, Hodgson C, Fraser J, Stub D, Shekar K, Marasco S, Pellegrino V, Dennis M, Higgins A, Kasza J, Nair P, Nichol A, Serpa Neto A, McQuilten Z, Combes A	2023-2025	\$999,779	Monash (ANZIC-RC)
*A coordinated multiplatform randomised trial for hospitalised patients with COVID-19	NHMRC/MRFF 2016162 COVID-19 TAPHA	Webb S, Tong S, McQuilten Z, Davis J, Nichol A, Totterdell J, Higgins A, Hammond N, Cheng A, Roberts J, Burrell A, Denholm J, Venkatesh B, McKenzie A, McArthur C	2022-2026	\$3,997,914	Monash (ANZIC-RC)
FEISTY II: Fibrinogen Early In Severe Trauma StudY II	NHMRC/MRFF 2015332 RCRDUN	McQuilten Z, Winearls J, Cooper DJ, Reade M, French C, Presneill J, Higgins A, Balogh Z, Heritier S, Wood E	2022-2026	\$ 3,162,179	Monash (ANZIC-RC)
REDEEM: RCT of ECMO to Desedate, Extubate Early and Mobilise in severe acute respiratory infection	NHMRC/MRFF 2015039 RCRDUN	Burrell A, Cooper DJ, Hodgson C, Fraser J, Nair P, Pellegrino V, McDonald C, Kasza J, Fan E, Udy A	2022-2026	\$ 2,534,432	Monash (ANZIC-RC)
SODA-BIC: Sodium Bicarbonate for Decompensated Metabolic Acidosis in the Intensive Care Unit - A Multicentre, Randomised, Double-Blind Clinical Trial	NHMRC 2014960 CTCS	Serpa Neto A, Bellomo R, Peake S, Bailey M, Cooper DJ, Udy A, Young P, Secombe P, Higgins A, See E	2022-2027	\$1,920,487	Monash (ANZIC-RC)

Other grants were:

Title	Agency / Grant Type	Chief Investigator/s	Year/s of Funding	Total Amount	Administering Institution
Centre of Research Excellence - ... antimicrobial resistance (RESPOND)	NHMRC CRE 2007007	Roberts J, ... Bellomo R, et al	2022-2026	\$2,500,000	University of Queensland
Healthcare resource utilisation and long term outcomes following critical illness	NHMRC Investigator 2008447	Higgins A	2022-2026	\$ 650,740	Monash (ANZIC-RC)
Improving Outcomes after Extracorporeal Membrane Oxygenation (ECMO)	NHMRC Investigator 2010110	Burrell A	2022-2026	\$450,370	Monash (ANZIC-RC)
SNAPPY: Staphylococcus aureus Network Adaptive Platform trial for Paediatrics + Youth	NHMRC 2014900	Bowen A, Davis J, Tong S, Campbell A, ... Webb S, et al	2022-2027	\$2,045,957	University of WA
Staphylococcus aureus Network Adaptive Platform Trial	NHMRC CTCS 1184238	Tong S, Davis J, Webb S, Cheng A, Marsh J, Berry S, Lye DC, et al	2022-2025	\$4,953,507	University of Melbourne
TARGET-PROTEIN: Augmenting dietary protein during critical illness	NHMRC/MRFF 2014786 RCRDUN	Deane A, Chapman M, Peake S, ... Presneill J, Bellomo R, Young P, Ridley E et al	2022-2026	\$1,992,218	University of Melbourne
ROSETTA: Red BIOod Cell TranSfusion in ECMO - a pilot TRIal	ANZSBT Research Grant	Buscher H, ... Hodgson C, Nichol A, Burrell A, Dennis M, ... Flint A	2022-2024	\$18,000	University of NSW
PROACTIVE Pilot Trial: Prevent Reduced Outcomes in Acute Respiratory Distress Syndrome by Transitioning from Invasive Ventilation to ECMO CA\$170,850	CIHR Canada Project Grant	Burrell A, Fan E, Ferguson N	2022-2025	\$185,282	U Toronto Canada
ECMO-AI: Survival Prediction of ECMO Using Artificial Intelligence	ELSO 2022003	Stephens A, Hodgson C, ... Pellegrino V, Pilcher D, et al	2022-2023	\$6,942	Monash
SHERPA: Scene or Hospital ECMO for Refractory cardiac arrest PATients	Heart Foundation Vanguard 107045	Burrell A, Bernard S, Richardson A, Orosz J	2022-2023	\$150,000	Monash (ANZIC-RC)

## Other Active Research Grants (continued)

Title	Agency / Grant Type	Chief Investigator/s	Year/s of Funding	Total Amount	Administering Institution
TAME-Translation: Translating the TAME cardiac arrest trial results to public, policy, clinicians and researchers (€59,944)	HRB, Ireland Knowledge Translation KTA-2022-033	Nichol A, et al	2022-2023	\$92,180	University College Dublin
Development, validation and dissemination of PRECIS-3 tool to support the design of pragmatic RCTs (€370,000)	HRB, Ireland Investigator-Led ILP-POR-2022-044	Shiely F, ... Nichol A, et al	2022-2026	\$569,050	University College Cork
Clinical Research Facilities/Centres UCD Clinical Research Centre (€5,321,429)	HRB, Ireland CRFC-2001-002	Doran P, Carroll A, Crowley R, Cullen W, Godson C, ... Nichol A	2022-2026	\$ 8,184,712	University College Dublin
Pandemic Resilience: translating knowledge for improved future pandemic preparedness (€59,184)	HRB, Ireland Knowledge Translation KTA-2022-032	Nichol A, et al	2022-2023	\$91,222	University College Dublin
Advancing Women's Success Grant	Monash FMNHS	Tatucu-Babet O	2022	\$11,000	Monash (ANZIC-RC)
Building an international precision medicine platform trial for ARDS £176,710	NIHR UK EME Acceleration Award	McAuley D, Beane A, Fowler A, ... Nichol A, et al	2022-2023	\$310,077	UK
Establishment of an Irish Acquired Brain Injury Public and Patient Involvement Group (Irish ABI-PPI-G) (€4,000)	PPI Ignite Network @ UCD, Seed Funding	Nichol A, Hays L, Conlon E, Ainscough K, Crawley L, Keegan D	2022-2023	\$6,165	University College Dublin
A suture-less cannula for rapid, off-bypass implantation of left ventricular assist devices	NHMRC 2002567	Gregory S, Marasco S, McArthur S, Carberry J, Liao S, Burrell A	2021-2024	\$ 816,491	Monash
CRE-ICU: A Centre for Research Excellence to Transform Outcomes of Critically Ill Patients in ICU	NHMRC CRE 2006514	Hodgson C, Cooper DJ, Fraser J, Peake S, Bailey M, McDonald C, ... Higgins A	2021-2026	\$2,500,000	Monash (ANZIC-RC)
ECMO-Rehab: Early Cardiac Rehab to Improve Survival and Recovery in Critically-ill Patients on ECMO	NHMRC/MRFF 2007591 CV Health Mission	Hodgson C, Higgins A, Bailey M, Pellegrino V, Nair P, McGiffin D, Presneill J, et al	2021-2023	\$ 662,649	Monash (ANZIC-RC)
Informatics-TBI: Informatics approach to predict outcomes ... moderate to severe TBI	NHMRC/MRFF 2008223 Mission TBI	Fitzgerald M, Gabbe B, Lannin N, Vallmuur K, ... Cooper DJ, et al	2021-2023	\$ 499,816	Monash
*LOGICAL: Low OxyGen Intervention for Cardiac Arrest injury Limitation trial	NHMRC CTCS 2001237	Hodgson C, Bellomo R, Young P, Peake S, Bailey M, McDonald C, Higgins A, Nichol A, Udy A, Deane A	2021-2026	\$ 2,314,403	Monash (ANZIC-RC)
*PRECISION-TBI – Establishing evidence-based, data driven, clinical care guidelines	NHMRC/MRFF 2007705 Mission TBI	Udy A, Cooper DJ, Jeffree L, Bellomo R, Nichol A, et al	2021-2025	\$ 499,478	Monash (ANZIC-RC)
HIGHMAPPCA: Higher mean blood pressure during post cardiac arrest care €500K	Academy of Finland Bayesian Platform Trial	Skrifvars M, ... Nichol A, ... Eastwood G, et al	2021-2025	\$771,041	University of Helsinki
DIRECT trial: Guiding energy provision using indirect Calorimetry	Baxter Nutrition Clinical Evidence Council	Tatucu-Babet O	2021-2022	\$33,807	Monash (ANZIC-RC)
Improving Outcomes After Critical Illness (€999,945)	HRB, Ireland Clinical Trials Network	Nichol A, Ainscough K, Brickell K, Curley A, Curley G, et al	2021-2026	\$1,537,516	University College Dublin
National Irish COVID-19 Biobank (€2,000,000)	HRB, Ireland NICB	Mallon P, Bergin C, Doran P, Brennan D, ... Nichol A, et al	2021-2023	\$ 3,078,417	UC Dublin and TC Dublin
Platelet transfusion in preterm babies with thrombocytopenia (€1,218,690)	HRB, Ireland RCT	Curley A, Doran P, Nichol A, et al	2021-2027	\$ 1,875,818	University College Dublin
Trials Methodology Research Network (Ireland) (€3,000,000)	HRB, Ireland TMRN	Devane D, Nichol A, et al	2021-2026	\$4,623,804	University of Galway
Erythropoietin to improve outcomes for critically ill trauma patients (NZ\$1,119,020)	HRC, New Zealand 20/366 Project Grant	McArthur C, Kazemi A, Moore J, Young P, Freebairn R, ... French C	2021-2024	\$1,037,290	MRINZ
Improving the Long Term Outcomes after ECMO for Acute Heart Failure	National Heart Foundation Fellowship	Burrell A	2021-2022	\$151,200	Monash (ANZIC-RC)
COVIC-HA: Coronavirus in Victorian Healthcare + aged care workers Cohort Study	Victorian Government, Dept of JPR	Leder K, ... McGuinness S, Zoungas S, Hodgson C, ... Udy A, et al	2021-2022	\$1,401,000	Monash
ARISE-Fluids: AUS Resuscitation In Sepsis Evaluation: Fluid or Vasopressors in ED	NHMRC/MRFF 1200084 RCRDUN	Peake S, Macdonald S, Delaney A, ... Udy A, ... Higgins A, et al	2020-2024	\$2,335,540	Monash (ANZIC-RC)
*BONANZA: Brain Oxygen Neuromonitoring In Australia + NZ Assessment Trial	NHMRC Project Grant 1156636	Udy A, Cooper DJ, Nichol A, ... Bailey M, ... Higgins A	2020-2025	\$2,431,863	Monash (ANZIC-RC)
*BONANZA: Brain Oxygen Neuromonitoring In Australia and NZ Assessment Trial	NHMRC/MRFF 1167706 Project	Udy A, Cooper DJ, Nichol A, ... Bailey M, ... Higgins A	2020-2024	\$1,084,852	Monash (ANZIC-RC)
BONE-ZONE: Bone Loss Prevention with Zoledronic Acid or Denosumab in Crit Ill Women	NHMRC/MRFF 1199726 RCRDUN	Orford N, ... Cooper DJ, Hodgson C, ... Bailey M, ... Myburgh J	2020-2025	\$1,905,283	Monash (ANZIC-RC)
Early interventions to improve the quality of survival after critical illness	NHMRC Investigator 1173271	Hodgson C	2020-2024	\$1,243,891	Monash (ANZIC-RC)
Generation of ... knowledge to inform global nutrition practice during critical illness	NHMRC Investigator 1176532	Ridley E	2020-2024	\$561,800	Monash (ANZIC-RC)
Reversing Renal Medullary Hypoxia and Acute Kidney Injury in Sepsis	NHMRC Ideas 1188514	May C, Landakeva Y, Bellomo R, Evans R	2020-2022	\$921,236	University of Melbourne
SPICE IV: Sedation Practice in IC Evaluation: Early Sedation with dexmedetomidine in Older Ventilated Critically Ill Patients	NHMRC CTCS 1186863	Shehabi Y, Bellomo R, Howe B, Hodgson C, Presneill J, Bailey M, Reade M, Webb S, ... Seppelt I	2020-2025	\$4,995,197	Monash
The impact of sepsis in critically ill patients	NHMRC 1173079 Investigator	Myburgh J	2020-2024	\$2,101,595	University of NSW

## Other Active Research Grants (continued)

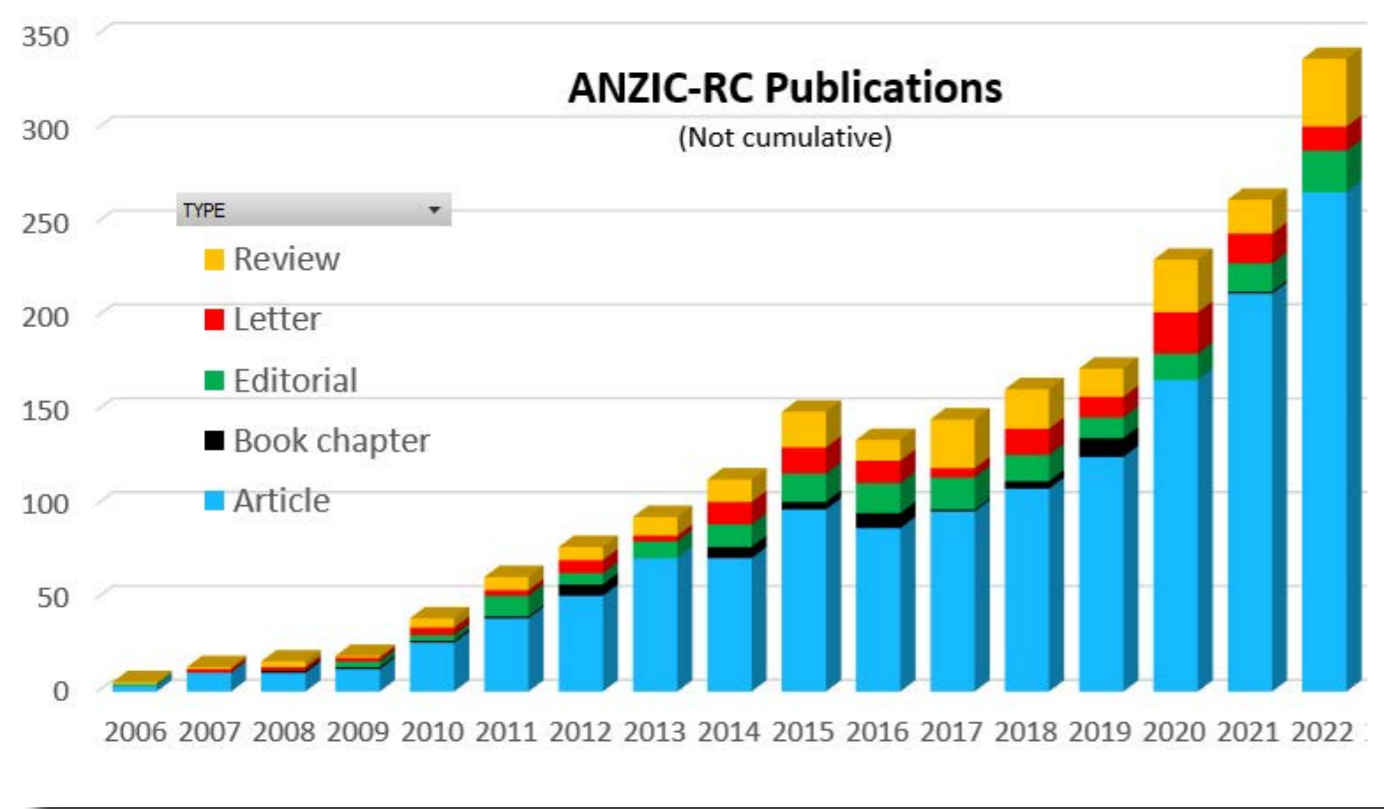
Title	Agency / Grant Type	Chief Investigator/s	Year/s of Funding	Total Amount	Administering Institution
Addressing Australia's National Transfusion Research Priorities	NHMRC Synergy 1189490	Wood E, McQuilten Z, ... Cooper DJ, Reade M, Higgins L, et al	2020-2024	\$5,000,000	Monash
Clinical Trials Network Award Supplementary Funding for COVID research (€400,000)	HRB Ireland CTNASF	Nichol A, et al	2020-2022	\$616,623	University College Dublin
IMPROVE-HF: Improving quality of survival for patients with acute ... heart failure	NHF Fellowship	Hodgson C	2020-2024	\$200,000	Monash (ANZIC-RC)
ASCEND: ARDS in Children and ECMO initiation strategies impact on Neuro-Dev	NIH Project 1R01HL153519	Barbaro R, Hodgson C	2020-2025	\$34,710	University of Michigan
CLIP: Trial of cryopreserved platelets vs. conventional liquid-stored platelets for management of post-surgical bleeding	NHMRC 1156641 Project	Reade M, Marks DC, French C, McQuilten Z, Weinberg L, Irving D, et al	2019-2022	\$1,825,648	Monash (ANZIC-RC)
EPO-TRAUMA: Trial of Erythropoietin alfa vs. placebo in critically ill trauma patients	NHMRC/MRFF Project 1170001	French C, Nichol A, Bellomo R, Cooper DJ, Bailey M, Higgins A, McArthur C, Hodgson C	2019-2025	\$3,499,109	Monash (ANZIC-RC)
BLING III: Phase III RCT of continuous β-lactam infusion in critically ill (NZ\$1,195,807)	HRC NZ Project	McGuinness S, Parke R, Freebairn R, ... McArthur C, Roberts S, et al	2019-2023	\$1,144,097	MRINZ
TAME Cardiac Arrest: Targeted Therapeutic Mild Hypercapnia After Resuscitated Cardiac Arrest RCT (NZ\$1,199,994)	HRC NZ Project	Parke R, McGuinness S, Bellomo R, Eastwood G, Buehner U, Gilder E, ... McArthur C, et al	2019-2022	\$1,148,103	MRINZ
TEAM: Targeted Early Activity and Mobilisation in the ICU (NZ\$1,011,247)	HRC NZ Project	Young P, ... McGuinness S, ... McArthur C, ... Higgins A, ... Hodgson C, Bailey M, et al	2019-2022	\$967,648	MRINZ
NHMRC Practitioner Fellowship Level II	NHMRC 1136432 Fellowship	Bellomo R	2018-2022	\$329,822	Austin
NHMRC Practitioner Fellowship Level II	NHMRC 1142215 Fellowship	Cooper DJ	2018-2022	\$412,277	Monash (ANZIC-RC)
BEAT-CF: Bayesian Evidence-Adaptive Trial to optimise management of Cystic Fibrosis	NHMRC/MRFF 1152376	Snelling T, Berry S, Jaffe A, Marsh J, McKenzie A, ... Webb S	2018-2023	\$ 3,427,550	University of Sydney
*BLENDER: Blend to Limit Oxygen in ECMO: A Randomised Controlled Registry Trial	NHMRC Project 1152270	Pilcher D, Hodgson C, Fraser J, Cooper DJ, Burrell A, Pellegrino V, Udy A, ... Bailey M, Higgins A	2018-2022	\$726,004	Monash (ANZIC-RC)
*EXCEL Registry: A collaborative approach to improve outcomes of Australian patients with acute heart failure and cardiac arrest requiring extracorporeal life support	NHMRC Partnership 1152793	Hodgson C, Cooper DJ, Bailey M, Fraser J, Pilcher D, Bernard S, Gattas D, Pellegrino V, Stub D, Higgins A	2018-2023	\$ 692,657	Monash (ANZIC-RC)
TAME: Targeted Therapeutic Mild Hypercapnia After Resuscitated Cardiac Arrest	NHMRC Project 1119855	Bernard S, Eastwood G, Bellomo R, Stub D, Archer J, Hodgson C	2017-2022	\$2,069,878	Monash (ANZIC-RC)
TEAM: Treatment of invasively ventilated adults with Early Activity and Mobilisation	NHMRC Project 1120319	Hodgson C, Gabbe B, Webb S, Presneill J, Young P, Iwashyna T	2017-2022	\$1,467,137	Monash (ANZIC-RC)
STARRT-AKI: STandard vs Accelerated initiation of RRT in AKI (CA\$1,556,776)	CIHR Canada	Bagshaw S, ... Higgins A, ... McGuinness S, ... Nichol A, et al	2017-2022	\$1,650,686	U Toronto Canada
APPRISE: Australian Partnership (for) Preparedness Research on Infectious (disease) Emergencies	NHMRC Centre for Research Excellence 1116530	Lewin S, Sorrell T, McVernon J, Webb S, Kaldor J, Andrews R, Cheng A, Gilbert L, et al	2016-2022	\$4,996,415	University of Melbourne
*OPTIMISE-CAP: Optimisation by Platform Trial Involving Multiple Interventions with Simultaneous Evaluation in CAP	NHMRC Project 1101719	Webb S, McArthur C, Berry D, Paterson D, Cheng A, Heritier S, Presneill J, Litton E	2016-2022	\$4,413,145	Monash (ANZIC-RC)
			Total	\$124,530,245	

\* Lead Human Ethics has approved waived consent for enrolment/hospital data, PLUS opt-out/deferred or consent for follow-up

## Government Research Agreements

Title	Agency / Grant Type	Chief Investigator/s	Year/s of Funding	Total Amount	Administering Institution
SPRINT-SARI	Commonwealth (Federal Health Department)	Udy A, Burrell A	2020-2022	\$2,214,533	Monash (ANZIC-RC)
Triennial funding for ANZICS Centre for Outcome and Resource Evaluation to provide registry services and monitoring delivery of ICM throughout ANZ	Jurisdictional Health Departments of ANZ	Pilcher D, ... Secombe P, Huxson S	2020-2022	\$4,313,988	Australian and New Zealand Intensive Care Society (ANZICS)
			Total	\$6,528,541	

The graph above shows that in 2022 the ANZIC-RC had a record 341 publications.



## Landmark 2022 ANZIC-RC Publications

1. TEAM Study Investigators, the ANZICS Clinical Trials Group, **Hodgson CL, Bailey M, Bellomo R, Brickell K, Broadley T, Buhr H, Gabbe BJ, Gould DW, Harrold M, Higgins AM, Hurford S, Iwashyna TJ, Serpa Neto A, Nichol AD, Presneill JJ, Schaller SJ, Sivasuthan J, Tipping CJ, Webb S, Young PJ.** Early Active Mobilization during Mechanical Ventilation in the ICU. *N Engl J Med* 2022;387:1747-58.
2. REMAP-CAP Writing Committee for the REMAP-CAP Investigators, **Higgins AM, Berry LR, Lorenzi E, ... Webb SA, Lawler PR.** Long-term (180-Day) Outcomes in Critically Ill Patients With COVID-19 in the REMAP-CAP Randomized Clinical Trial. *JAMA* 2022; epub.
3. REMAP-CAP Writing Committee for the REMAP-CAP Investigators, Bradbury CA, Lawler PR, Stanworth SJ, ... **Webb SA, Gordon AC.** Effect of Antiplatelet Therapy on Survival and Organ Support-Free Days in Critically Ill Patients With COVID-19: A Randomized Clinical Trial. *JAMA* 2022;327:1247-59.

4. Abrams D, Madahar P, Eckhardt CM, et al. Early Mobilization during Extracorporeal Membrane Oxygenation for Cardiopulmonary Failure in Adults: Factors Associated with Intensity of Treatment. *Ann Am Thorac Soc* 2022;19:90-8.
5. Ahern S, Gabbe BJ, Green S, et al. Realising the potential: leveraging clinical quality registries for real world clinical research. *Med J Aust* 2022;216:273-7.
6. Ahuja S, de Groot HJ, Paulus F, et al. Association between early cumulative fluid balance and successful liberation from invasive ventilation in COVID-19 ARDS patients - insights from the PROVENT-COVID study: a national, multicenter, observational cohort analysis. *Crit Care* 2022;26:157.
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11. Batchelor RJ, Wong N, Liu DH, et al. Vasoplegia Following Orthotopic Heart Transplantation: Prevalence, Predictors and Clinical Outcomes. *J Card Fail* 2022;28:617-26.
12. Begum H, Neto AS, Alliegro P, et al. People in intensive care with COVID-19: demographic and clinical features during the first, second, and third pandemic waves in Australia. *Med J Aust* 2022;217:352-60.
13. Buiteman-Kruizinga LA, Serpa Neto A, Schultz MJ. Automation to improve lung protection. *Intensive Care Med* 2022;48:943-6.
14. Campos NS, Bluth T, Hemmes SNT, et al. Intraoperative positive end-expiratory pressure and postoperative pulmonary complications: a patient-level meta-analysis of three randomised clinical trials. *Br J Anaesth* 2022;128:1040-51.
15. Chan R, Ueno R, Afroz A, Billah B, Tiruvoipati R, Subramaniam A. Association between frailty and clinical outcomes in surgical patients admitted to intensive care units: a systematic review and meta-analysis. *Br J Anaesth* 2022;128:258-71.
16. Cheng V, Abdul-Aziz MH, Burrows F, et al. Population Pharmacokinetics of Vancomycin in Critically Ill Adult Patients Receiving Extracorporeal Membrane Oxygenation (an ASAP ECMO Study). *Antimicrob Agents Chemother* 2022;66:e0137721.
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- of 6-Month Outcomes of COVID-19 vs Non-COVID-19 Survivors of Critical Illness. *Am J Respir Crit Care Med* 2022;epub.
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### Other Publications

In 2022 there were 233 other papers in PubMed-listed journals .

# ANZIC-RC Academic Staff



**Prof Jamie Cooper**  
*Co-Director ANZIC-RC*  
**Prof Rinaldo Bellomo**  
*Co-Director ANZIC-RC*  
**Prof Carol Hodgson**  
*Director CRE-ICU, Co-Dep. Director ANZIC-RC*  
**Prof Alistair Nichol**  
*Co-Deputy Director ANZIC-RC*  
**Prof Andrew Udy**  
*Co-Deputy Director ANZIC-RC*



**Prof Michael Bailey**  
*Statistician*  
**Prof Steve Webb**  
*Intensivist*  
**Dr Ary Serpa Neto**  
*Senior Research Fellow*  
**Dr Eldho Paul**  
*Senior Research Fellow*  
**Dr Emma Ridley**  
*Senior Research Fellow*



**Dr Glenn Eastwood**  
*Senior Research Fellow*  
**Dr Lisa Higgins**  
*Senior Research Fellow*  
**Dr Toby Jeffcote**  
*Senior Research Fellow*  
**Dr Oana Tatucu**  
*Research Fellow*

# ANZIC-RC Professional Staff



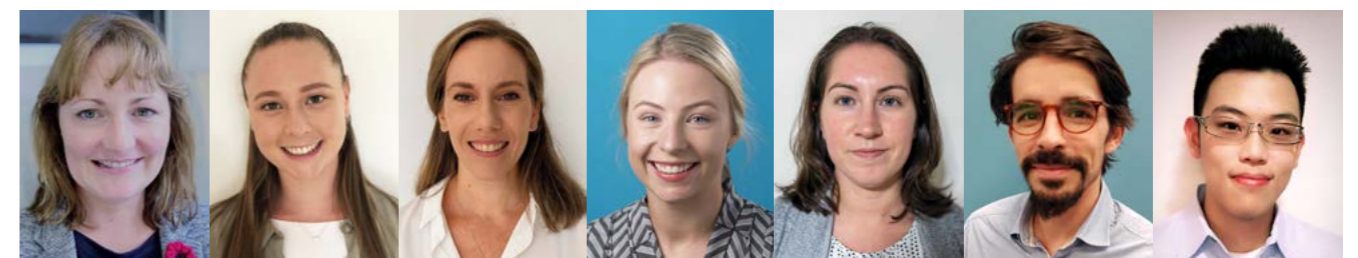
**Mr Tony Trapani**  
*Research Manager*  
**Ms Lynne Murray**  
*Business Manager*  
**Ms Amanda Martin**  
*Administration Manager*  
**Ms Belinda Howe**  
*ARISE-FLUIDS + CLIP II Snr Project Manager*  
**Ms Kelly Ottosen**  
*BLENDER Project Manager*  
**Dr Patricia Alliegro**  
*BONANZA Project Manager*  
**Ms Shirley Vallance**  
*BONANZA Project Manager*  
**Ms Allison Bone**  
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**Dr Nicole Ng**  
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**Ms Vicki Papanikolaou**  
*EPO-TRAUMA Project Manager*  
**Mr Bentley Fulcher**  
*EXCEL Project Manager*  
**Ms Bridget Ady**  
*FEISTY + TAME Project Manager*  
**Mr Curtis Hopkins**  
*HEALTH ECONOMICS Research Officer*  
**Ms Marlene Gojanovic**  
*INENT Project Officer*  
**Mr Alex Poole**  
*INPUT Project Manager*  
**Ms Anne Mather**  
*LOGICAL Snr Project Officer*



**Ms Victoria King**  
*NUTRITION Snr Project Manager*  
**Dr Camila Battistuzzo**  
*PRECISION-TBI Project Manager*  
**Ms Stephanie Hunter**  
*REDEEM Project Manager*  
**Ms Jane Parker**  
*REMAP-CAP Project Manager*  
**Ms Vanessa Singh**  
*REMAP-CAP Project Manager*  
**Ms Bec McEldrew**  
*REMAP-CAP Snr Project Officer*  
**Mr Cameron Green**  
*REMAP-CAP Global Project Manager*  
**Ms Mairead McNamara**  
*SODA-BIC Project Manager*



**Ms Jodi Dumbrell**  
*SPRINT-SARI Project Officer*  
**Ms Tessa Broadley**  
*Project Manager TEAM*  
**Dr Elizabeth Ayre**  
*Project Officer*  
**Ms Natalie Linke**  
*Project Officer*  
**Ms Jaclyn Fraser**  
*Project Officer*  
**Mr Lonni Gomes**  
*Research and Admin Officer*  
**Mr Luke Lu**  
*Biomed Engineer Neurosignal Analysis*

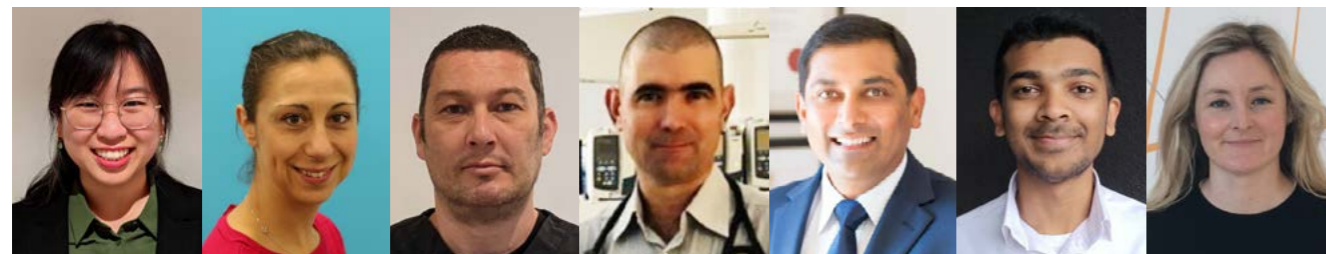
## PhD Scholars: Active in 2022



Ms Jenna Amon    Mr Alastair Brown    Ms Kelly Cairns    Ms Sara Carrillo    Ms Sheraya De Silva    Ms Clare Ferguson    Dr Andrew Flint



Dr Dashiell Gantner *Conferred 2022*    Ms Sabrina Hernandez    Ms Jenna Lang    Mr Kuan-Ying (Luke) Lu    Dr Vinodh Nanjaya    Dr Rekha Pai Mangalore    Ms Michelle Paton



Xiuxian Pham    Ms Gemma Pound    Mr Paul Ross    Dr Paul Secombe    Dr Ashwin Subramanian    Mr Avishka Wickramarachchi    Ms Jacinta Winderlich

## Other Students: Active in 2022



Mr Atacan Etrugrul    Mr Nathaniel Flacks    Ms Louisa He    Ms Linda Nguyen  
*BMedSc (Hons) Completed 2022*    *BMedSc (Hons) Completed 2022*    *BMedSc (Hons) Completed 2022*    *BBiomedSc(Hons) Completed 2022*

## PhDs: Conferred

2012: Dr Helen Ackland; 2014: Dr Elizabeth Moore; 2015 Prof Daryl Jones, Dr Antoine Schneider; 2016: Dr Ralph Tramm; 2017: Dr Neil Glassford, Dr Nor'azim Mohd Yunos; 2018: Dr Rafidah Atan, Dr Tim Coulson, A/Prof Neil Orford, Dr Eldho Paul, Dr Emma Ridley; 2019: A/Prof Aidan Burrell, Dr Ravi Tiruvoipati; 2020: Dr Matt Brain, Dr Lisa Higgins, Dr Claire Tipping; 2021: Dr Bianca Levkovich, Dr Fumitaka Yanase

## Other Students: Completed

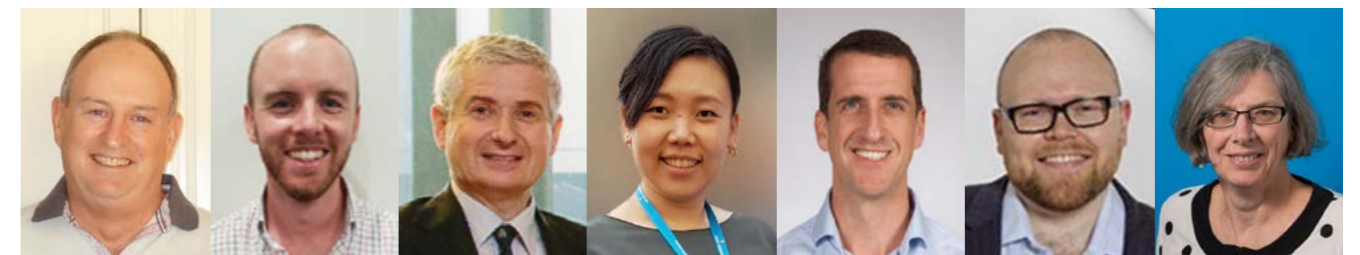
2012: Mr Simon Landes *BMedSc(Hons)*; 2014: Mr Edward Quine *BMedSc(Hons)*; 2015: Ms Madeline Cenedese *BHlthSc(Hons)*; 2016: Mr Zachary O'Brien *BMedSc(Hons)*, Mr Chun Sang Kwan *BBiomedSc(Hons)*; 2018: Mr Daniel Engeler *BBiomedSc(Hons)*; 2019: Mr Bentley Fulcher *BBiomedSc(Hons)*; 2021: Kate Wilcox *BMedSc(Hons)*



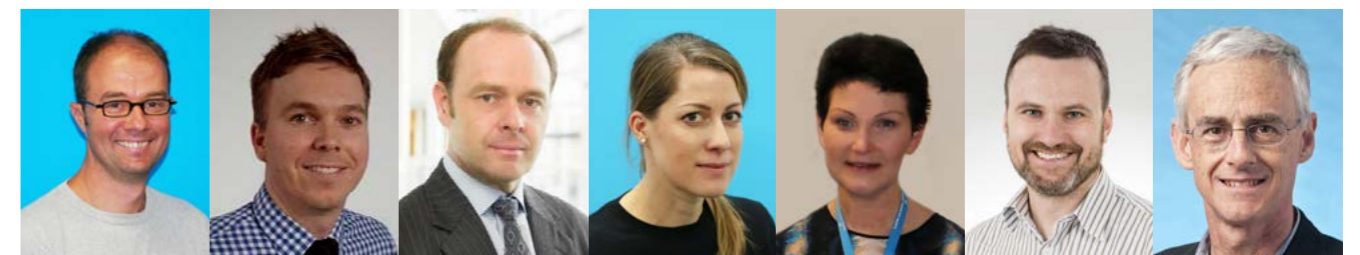
Prof Yaseen Arabi (Saudi Arabia)    Prof Cécile Aubron (France)    Prof Tracey Bucknall    A/Prof Aidan Burrell    A/Prof Hergen Buscher    Prof Gilles Capellier (France)    Prof Marianne Chapman



Dr Tim Coulson    A/Prof Andrew Davies    Dr Adam Deane    A/Prof Anthony Delaney    A/Prof Mark Dennis    Dr Arne Diehl    Prof Jacques Duranteau (France)



Dr Mark Finnis    Dr Andrew Flint    A/Prof Craig French    Dr Tomoko Fujii (Japan)    Dr Dashiell Gantner    Dr Neil Glassford    Ms Sue Huckson



Prof Olivier Huet (France)    Dr Josh Ihle    Prof Daryl Jones    Dr Nora Luethi (Switzerland)    Ms Lorraine Little    A/Prof Stephen Macdonald    Prof Colin McArthur (New Zealand)



Prof Christine McDonald    Dr Shay McGuinness (New Zealand)    Dr Katsunori Mochizuki (Japan)    Prof John Myburgh    Dr Vinodh Nanjaya    Dr Chris Nickson    Mr Zachary O'Brien

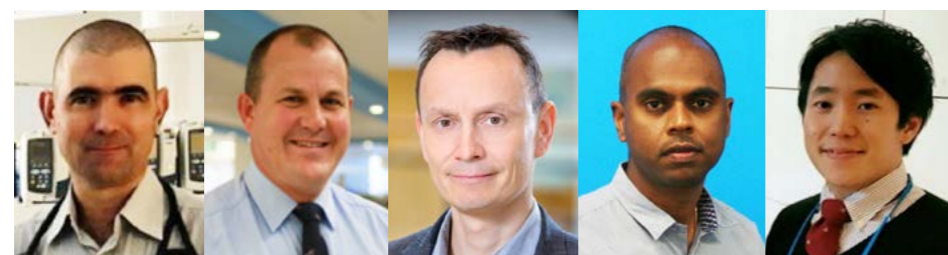
## ANZIC-RC Adjuncts (continued)



Dr Shuji Okahara (Japan)    A/Prof Neil Orford    A/Prof Rachael Parke (New Zealand)    Prof Sandra Peake    A/Prof Vincent Pellegrino



Prof David Pilcher    A/Prof Jeffrey Presneill    Prof Michael Reade    Prof Kathy Rowan (UK)    A/Prof Matthieu Schmidt (France)

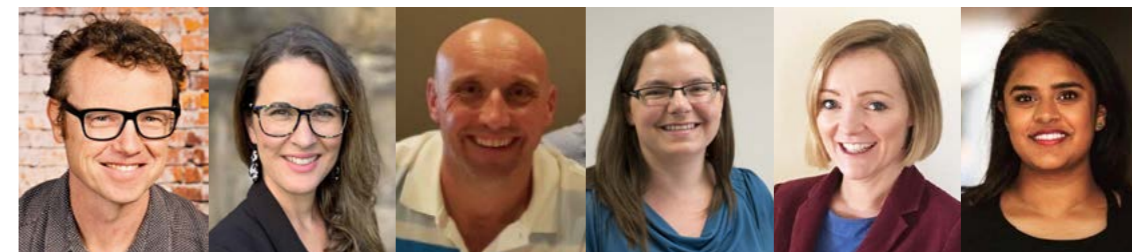


Dr Paul Secombe    Prof Ian Seppelt    Prof Markus Skrifvars (Finland)    Prof Ravi Tiruvoipati    Dr Ryo Ueno

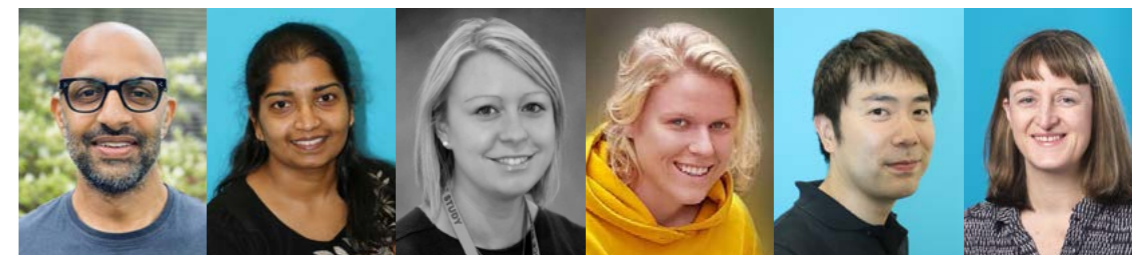


Ms Tricia Williams    Dr James Winearls    Prof Paul Young (New Zealand)

## ANZIC-RC Affiliates

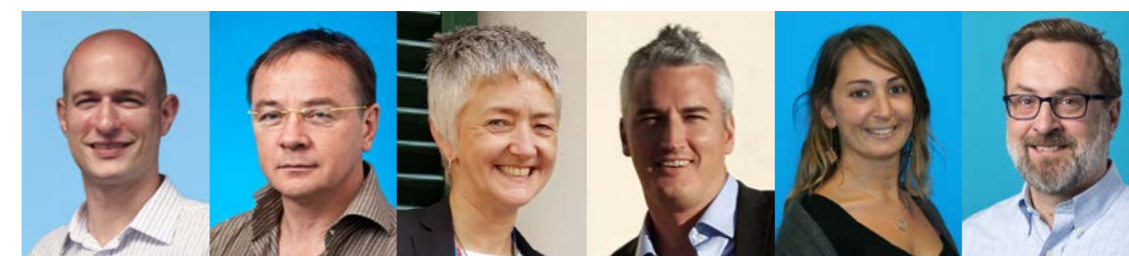


Prof Adrian Barnett    Dr Naomi Hammond    A/Prof Stuart Lane    Ms Kylie Lange    Ms Liadain Reid    Dr Praba Sekhar

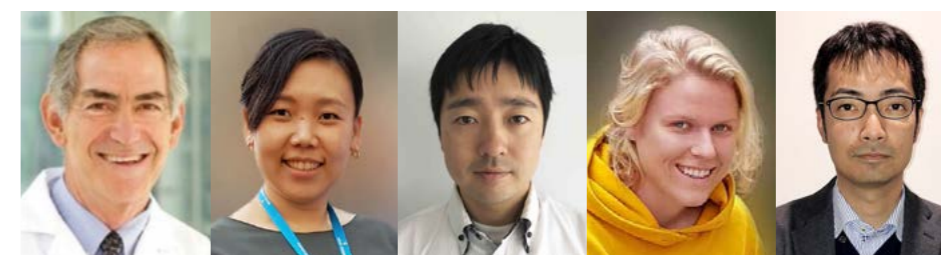


A/Prof Pratik Sinha    Ms Janani Sivasuthan    Ms Christina Whitehead    Ms Eveline Wiegers    Dr Fumitaka Yanase    Ms Meredith Young

## ANZIC-RC Visitors



Dr Guillaume Carteaux (France) 2010-1    Prof Gilles Capellier (France) 2011-2    Prof Kathy Rowan (UK) 2013 and 2015    A/Prof Matthieu Schmidt (France) 2013-4    Dr Aude Garnero (France) 2013-4    Prof Theodore (Jack) Iwashyna (USA) 2015



Prof Rob Sladen (USA) 2017    Dr Tomoko Fujii (Japan) 2018    Dr Shuji Okahara (Japan) 2019    Ms Eveline Wiegers (Netherlands) 2019    Dr Katsunori Mochizuki (Japan) 2019

# International Presentations

Month	Conference	Location	Name	Title	Role/s
Mar	41 <sup>st</sup> International Symposium on Intensive Care and Emergency Medicine	Brussels, Belgium	Bellomo R	1. Optimal ultrafiltration rate 2. Bicarbonate revisited 3. Fluid administration in the perioperative period How long do the effects of a fluid bolus last How to manage hyperammonemia 4. COVID in Australia 5. Megadose vitamin C in sepsis 6. Pronate or cannulate for COVID ARDS? 7. Natural language processing to monitor delirium Which analgesic agent for analgesation	Invited Presenter
Mar	START Ask the Scientist webinar, HRB-TMRN	Virtual	Nichol A	Meet the Doctor - Prof Alistair Nichol	Invited Presenter
Apr	7 <sup>th</sup> National Public and Patient Involvement in Research Conference	Dublin, Ireland	Nichol A	HRB Clinical Trial Networks and Public and Patient Involvement (PPI)	Invited Presenter
Apr	UCD SoM / MGA Clinical Influencers Podcast Series	Virtual	Nichol A	Clinical trial networks and international clinical trials in ICU	Invited Presenter
May	ANHI Enteral Nutrition Academy - Current Evidence for Achieving Best Practices for Enteral Nutrition	Virtual	Ridley E	Optimal nutrition therapy during and post-ICU	Invited Presenter
May	HRB-NCTO International Clinical Trials Day conference	Dublin, Ireland	Nichol A	International clinical trials in ICU	Invited Presenter
Jun	FRenesis Kabi Advanced Nutrition Course (FRANC) Asia - Elevating the Standards of Nutrition Therapy in 2022	Virtual	Ridley E	Practical implementation of nutrition therapy in ICU	Invited Presenter
Jun	Symposium on Intensive Care Medicine	Helsinki, Finland	Bellomo R	1. The future of trials in ICU 2. COVID in Australia 3. What I have learned form a lifetime of trials	Invited Presenter
Jun	Vicenza AKI/CRRT Course	Vicenza, Italy	Bellomo R	The rationale for extracorporeal therapies in sepsis	Invited Presenter
Jul	16th Alfred ICU Advanced Mechanical Ventilation Conference: ICU After COVID	Melbourne, Australia	Higgins L	Long-term outcomes and costs after mechanical ventilation	Invited Presenter
Jul	16th Alfred ICU Advanced Mechanical Ventilation Conference: ICU After COVID	Melbourne, Australia	Hodgson C	1. A Year in Review 2. Chair: Session 2	Co-Convenor, Session Chair, Presenter

# International Presentations (continued)

Month	Conference	Location	Name	Title	Role/s
Jul	16th Alfred ICU Advanced Mechanical Ventilation Conference: ICU After COVID	Melbourne, Australia	Pellegrino V	Can we personalise delivery of ECMO?	Invited Presenter
Jul	16th Alfred ICU Advanced Mechanical Ventilation Conference: ICU After COVID	Melbourne, Australia	Udy A	SPRINT-SARI – COVID in Australia	Invited Presenter
Aug	Asia Pacific Intensive Care Forum	Singapore (Virtual)	Burrell A	Update on ECCO2R in patients with acute respiratory failure	Invited Presenter
Sep	4 <sup>th</sup> International Symposium on Acute Kidney Injury in Children	Cincinnati, USA	Bellomo R	Daily-trauma in ICU	Plenary Lecturer (Keynote)
Oct	German Society of Neurosurgery Meeting	Leipzig, Germany	Udy A	Neurotrauma and Critical Care: PbtO2 Monitoring in Traumatic Brain Injury and BONANZA-GT.	Invited Presenter
Nov	Brazilian Conference of Intensive Care Medicine	Brasilia, Brazil	Serpa Neto A	1. Automated ventilation in ICU (Keynote) 2. Artificial intelligence in ICU (Presenter) 3. Advances in non-invasive ventilation (Moderator) 4. How I do: acute respiratory failure and mechanical ventilation (Presenter, Moderator)	Keynote Lecturer, Moderator, Invited Presenter
Nov	Critical Care Canada Forum	Toronto, Canada	Hodgson C	1. Adult Extracorporeal Support Rehabilitation on ECMO (with Fan E, et al) 2. CANCOV: Lessons Learned (Keynote Address with Herridge M, Needham D, Kho M) 3. Post-Intensive Care Syndrome: Pain, Fatigue and Survivors Perspective (with Needham D, Kho M, Herridge M, Summers C) 4. H Barrie Fairley Symposium - Hot off the Press: Latest Studies in Critical Care - Trial of Early Activity and Mobilization in ICU (The TEAM Trial) 5. ICU-Recovery and Rehabilitation: Early Rehabilitation on ECMO and the ECMO-Rehab Trial 6. H Barrie Fairley Symposium - Hot off the Press: Update in Critical Care Guidelines (Moderator with Ferguson N)	Keynote Presenter, Invited Presenter, Moderator
Nov	START Ask the Scientist webinar, HRB-TMRN	Virtual	Nichol A	Meet the Doctor - Prof Alistair Nichol	Invited Presenter
Dec	Charité Hospital Research Symposium	Berlin, Germany	Burrell A	Clinical research in ICU patients – hurdles and ways to overcome them?	Invited Presenter



# Australian and New Zealand Intensive Care Research Centre

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