

Research and Teaching Reports

A message from the Research Committee

The year 2021-22 has been a busy year in research for our Translational Research Advisory Committee (TRAC), Clinical Trials Sub-Committee (CTC) and Research Development and Engagement Sub-Committee (ReDE).

The main areas of focus for our research committees included:

- Developing a research development strategy for Calvary Mater Newcastle
- Consumer involvement in research
- Implementing the Australian Council on Health Care Standards National Clinical Trials Governance Framework
- NSW Health Clinical Trial Management Software (CTMS)

The knowledge base of the focus areas was further increased by attendance/participation of committee members and research staff members at the following:

- NSW RHP Embedded Economist Presentation/Workshop
- Health Consumer NSW workshop 'Consumer involvement in Health and Medical Research'
- 2022 ARCS Conference Sydney
- Medical Research Week

Achievements by the research committee's throughout the year included:

- The development and implementation of a suite of research documents and templates in consultation with the Calvary Legal team, such as: Material Transfer Agreement, Confidentiality Disclosure Agreement, and the Research Governance Office information pamphlet.
- The launch of the updated Calvary Mater Newcastle Research Website.
- The development of a Calvary Connect (intranet) Research Page to be used as a resource for researchers.
- A number of researchers participated in the formal Centenary celebratory luncheon where they took part in a conversation hosted by Dan Cox, Journalist from 1233 ABC Radio. The Mater's Centenary Celebrations provided the opportunity for our researchers to showcase the changes and challenges of medical research over the years. In particular, the advances in technology over this time period and how Calvary Mater Newcastle has now turned into a thriving hub of medical research and services from very humble beginnings.



Research Grants awarded

The hospital's Research Development and Engagement (ReDE) Committee was delighted to be able to offer grant opportunities in 2021-22 through the Coalfield Cancer Support Group Equipment Grant, Margaret Mitchell Grant, Oncology Research Grant and the HCRA Clinical Cancer Research Infrastructure Fund.

The funding recipients in 2021-22 were:

Coalfields Cancer Support Group Equipment Funding

- Fiona Scorgie and Associate Professor Lisa Lincz, Haematology – Essential Equipment for Haematology Cancer Research including computer and statistical software support together with a microplate swinging bucket rotor, a pH meter and a tilt and roll mixer, \$8,104.
- Madhu Garg and Kim Adler, Medical Oncology – Bio-specimen management system including QR coding and a labelling system suitable for ultra-cold storage, \$19,896.

HCRA Clinical Cancer Research Infrastructure

- Associate Professor Lisa Lincz, Haematology – Service contract for ongoing use of the BD Flow Cytometer, \$3,500.
- Dr Jayne Gilbert, Medical Oncology – Service and repair of the VIAFLO 384 electronic pipette and biological safety hoods, \$4,274.

Margaret Mitchell Grant

- Dr Jane Ludbrook, Dr Mahesh Kumar, Dr Girrish Mallesara and Associate Professor Shalini Vinod, Radiation Oncology and Medical Oncology, \$25,0000.
- Dr Jonathon Goodwin and Dr Jane Ludbrook, Radiation Oncology – Evaluation of isotropic 4D-MRI for lower lobe lung cancer treatment planning (Miracle II), \$25,000.

Oncology Research Grant

- Dr Jennette Sakoff and Dr Jayne Gilbert, Medical Oncology – Targeting the Aryl Hydrocarbon Receptor (AhR) for the treatment of pancreatic cancer, \$34,785.

The ReDE Committee would like to acknowledge and thank the assessors and review panel members for their time and commitment to providing expert scientific reviews and invaluable advice for funding distribution.

Department Research

DEPARTMENT OF CONSULTATION-LIAISON PSYCHIATRY

JOURNAL ARTICLES/PUBLICATIONS

- McKetin R., Dean OM, Turner A, Kelly PJ, Quinn B, Lubman DI, Dietze P, Carter G, Higgs P, Sinclair B, Reid D, Baker AL, Manning V, te Pas N, Thomas T, Bathish R, Raftery DK, Wrobel A, Saunders L, Arunogiri S, Cordaro F, Hill H, Hall S, Clare P, Mohebbi M, Berk M..
N-acetylcysteine (NAC) for methamphetamine dependence: A randomised controlled trial.
(*Eclinical Medicine* June 2021; <https://doi.org/10.1016/j.eclinm.2021.101005>. Vol 38, 101005, August 01, 2021)
- Bal VH, Leventhal BL, Carter G, Kim H, Koh YJ, Ha M, Kwon HJ, Hong P, Kim YS. Parent-Reported Suicidal Ideation in Three Population-Based Samples of School-Aged Korean Children With Autism Spectrum Disorder and Autism Spectrum Screening Questionnaire Screen Positivity. *Arch Suicide Res.* 2021 Nov 2:1-18. doi: 10.1080/13811118.2020.1868367. Epub ahead of print. PMID: 34724876; PMCID: PMC9058040.
- Dayle Raftery, Peter J. Kelly, Frank P. Deane, Gregory Carter, Olivia M. Dean, Dan I. Lubman, Alyna Turner, Rebecca McKetin
Cognitive insight, medication adherence and methamphetamine cessation in people enrolled in a pharmacotherapy trial for methamphetamine use.
(*Drug and Alcohol Dependence* 2021 Nov;130:108473; DOI: 10.1016/j.jsat.2021.108473)
- Carter, G., Sperandei, S., Chitty, K. M., & Page, A.
Antidepressant treatment trajectories and suicide attempt among Australians aged 45 years and older: A population study using individual prescription data.
(*Suicide and Life-Threatening Behavior*, 2022 Feb;52(1):121-131. doi: 10.1111/sltb.12812. Epub ahead of print. 2021 Oct 25. PMID: 34693551.)
- Zelalem F. Negeri, Brooke Levis, Ying Sun, Chen He, Ankur Krishnan, Yin Wu, Parash Mani Bhandari, Dipika Neupane, Eliana Brehaut, Andrea Benedetti, Brett D. Thombs and the Depression Screening Data (DEPRESSD) PHQ Group10.
Accuracy of the Patient Health Questionnaire-9 (PHQ-9) for Screening to Detect Major Depression: An Updated Systematic Review and Individual Participant Data Meta-analysis.
(*BMJ* 2021; 375 doi: <https://doi.org/10.1136/bmj.n2183> (Published 05 October 2021)
- Cite this as: *BMJ* 2021;375:n2183 *BMJ* August 2020)
- Stieler M, Pockney P, Campbell C, Vaisnavi Thirugnanasundralingam, Lachlan Gan, Matthew Spittal, Gregory Carter.
Using the Patient Health Questionnaire to estimate prevalence and gender differences of somatic symptoms and psychological co-morbidity in a secondary inpatient population with abdominal pain.
(*Australian & New Zealand Journal of Psychiatry.* September 2021. doi:10.1177/00048674211044639)
- McGill, Katherine; Whyte, Ian; Sawyer, Lisa; Adams, Danielle; Delamothe, Katrina; Lewin, Terry; Robinson, Jo; Kay-Lambkin, Frances; Carter, Gregory
Effectiveness of the Hunter Way Back Support Service: an historical controlled trial of a brief non-clinical after-care programme for hospital-treated Deliberate Self-Poisoning.
(accepted *Suicide and Life Threatening Behavior*, November 2021)
- Samantha Tang, Natalie Reily, Andrew Arena, Philip Batterham, Alison L Cleave, Gregory Carter, Andrew Mackinnon, Helen Christensen
People who die by suicide without receiving mental health services: A systematic review.
(*Frontiers in Public Health, section Public Mental Health* 18 January 2022, <https://doi.org/10.3389/fpubh.2021.736948>).
- Bandara, P; Page, A; Hammond, T; Sperandei, S; Stevens, G; Gunja, N; Anand, M; Jones, A; Carter, G.
Hospital-presenting intentional self-harm in Western Sydney, Australia: event rates, demographic and clinical characteristics during the period of implementation of a new self-harm reporting field.
(*CRISIS* 2022 Feb 9. doi: 10.1027/0227-5910/a000845. Epub ahead of print. PMID: 35138153.)
- Gale L, McGill K, Twaddell S, Lewin T, Whyte I, Carter G.
Hospital-treated deliberate self-poisoning patients: drug-induced delirium and clinical outcomes.
(*ANZJP* 2022;56(2):154-163. doi:10.1177/00048674211009608)
- McGill K, Spittal M, Bryant J, Lewin T, Whyte I, Madden C, Carter G.
Comparison of Accredited Person and Medical Officer discharge decisions under the Mental Health Act of NSW: a cohort study of deliberate self-poisoning patients.
(*ANZJP* 2022;56(2):178-185. doi:10.1177/00048674211009613)
- Mark Larsen, Natasha Josifovski; Fiona Shand; Kirsten Morley; Justin Chia; Richard Henshaw; Katherine Petrie; Bilal Reda; Emily Li; Adam Theobald; Sandersan Onie; Michelle Tye; Sofian Berrouiguet; Phillip J Batterham; Gregory Carter; Paul Haber; Helen Christensen
A pilot study of a text message and online brief contact intervention following self-harm or a suicide attempt: a mixed methods evaluation.
(accepted *General Hospital Psychiatry* March 2022)
- Stieler M, Pockney P, Campbell C, Thirugnanasundralingam V, Gan L, Spittal MJ, Carter G.
Somatic symptom severity associations with healthcare utilisation and costs in surgical inpatients with an episode of abdominal pain.
(accepted *BJS Open* March 2021)
- Seyed Kaveh Hadeiy; Narges Gholami; Rebecca McDonald; Omidvar Rezaei; Ali-Asghar Kolahi; Nasim Zamani; Alireza Shamsi-Lahijani; Firouzeh Noghrehchi; Gregory Carter; Hossein Hassanian-Moghaddam
Trends in hospital-treated intentional self-poisoning events in Tehran before and during the COVID-19 epidemic.
(*Current Psychology* (2022). <https://doi.org/10.1007/s12144-022-03248-y>, May 2022).
- Kerrie Clover; Sylvie D. Lambert; Christopher Oldmeadow; Benjamin Britton; Alex J Mitchell; Gregory Carter; Madeleine King
Convergent and criterion validity of PROMIS anxiety measures relative to six legacy measures and a structured diagnostic interview for anxiety in cancer patients.
(accepted *Journal of Patient-Reported Outcomes* May 2022).
- Kristen McCarter, Amanda L. Baker, Luke Wolfenden, Chris Wratten, Judith Bauer, Alison K. Beck, Erin Forbes, Gregory Carter, Lucy Leigh, Christopher Oldmeadow, Ben Britton
Smoking and other health factors in patients with head and neck cancer.
(accepted *Cancer Epidemiology* June 2022).
- Chitty, Kate; Cvejic, Rachael; Heintze, Theresa; Srasuebkul, Preeyaporn; Morley, Kirsten; Dawson, Andrew; Carter, Gregory; Dinh, Michael; Buckley, Nicholas; Trollor, Julian
The association between problematic use of alcohol and drugs on repeat self-harm and suicidal ideation: insights from a population-based administrative health dataset.
(accepted *The Journal of Crisis Intervention and Suicide Prevention* July 2021)
- McGill, K., Bhullar, N., Pearce, T., Batterham, P.J., Wayland, S. and Maple, M., 2022.

Effectiveness of Brief Contact Interventions for Bereavement: A Systematic Review. *OMEGA-Journal of Death and Dying*, p.00302228221108289. <https://doi.org/10.1177/00302228221108289>

19. Heard, T.R., McGill, K., Skehan, J. and Rose, B., 2022. The ripple effect, silence and powerlessness: hidden barriers to discussing suicide in Australian Aboriginal communities. *BMC psychology*, 10(1), 1-14. <https://doi.org/10.1186/s40359-022-00724-9>
20. Zbukvic, I., Rheinberger, D., Rosebrock, H., Lim, J., McGillivray, L., Mok, K., Stamate, E., McGill, K., Shand, F. and Moullin, J.C., 2022. Developing a tailored implementation action plan for a suicide prevention clinical intervention in an Australian mental health service: A qualitative study using the EPIS framework. *Implementation Research and Practice*, 3, p.26334895211065786. <https://doi.org/10.1177/26334895211065786>
21. McGill, K., Bhullar, N., Batterham, P., Carrandi, A., Wayland, S. & Maple, M. (accepted). Key issues, challenges and preferred supports for those bereaved by suicide: Insights from postvention experts. *Death Studies*.

CONFERENCE PROCEEDINGS/PUBLICATIONS

1. Berling I., Whyte IM, Carter G, Cutten A, McGill K
Cardiac arrhythmia deaths associated with inpatient psychiatric admission and antipsychotic medication.
Clinical Toxicology. TAYLOR & FRANCIS LTD. 58: 546 (1 page). 02 Jun 2020
2. Forbes, E., Clover, K., Baker, A., McCarter, K., Oultram, S., Wratten, C., ... & Britton, B. (2021, October). Biofeedback Enabled CALM (BECALM): Trialling the use of biofeedback to reduce anxiety during radiotherapy treatment: A pilot randomised controlled trial. In *ASIA-PACIFIC JOURNAL OF CLINICAL ONCOLOGY* (Vol. 17, pp. 16-17)
3. Clover, K., Lambert, S. D., Oldmeadow, C., Britton, B., King, M. T., Mitchell, A. J., & Carter, G. (2021, October). Convergent and criterion validity of PROMIS depression and anxiety measures, relative to established measures and structured diagnostic interview, for people with cancer. In *ASIA-PACIFIC JOURNAL OF CLINICAL ONCOLOGY* (Vol. 17, pp. 18-19)

CONFERENCE POSTERS

1. Rates of Procedural Anxiety during Radiotherapy using a Mask In Patients with Head and Neck Cancer.
Forbes, E., Clover, K., Carter, G., Wratten, C., Britton, B., Tieu, M., Kumar, M., Oultram, S., Baker, A., McCarter, e-poster. Psycho-oncology Co-operative Research Group (PoCoG) Scientific Meeting, December 2021
2. Rates Of Procedural Anxiety During Radiotherapy And Next Steps.

Forbes E., Clover K, Baker AL, McCarter K, Carter G, Wratten C, Tieu MT, Kumar M, Oultram S, Nixon J, Britton B.

Australian Association for Cognitive and Behaviour Therapy (AACBT). October 2022.

3. Study protocol: Biofeedback Enabled CALM (BECALM): *Trialling the use of biofeedback to reduce anxiety during radiotherapy treatment - a pilot randomised controlled trial*. E-poster (5 minute presentation): Forbes, E., Clover, K., Baker, A., McCarter, K., Oultram, S., Wratten, C., Kumar, M., Tieu, M., Nixon, J., Britton, Psycho-oncology Co-operative Research Group (PoCoG) Scientific Meeting (Dec 2021)
4. *Biofeedback Enabled CALM (BECALM): Trialling the use of biofeedback to reduce anxiety during radiotherapy treatment - a pilot randomised controlled trial* Rapid fire presentation:
Forbes, E., Clover, K., Baker, A., McCarter, K., Oultram, S., Wratten, C., Kumar, M., Tieu, M., Nixon, J., Britton, B. Hunter Cancer Research Symposium, Newcastle, Australia (Nov 2021)

RESEARCH FUNDING/GRANTS

1. 2019 Australian Government Department of Health
National Leadership in Suicide Prevention Research Project
Pirkis J, Robinson J, Reifels L, Bassilios B, Spittal M, Reavley N, Gunn J, **Carter G**, Lubman D, Milner A, Kolves K, Krysinska K, Phelps A, Sutherland G, Grant L, Minas H. \$1,200,000 over three years (2019-2021).
2. 2020 Australian Government Department of Health, MRFF Million Minds Mission Suicide Prevention - APP1200195
Developing a Comprehensive Care Pathway For those at Risk of Suicide But Not in Care: The Under the Radar Project.
CIs: Helen Christensen, Samuel Harvey, **Gregory Carter**, Svetha Venkatesh, Katherine Boydell, Henry Cutler, Ian Kneebone, Toby Newton-John, Jin Han, Kit Huckvale.
\$3.7M over 5 years (2020-2024)
3. 2022 National Suicide Prevention Leadership and Support Program Grant APP 9CA84M4
LIFEWAYS - Translating suicide prevention research into policy and practice
Pirkis, J. Reifels, L. Currier, D. Andriessen, K. Krysinska, K. Robinson, J. Phelps, A. Francis, J. Eades, S. Shand, F. Tye, M. Larsen, M. Kolves, K. **Carter, G.** Neil, A. Skehan, J. Diminic, S. Edwards, B.
\$2,601,201 over three years (2022-2024).

CLINICAL TRIALS

- Biofeedback Enabled Calm (BE Calm): trialling the use of a pulse rate biofeedback

device to reduce anxiety during radiotherapy treatment- a pilot randomised controlled trial

Forbes E, Britton B, Clover K, Baker A, McCarter, K, Oultram S, Kumar M, Wratten C, Tieu M, Nixon J.

- N-acetylcysteine (NAC) for methamphetamine dependence: A randomised controlled trial
McKetin R., Dean OM, Turner A, Kelly PJ, Quinn B, Lubman DI, Dietze P, Carter G, Higgs P, Sinclair B, Reid D, Baker AL, Manning V, te Pas N, Thomas T, Bathish R, Raftery DK, Wrobel A, Saunders L, Arunogiri S, Cordaro F, Hill H, Hall S, Clare P, Mohebbi M, Berk M.
- Efficacy and Safety of Repeated Subcutaneous Ketamine Injections for Treatment Resistant Depression – The KADS Study: A Randomised, Double-Blind, Comparator-Controlled Trial
Colleen Loo, Nick Glozier, et al.

OTHER RELEVANT MATERIAL (MILESTONES, ACHIEVEMENTS, ETC.)

PHD STUDENTS

1. Alison Beck, PhD Candidate, School of Medicine and Public Health, Faculty of Health and Medicine. Translating Motivational Interviewing and Behaviour Change Techniques into Dietetic Interventions.
(2018-2022) Primary Supervisor Professor Amanda Baker, Co-supervisor Ben Britton and G Carter.
Passed June 2022.
2. Dr Katherine McGill, PhD Candidate, School of Medicine and Public Health, Faculty of Health and Medicine, University of Newcastle.
Using Sentinel Unit Data to Inform Clinical Practice for Hospital-Presenting Deliberate Self-Harm.
Principal Supervisor: Professor Frances Kay-Lambkin Co-Supervisors: Gregory Carter, Jo Robinson
3. Dr Melissa Stieler, PhD (Surgical Science) Candidate, School of Medicine and Public Health, Faculty of Health and Medicine, University of Newcastle.
Somatic Symptom severity and Undifferentiated Abdominal Pain; Prevalence, Diagnostic Accuracy and Comorbidity.
Principal Supervisor: Dr Peter Pockney, Co-Supervisor: Gregory Carter (15 July 2019) 8 years (part-time)
4. Cynthia Coombe PhD Candidate University of Newcastle.
Informing practice through a better understanding of Aboriginal/Torres Strait Islander people, hospital-treated for self-harm within the Hunter Region of NSW.

Principal Supervisor: Greg Carter. Co-supervisors: Rhonda Wilson and Frances Kay-Lambkin

5. Erin Forbes PhD Candidate, School of Medicine and Public Health, Faculty of Health and Medicine, University of Newcastle.

Innovative Interventions to Address Procedure Related Anxiety in Patients Undergoing Radiotherapy.

Principal Supervisor: Amanda Baker, Co-Supervisors: Dr Ben Britton, Dr Kristen McCarter & Associate Prof Kerrie Clover

AWARDS

- **Kerrie Clover** - Psychology Researcher of the Year- HNELHD (Nov 2021)
- **Katie McGill** - Psychologist of the Year - HNELHD (Nov 2021)
- **Katie McGill** - Allied Health Researcher of the Year- HNELHD (Sept 2021)
- **Katie McGill** - Deeble Health Policy Research Scholarship - Australian Healthcare & Hospitals Association (February 2022)

PHD STUDENT AWARDS

Alison Beck

- University of Newcastle School of Medicine & Public Health - Publication of the Year
- Population & Public Health - Joint Winner
- Alison Beck - PhD (Psychiatry)
- Beck, A.K., Baker, A.L., Carter, G. et al. Is fidelity to a complex behaviour change intervention associated with patient outcomes? Exploring the relationship between dietitian adherence and competence and the nutritional status of intervention patients in a successful stepped-wedge randomised clinical trial of eating as treatment (EAT). *Implementation Sci* 16, 46 (2021). <https://doi.org/10.1186/s13012-021-01118-y>

Erin Forbes

- Psycho-oncology Co-operative Research Group (PoCoG) Scientific Meeting (2021)
- Best e-poster (5 minute presentation)
- Forbes, E., Clover, K., Carter, G., Wratten, C., Britton, B., Tieu, M., Kumar, M., Oultram, S., Baker, A., McCarter, e-poster. Rates of Procedural Anxiety during Radiotherapy using a Mask in Patients with Head and Neck Cancer
- Psycho-oncology Co-operative Research Group (PoCoG) Scientific Meeting, December 2021

Katie McGill

- International Association for Suicide Prevention- 10th Asia Pacific (IASP) conference
- Best 'Lightning Talk': The role and value of clinical case registers for hospital-treated self-harm in improving patient care.

Cynthia Coombe

- International Association for Suicide Prevention - 10th Asia Pacific (IASP) conference
- Peoples' choice award: Biroon Wollun: 'To Break Head'

Haematology

OVERVIEW

The Haematology Unit engages in both clinical and laboratory-based research. Clinicians and nurses are actively involved in research directed at improving patient care, while the department also supports dedicated laboratory and clinical trials teams. The Staff Specialists are committed to providing quality training to haematology registrars. Many of the staff hold conjoint appointments with the University of Newcastle and engage in teaching undergraduate medical students and supervising higher research degrees. The Unit is fortunate to have strong community support and is grateful for all the generous donations received in 2021-22. The ongoing COVID-19 pandemic continues to provide challenges for staff and students.

HAEMATOLOGY CLINICAL TRIALS

- **Unit Manager:** Michele Gambrelli
- **Clinical Trial Coordinators:** Cheryl Cairney, Joanne Smart, Katie Oleksyn, Klara Jakimovski, Leanne DeGroot, Margo Hughes, Nick Stankovich, Nicole Reid, Tara Novak, Tina Millett
- **Data Managers:** Natasha Winters, Afrin Farjana
- **Systems Manager:** Alesia Ogradnik
- **Administrative/Finance Officers:** Patricia Rozanski, Karen Kincaid, Fiona Lunsmann, Maree Jarrett
- **Laboratory Technical Officers:** Kylie Cox, Bryn Rollinson
- **Clinical Trial Lead Staff Specialist:** Wojt Janowski

BONE MARROW STEM CELL TRANSPLANT RESEARCH

Philip Rowlings, Sam Yuen, Louisa Brown, Hong Zhang, Linda Welschinger, Geordie Zauanders

Patient transplant data is reported to the Australian Bone Marrow Transplant Recipients Registry (ABMTRR) as part of Australian Bone Marrow Transplant (BMT) research and development. This data is also part of the Asia Pacific Bone Marrow Transplant (APBMT) research group. The CMN Unit is the lead site on the ethics application for data collection of the NSW BMT Network, a subgroup of the Agency for Clinical Innovation (ACI) of the Clinical Excellence Commission (CEC), of the NSW Ministry of Health.

VENOUS THROMBOEMBOLISM AND

TRANSFUSION RESEARCH

Dr Ritam Prasad, Dr Kate Melville, Dr Jillian De Malmanche, and Dr Anoop Enjeti

Practise changing audits and interventions have been important contributions in these areas with Dr Anoop Enjeti as Chair of Area Transfusion Committee and Dr Melville as chair of the area venous thromboembolism (VTE) committee. Dr Melville is also involved in Obstetric Haematology.

LABORATORY RESEARCH - THE HUNTER HAEMATOLOGY RESEARCH GROUP

Lisa Lincz, Fiona Scorgie, Anoop Enjeti, Ritam Prasad

The Haematology Research Laboratory conducts studies into haematological cancers and disorders of coagulation. The laboratory is linked to the University of Newcastle and offers training to registrars and students.

As always, the group maintains strong collaborations with researchers nationally and internationally through memberships with various societies: Australasian Leukaemia & Lymphoma Group (ALLG), Thrombosis and Haemostasis society of Australia and New Zealand (THANZ), International Society on Thrombosis and Haemostasis (ISTH); Berlin-Bernhard-Münster Paediatric Acute Lymphoblastic Leukaemia (BFM-ALL); as well as through individual collaborations with researchers at Royal North Shore Hospital and the Children's Cancer Institute, Randwick; and locally with the departments of Neurology (JHH), Molecular Medicine (NSW Health Pathology - JHH), Medical Oncology (CMN), Hunter Medical Research Institute, and the School of Biomedical Sciences and Pharmacy (University of Newcastle).

Clinical and laboratory researchers from the Haematology Unit make up a large proportion of the Blood Cancer component within the newly announced Precision Medicine Research Program within the Hunter Medical Research Institute. This program forms connections between basic medical research and patient-centred intervention studies with the ultimate aim of identifying the most appropriate treatments for individual patients by deciphering the characteristics of complex diseases – providing the right treatment for each patient at the right time.

RESEARCH HIGHER DEGREES

Characterising a new potential regulator of AML cell invasion. D Theron (BSc. Hons 2022) Supervisors: K Skelding and L Lincz

UNDERGRADUATE MEDICAL STUDENT PROJECTS (UNIVERSITY OF NEWCASTLE)

Can we be certain about uncertainty? E Johnston, N Walker, N Mansell, O Fahey. Supervisors: A Enjeti, D Mossman, L Lincz.

RESEARCH FUNDING

Precision Medicine program-2021 HMRI MRSP-Cancer Program \$286,439.00

Cracking the Code: The launch of a genomic, epigenetic and proteomic pre-clinical platform to improve the treatment of paediatric leukaemias \$122,000.00.

CONFERENCE AND MEETING PROCEEDINGS (including results of clinical trials in which CMN haematology patients were participants)

1. American Society of Hematology 2021

Indran, T., M. Swain, J. Widjaja, F. Yuen, H. Quach, **W. Janowski**, A. Hutchinson, C.T. Wallington-Beddoe, J. Estell, I.H. Kerridge, and A. Spencer, *The Effect of Daratumumab, Lenalidomide, Dexamethasone (DRd) on Peripheral Blood Stem Cell Mobilisation (PBSC)*. Blood, 2021. **138**(Supplement 1): p. 3884-.DOI: 10.1182/blood-2021-150444.

Lim, S.-I., J. Reynolds, H. Quach, A. Hutchinson, I.H. Kerridge, J. Estell, **W. Janowski**, C.T. Wallington-Beddoe, A. Kalf, F. Yuen, and A. Spencer, *Preliminary Analysis of the MM21 Trial: Response Adaptive Salvage Treatment with Daratumumab-Lenalidomide-Dexamethasone (DRd) for Newly Diagnosed Transplant Eligible Multiple Myeloma Patients Failing Front-Line Bortezomib-Based Induction Therapy*. Blood, 2021. **138**(Supplement 1): p. 1665-.DOI: 10.1182/blood-2021-152102.

Mollee, P., J. Reynolds, **W. Janowski**, H. Quach, P. Campbell, S.D. Gibbs, S. Lee, J. D'Rozario, K. Taylor, T. Cochrane, C.T. Wallington-Beddoe, F. Kwok, N. Weber, I.H. Kerridge, H. Weston, P.J. Ho, N. Horvath, F.

Yuen, and A. Spencer, *A Randomized Study of Bortezomib, Cyclophosphamide and Dexamethasone Induction (VCD) Versus VCD and Daratumumab Induction Followed By Daratumumab Maintenance (VCDD) for the Initial Treatment of Transplant-Ineligible Patients with Multiple Myeloma* (AMaRC 03-16). Blood, 2021. **138**(Supplement 1): p. 2728-.DOI: 10.1182/blood-2021-152500.

Ninkovic, S., N.E. Murphy, H. Sidiqi, C.T. Wallington-Beddoe, A. Puliyaail, C.K. Yannakou, **W. Janowski**, F. Yuen, A. Spencer, and H. Quach, *Isatuximab Rescue for Inadequate Response to Lenalidomide and Dexamethasone in Transplant Ineligible Patients with Newly Diagnosed Multiple Myeloma: Interim Analysis of the Phase II Iril Study of the Australian Myeloma Research Consortium (AMaRC 18-02)*. Blood, 2021. **138**(Supplement 1): p. 1671-.DOI: 10.1182/blood-2021-151871.

Usmani, S.Z., A. Alonso Alonso, H. Quach, Y. Koh, A. Guenther, C.-K. Min, X.L. Zhou, M. Kaisermann, L.M. Mis, D. Williams, A. Yeakey, G. Ferron-Brady, D.J. Figueroa, B.E. Kremer, I. Gupta, and **W. Janowski**, *DREAMM-9: Phase I Study of Belantamab Mafodotin Plus Standard of Care in Patients with Transplant-Ineligible Newly Diagnosed Multiple Myeloma*. Blood, 2021. **138**(Supplement 1): p. 2738-.DOI: 10.1182/blood-2021-153315.

2. European Hematology Association 2022

Lasica, M., A. Spencer, P. Campbell, C. Wallington-Gates, N. Wong Doo, **W.**

Janowski, G. McCaughan, A. Puliyaail, F. Yuen, K. Le, J. Reynolds, and H. Quach, *P946: a phase I/II single arm study of belantamab mafodotin, carfilzomib and dexamethasone in patients with relapsed multiple myeloma: AMaRC 19-02 Belcard study*. HemaSphere, 2022. **6**: p. 836-7.DOI: 10.1097/01.HS9.0000846652.51254.ac.

Yeung, D., A. Grigg, N. Shanmuganathan, A. Soltenbeck, D. White, S. Branford, N. Viiala, **P. Rowlings**, A. Mills, J. Shortt, C. Tiley, D. Ross, D. Kipp, R. Harrup, I. Cunningham, J. Kwan, R. Eek, H. Mutsando, K.S. Tan, K. Burbury, M. Wright, and T. Hughes, *P720: Proactive dasatinib dose reduction in the ALLG CML 12 direct study based on trough levels minimise toxicity and preserve efficacy*. HemaSphere, 2022. **6**: p. 615-6. DOI:10.1097/01.HS9.0000845764.61186.15.

3. Blood 2021, Adelaide & Virtual, Australia.

Welschinger L, Milton C, Zauanders G, Yuen S. (20-23 Sept. 2021). *Plerixafor in autologous collection: What time is now?* [Poster presentation].

Wojt Janowski, Peter Mollee, John Reynolds, Hang Quach, Philip Campbell, Simon Gibbs, Sophie Lee, James D'Rozario, Kerry Taylor, Tara Cochrane, Craig Wallington-Beddoe, Fiona Kwok, Nicholas Weber, Ian Kerridge, Helen Weston, P Joy Ho, Noemi Horvath, Flora Yuen, Andrew Spencer. *A randomised study of daratumumab, bortezomib, cyclophosphamide and dexamethasone*



induction with daratumumab until progression (VCDD) versus VCD induction alone for the initial treatment of transplant-ineligible patients with multiple myeloma (AMaRC03-16)

Jock Simpson, Cathie Milton, Karan

Makhija, Wojt Janowski. A retrospective audit of early discharge (day +1) following autologous stem cell transplantation

5. Australian Society for Medical Research Hunter Region Satellite Scientific Meeting 2022

Danielle Theron, Daniel Barry, **Anoop Enjeti, Jonathan Sillar, Lisa Lincz**, Kathryn Skelding. Increased ENO1 mRNA expression is a potential negative prognostic biomarker of AML patient survival.

ADVISORY/BOARD MEMBERSHIP

Sam Yuen Executive Committee, NSW BMT Network of the Agency for Clinical Innovation, NSW Health

Philip Rowlings

- Editorial Board of the Journal Blood Cell Therapy
- Board of Directors, Australia Leukaemia and Lymphoma Group
- Emeritus Member, Asia Pacific Blood and Marrow Transplant Group

Anoop Enjeti

- Co-chair, Acute Leukaemia working party, ALLG
- Chair, MDS Working Group, ALLG
- Chief Examiner Haematology Royal College of Pathologists of Australasia (RCPA) and on the Board of Examination and Assessment (RCPA)
- Executive member RACP/RCPA Combined Joint College Training Program
- Executive member Precision Medicine Program HMRI and UoN
- Member, Evidence based Guidelines (EviQ) Committee, NSW Cancer Institute (NSW CI)
- Member, NSW Haematology Teaching Committee

Ritam Prasad

- Member, Australian Haemophilia Centre Directors organisation Executive Committee

Wojt Janowski

- Member, ALLG Myeloma Subcommittee
- Deputy Chair, CCRN Steering Committee
- Member, HCRA Clinical Trials Strategic Planning Committee
- Member, Australasian Myeloma Research Consortium Steering Committee
- Member, eVIQ Haematology Reference Group

Lisa Lincz

- Member, CMN Translational Research Advisory Committee
- Member, CMN Research Development and Engagement Committee

Fiona Scorgie

- Chairperson, CMN Occupational Health & Safety Committee

- Member, CMN Mission and Values Committee

Linda Welschinger

- CCS, Blood & Marrow Transplant Laboratory
- Member, ACI BMT Laboratory Working Group

Geordie Zauzers

- Laboratory Manager, Blood & Marrow Transplant Laboratory
- Member, ACI BMT Laboratory Working Group

PUBLICATIONS

1. Brice, L., N. Gilroy, G. Dyer, M. Kabir, M. Greenwood, S. Larsen, J. Moore, D. Gottlieb, M. Hertzberg, **L. Brown**, M. Hogg, G. Huang, C. Ward, and I. Kerridge, *Predictors of quality of life in allogeneic hematopoietic stem cell transplantation survivors.* J Psychosoc Oncol, 2021. **39**(4): p. 534-52. DOI: 10.1080/07347332.2020.1870644.
2. Choi, P.Y., D. Hsu, H.A. Tran, C.W. Tan, **A. Enjeti**, V.M.Y. Chen, B.H. Chong, J. Curnow, D. Pepperell, and R. Bird, *Immune thrombocytopenia following vaccination during the COVID-19 pandemic.* Haematologica, 2022. **107**(5): p. 1193-6. DOI: 10.3324/haematol.2021.279442.
3. Choi, P.Y., E. Merriman, A. Bennett, **A.K. Enjeti**, C.W. Tan, I. Goncalves, D. Hsu, and R. Bird, *Consensus guidelines for the management of adult immune thrombocytopenia in Australia and New Zealand.* Med J Aust, 2022. **216**(1): p. 43-52. DOI: 10.5694/mja2.51284.
4. **Enjeti, A.K.**, R. Agarwal, P. Blombery, L. Chee, C.C. Chua, A. Grigg, N. Hamad, H. Iland, S. Lane, A. Perkins, D. Singhal, C. Tate, I.S. Tiong, and D.M. Ross, *Panel-based gene testing in myelodysplastic/myeloproliferative neoplasm overlap syndromes: Australasian Leukaemia and Lymphoma Group (ALLG) consensus statement.* Pathology, 2022. **54**(4): p. 389-98. DOI: 10.1016/j.pathol.2022.03.002.
5. Hunt, K.V., S.M. Burnard, E.A. Roper, D.R. Bond, M.D. Dun, N.M. Verrills, **A.K. Enjeti**, and H.J. Lee, *scTEM-seq: Single-cell analysis of transposable element methylation to link global epigenetic heterogeneity with transcriptional programs.* Sci Rep, 2022. **12**(1): p. 5776. DOI: 10.1038/s41598-022-09765-x.
6. Ito, T., D. Sanford, C. Tomuleasa, H.H. Hsiao, L.J.E. Olivera, **A.K. Enjeti**, A.G. Conca, T.B. Del Castillo, L. Girshova, M.P. Martelli, B. Guvenc, C.N. Bui, A. Delgado, Y. Duan, B.G. Guijarro, C. Llamas, and J.H. Lee, *Healthcare resource utilization trends in patients with acute myeloid leukemia ineligible for intensive chemotherapy receiving first-line systemic treatment or best supportive care: A multicenter international study.* Eur J Haematol, 2022. **109**(1): p. 58-68. DOI: 10.1111/ejh.13769.

7. Lau, C.L., H.J. Mayfield, J.E. Sinclair, S.J. Brown, M. Waller, **A.K. Enjeti**, A. Baird, K.R. Short, K. Mengersen, and J. Litt, *Risk-benefit analysis of the AstraZeneca COVID-19 vaccine in Australia using a Bayesian network modelling framework.* Vaccine, 2021. **39**(51): p. 7429-40. DOI: 10.1016/j.vaccine.2021.10.079.
8. Mannan, A., Z.P. Germon, J. Chamberlain, **J.R. Sillar**, B. Nixon, and M.D. Dun, *Reactive Oxygen Species in Acute Lymphoblastic Leukaemia: Reducing Radicals to Refine Responses.* Antioxidants (Basel), 2021. **10**(10). DOI: 10.3390/antiox10101616.
9. McErlean, G., L. Brice, N. Gilroy, M. Kabir, M. Greenwood, S.R. Larsen, J. Moore, D. Gottlieb, M. Hertzberg, **L. Brown**, M. Hogg, G. Huang, C. Ward, and I. Kerridge, *Long-term treatment burden following allogeneic blood and marrow transplantation in NSW, Australia: a cross-sectional survey.* J Cancer Surviv, 2022. **16**(2): p. 432-44. DOI: 10.1007/s11764-021-01038-2.
10. Miyamoto, T., D. Sanford, C. Tomuleasa, H.H. Hsiao, L.J.E. Olivera, **A.K. Enjeti**, A. Gimenez Conca, T.B.D. Castillo, L. Girshova, M.P. Martelli, B. Guvenc, A. Delgado, Y. Duan, B. Garbayo Guijarro, C. Llamas, and J.H. Lee, *Real-world treatment patterns and clinical outcomes in patients with AML unfit for first-line intensive chemotherapy().* Leuk Lymphoma, 2022. **63**(4): p. 928-38. DOI: 10.1080/10428194.2021.2002321.
11. Savage, K.J., S.M. Horwitz, R. Advani, J.H. Christensen, E. Domingo-Domenech, G. Rossi, F. Morschhauser, O. Alpdogan, C. Suh, K. Tobinai, A. Shustov, M. Trneny, **S.L.S. Yuen**, P.L. Zinzani, L.H. Truemper, T.M. Illidge, O.A. O'Connor, B. Pro, H. Miao, V. Bunn, K. Fenton, M. Fanale, M. Puhlmann, and S.P. Iyer, *Role of Stem Cell Transplant in CD30-positive PTCL following Frontline Brentuximab Vedotin+CHP or CHOP in ECHELON-2.* Blood Adv, 2022. DOI: 10.1182/bloodadvances.2020003971.
12. Silva, A., **F.E. Scorgie**, **L.F. Lincz**, K. Maduwage, S. Siribaddana, and G.K. Isbister, *Indian Polyvalent Antivenom Accelerates Recovery From Venom-Induced Consumption Coagulopathy (VICC) in Sri Lankan Russell's Viper (Daboia russelii) Envenoming.* Front Med (Lausanne), 2022. **9**: p. 852651. DOI: 10.3389/fmed.2022.852651.
13. Skelding, K.A., D.L. Barry, D.Z. Theron, and **L.F. Lincz**, *Targeting the two-pore channel 2 in cancer progression and metastasis. Exploration of Targeted Anti-tumor Therapy.* 2022. 3(1): p. 62-89. DOI: 10.37349/etat.2022.00072.
14. Skelding, K.A. and **L.F. Lincz**, *PARP Inhibitors and Haematological Malignancies-Friend or Foe? Cancers (Basel), 2021. 13(21). DOI: 10.3390/cancers13215328.*

15. **Welschinger, L., C. Milton, G. Zaunders,** and **A. Ashraf.** *Effect of nucleated cell count and cryopreservation on engraftment post autologous stem cell transplant.* *Transfus Apher Sci*, 2022: p. 103495. DOI: 10.1016/j.transci.2022.103495.

16. Younes, A., J.M. Burke, C.S. Diefenbach, S. Ferrari, C. Khan, J.P. Sharman, M. Tani, C. Ujjani, U. Vitolo, **S.L.S. Yuen**, A. Raval, M. Shivhare, T.G. Nielsen, G. Sellam, and M. Gilbertson, *Safety and efficacy of atezolizumab with obinutuzumab and bendamustine in previously untreated follicular lymphoma.* *Blood Adv*, 2022. DOI: 10.1182/bloodadvances.2021006131.

MEDICAL ONCOLOGY RESEARCH (MOR)

MOR TRIALS:

- **Investigators:** Dr Howard Chan, Dr Fiona Day, A/Prof Craig Gedye, Dr Janine Lombard, Dr James Lynam, Dr Girish Mallesara, Dr Hiren Mandaliya, Dr Ina Nordman, Dr Tin Quah and Dr Andre van der Westhuizen
- **Clinical Trial Fellow:** Dr Sarah Zardawi
- **Clinical Trial Manager:** Kim Adler
- **Senior Clinical Trial Coordinators:** Kerrie Cornall, Jennifer McFarlane and Gail Walker
- **Clinical Trial Coordinators:** Kirrilee Askew, Rebecca Aitken, Kelly Barker, Bronwyn Crawford, Saba Kugashiya, Caitlyn McHugh, Emily Munn and Megan Walker
- **Finance Coordinator:** Alison Leonard-England

- **Ethics Coordinator:** Allison Kautto
- **Systems Coordinator:** Anthony Morrison
- **Senior Data Manager:** Jessica Aldcroft
- **Data Managers:** Nicole Hingerty, Jaishree Jalewa, Jye Lobasso, Bridgette Donati and Deepika Radhakrishnan
- **Laboratory Technicians:** Bridgette Donati and Deepika Radhakrishnan

The year 2021-22 has been a year of change for the MOR Trials Team. We have restructured our unit to meet the needs of a rapidly changing clinical trial environment and improve career paths for trial staff. Ensuring we remain a sustainable trial unit that can offer patients of the Hunter access to trial opportunities close to home. Our team now has three subspecialty teams in addition to gaining knowledge and experience with early phase trials.

- **Team 1** manage Gastrointestinal, Melanoma and Brain cancer trials.
- **Team 2** manage Genitourinary, Head & Neck and Skin cancer trials.
- **Team 3** manage Breast, Lung and Gynecological cancers.

Australia remains a “preferred country” for many clinical trials. MOR Trials continue to be offered a vast range of clinical trials for cancer patients of the Hunter.

Over the past year MOR Trials opened 20 new clinical trials to recruitment across the Hunter New England Local Health District - covering breast, colorectal, gastroesophageal, lung, melanoma, head & neck cancer, bladder, pancreas, renal, testicular, ovarian, and non-melanoma skin cancer.

As of 30 June 2022, 51 trials were actively recruiting participants, four trials remained on hold and another five trials were pending approval to commence. These trials were a mixture of phase 1b, II & III cooperative group, pharmaceutical sponsored studies and investigator initiated studies.

Overall 150 patients were offered the opportunity to participate in a clinical trial. Of these 141 have been enrolled into a clinical trial.

MOR EXPERIMENTS

- **Director of MOR Laboratory and Chief Hospital Scientist:** Assoc Prof Jennette Sakoff
- **Hospital Scientists:** Dr Jayne Gilbert and Madhu Garg
- **Technical Officer:** Alesia Ogrodnik

The MOR Laboratory encompasses the Experimental Therapeutics Group. The aim of the unit is to improve outcomes for cancer patients undergoing chemotherapy. The main areas of research include: (i) the development of new small molecules for the treatment of cancer, (ii) identifying ways to reducing clinical toxicity to chemotherapy and (iii) implementing therapeutic drug monitoring in order to optimise chemotherapy dosing. The drug development program primarily targets brain, pancreatic, ovarian and breast cancers, while studies of clinical toxicity and drug monitoring span all tumour types.

During 2021-22 the unit expanded its research on the Aryl Hydrocarbon Receptor pathway in cancer. Of note is our expansion into the



role of this pathway in pancreatic cancer and the formation of a restrictive barrier surrounding the tumour. Indeed, we have received some pilot funding in this regard and have established a collaboration with Prof Phoebe Phillips from The University of New South Wales to investigate the role of cancer associated fibroblasts and treatment resistance in this disease.

The therapeutic drug monitoring skills of the unit are popular and ever expanding with analysis of 5FU and mitotane levels in cancer patients, as a means to optimise treatment protocols. Indeed, we are the only facility in Australia and the Asia Pacific providing therapeutic drug monitoring of mitotane in blood from patients with adrenocortical carcinoma. We have expanded our research studies in this area with the project now registered on the Australian Rare Cancer portal (ARC) (ARC Portal - Home) (<https://www.arcportal.org.au>); as “Adrenocortical Cancers & Mitotane Pharmacodynamics” in Rare Cancer Spotlight.

Professionally, Dr Jennette Sakoff was promoted to the position of Conjoint Associate Professor by the University of Newcastle in recognition of her commitment to the university in terms of research and student education.

Consumer input with our research has been somewhat hampered by the ongoing covid restrictions. Our laboratory team participated in the Centenary celebrations of the Mater hospital with a fun panel discussion taking place at a formal event with a select group of invited dignitaries in attendance.

PUBLICATIONS

- Campkin DM, Shimadate Y, Bartholomew B, Bernhardt PV, Nash RJ, **Sakoff JA**, Kato A, Simone M. Borylated 2,3,4,5-tetrachlorophthalimide and their 2,3,4,5-tetrachlorobenzamide analogues: synthesis, their glycosidase inhibition and anticancer properties in view to Boron Neutron Capture Therapy. *Molecules* 27 (11) (2022).
- Khoury A, **Sakoff JA**, **Gilbert J**, Scott KF, Karan S, Gordon CP, Aldrich-Wright JR. Cyclooxygenase Inhibiting Platinum(IV) Prodrugs with Potent Anticancer Activity. *Pharmaceutics*, 2022, 14 (4), 787. DOI10.3390/pharmaceutics14040787
- Bjelosevic A, **Sakoff JA**, **Gilbert J**, Gordon C, Aldrich-Wright J. Synthesis, Characterisation and Biological Activity of the Ruthenium(II) Complexes of the N4-tetradentate (N4-TL), 1,6-di(2'-pyridyl)-2,5-dibenzyl-2,5-diazahexane (picenBz2). 2022-Jan, *Journal of Inorganic biochemistry* 226, pp.111629. DOI10.1016/j.jinorgbio.2021.111629
- Sun J; Ambrus J; Baker J; Russell C; Cossar P; **Sakoff J**; Scarlett C, McCluskey A. 3,5-Bis(trifluoromethyl)phenylsulfonamides, a novel pancreatic cancer active lead. *Investigation of the terminal aromatic moiety. Bioorganic & Medicinal Chemistry Letters*, 2022, 61, 128591. DOI10.1016/j.bmcl.2022.128591
- Odell LR, Chau N, Russell CC, Young KA, **Gilbert J**, Robinson PJ, **Sakoff JA**, and McCluskey A. Pyrimidin based dynamin inhibitors as novel cytotoxic agents. *ChemMedChem*, 2022 Jan, v17. doi: 10.1002/cmde.202100560.
- Heart Failure in Breast Cancer Survivors: Focus on Early Detection and Novel Biomarkers. Chen D, Kelly C, Haw TJ, **Lombard JM**, Nordman IIC, Croft AJ, Ngo DTM, Sverdlov AL. *Curr Heart Fail Rep*. 2021 Dec;18(6):362-377. doi: 10.1007/s11897-021-00535-w. Epub 2021 Nov 3. PMID: 34731413
- Clinical activity of durvalumab for patients with advanced mismatch repair-deficient and repair-proficient endometrial cancer. A nonrandomized phase 2 clinical trial Antill Y, Kok P, Robledo K, Yip S, Cummins M, Smith D, Spurdle A, Barnes E, Lee YC, Friedlander M, Baron-Hay S, Shannon C, Coward J, Beale P, Goss G, Meniawy T, **Lombard J**, Andrews J, Stockler MR, Mileshekin L; Australia New Zealand Gynaecological Oncology Group (ANZGOG), *Journal for ImmunoTherapy of Cancer* 2021;9:e002255. doi: 10.1136/jitc-2020-00
- Olaparib tolerability and common adverse-event management in patients with metastatic castration-resistant prostate cancer: Further analyses from the PROfound study. Roubaud G, Özgüroğlu M, Penel N, Matsubara N, Mehra N, Kolinsky MP, Procopio G, Feyerabend S, Joung JY, Gravis G, Nishimura K, **Gedye C**, Padua C, Shore N, Thiery-Vuillemin A, Saad F, van Alphen R, Carducci MA, Desai C, Brickel N, Poehlein C, Del Rosario P, Fizazi K. *Eur J Cancer*. 2022 May 18;170:73-84. doi: 10.1016/j.ejca.2022.04.016.
- What matters for people with brain cancer? Selecting clinical quality indicators for an Australian Brain Cancer Registry. Matsuyama M, Sachchithananthan M, Leonard R, Besser M, Nowak AK, Truran D, Vajdic CM, Zalberg JR, Gan HK, **Gedye C**, Varikatt W, Koh ES, Kichenadasse G, Sim HW, Gottardo NG, Spyridopoulos D, Jeffrey RL. *Neurooncol Pract*. 2021 Aug 31;9(1):68-78. doi: 10.1093/nop/npab055.
- Tumor Genomic Testing for >4,000 Men with Metastatic Castration-resistant Prostate Cancer in the Phase III Trial PROfound (Olaparib). Hussain M, Corcoran C, Sibilla C, Fizazi K, Saad F, Shore N, Sandhu S, Mateo J, Olmos D, Mehra N, Kolinsky MP, Roubaud G, Özgüroğlu M, Matsubara N, **Gedye C**, Choi YD, Padua C, Kohlmann A, Huisden R, Elvin JA, Kang J, Adelman CA, Allen A, Poehlein C, de Bono J. *Clin Cancer Res*. 2022 Apr 14;28(8):1518-1530. doi: 10.1158/1078-0432.CCR-21-3940.
- Find the path of least resistance: Adaptive therapy to delay treatment failure and improve outcomes. **Gedye C**, Navani V. *Biochim Biophys Acta Rev Cancer*. 2022 Mar;1877(2):188681.
- Identifying the unmet supportive care needs of people affected by kidney cancer: a systematic review. O'Dea A, **Gedye C**, Jago B, Paterson C. *J Cancer Surviv*. 2021 Oct 1. doi: 10.1007/s11764-021-01113-8.
- How to Feel Bad., **Gedye, C**. 2021 Oct 10;39(29):3306-3307. doi: 10.1200/JCO.21.01444. Epub 2021 Aug 6
- 177Lutetium PSMA-617 and idronoxil (NOX66) in men with end-stage metastatic castrate-resistant prostate cancer (LuPIN): Patient outcomes and predictors of treatment response of a Phase I/II trial. Pathmanandavel S, Crumbaker M, Yam AO, Nguyen A, Rofe C, Hovey E, **Gedye C**, Kwan EM, Hauser C, Azad AA, Eu P, Martin AJ, Joshua AM, Emmett L. *J Nucl Med*. 2021 Jul 29;jnumed.121.262552. doi: 10.2967/jnumed.121.262552. PMID: 34326127
- Bintrafusp alfa (M7824), a bifunctional fusion protein targeting TGF- β and PD-L1: results from a phase I expansion cohort in patients with recurrent glioblastoma. Khasraw M, Weller M, Lorente D, Kolibaba K, Lee CK, **Gedye C**, I de La Fuente M, Vicente D, Reardon DA, Gan HK, Scott AM, Dussault I, Helwig C, Ojalvo LS, Gourmelon C, Groves M. *Neurooncol Adv*. 2021 Apr 9;3(1):vdab058. doi: 10.1093/oaajnl/vdab058. eCollection 2021 Jan-Dec.
- 'Melanoma: An immunotherapy journey from bench to bedside.' Navani V, Graves MC, **Mandaliya H**, Hong M, **van der Westhuizen A**, Martin J, Bowden NA, , *Cancer Treat Res*, 183 49-89 (2022).
- Sequential azacitidine and carboplatin induces immune activation in platinum-resistant high-grade serous ovarian cancer cell lines and primes for checkpoint inhibitor immunotherapy. Wong-Brown M, **van der Westhuizen A**, Bowden NA (2022) *BMC Cancer*. 22(1):100
- Adult medulloblastoma in an Australian population. Parakh, S., Davies, A., Westcott, K., Roos, D., Abou-Hamden, A., Ahern, E., Lau, P., Cheruvu, S., Pranavan, G., Pullar, A., **Lynam, J.**, . . . Gan, H. K. (2022). *Journal of Clinical Neuroscience*, 102, 65-70. doi:10.1016/j.jocn.2022.06.008
- A qualitative study investigating Australian cancer service outpatients' experience of distress screening and management: what is the personal relevance, acceptability and improvement opportunities from patient perspectives?. McCarter, K., Carlson, M. A., Baker, A. L., Paul, C. L., **Lynam, J.**, Johnston, L. N., & Fradgley, E. A. (2022). *Supportive Care in Cancer*, 30(3), 2693-2703. doi:10.1007/s00520-021-06671-2

20. Postmortem brain donations vs premortem surgical resections for glioblastoma research: viewing the matter as a whole. Griffin, C. P., Paul, C. L., Alexander, K. L., Walker, M. M., Hondermarck, H., & **Lynam, J.** (2022). *Neuro-Oncology Advances*, 4(1). doi:10.1093/oaajnl/vdab168
21. Circulating Tumor DNA Analysis Guiding Adjuvant Therapy in Stage II Colon Cancer. Tie J, Cohen JD, Lahouel K, Lo SN, Wang Y, Kosmider S, Wong R, Shapiro J, Lee M, Harris S, Khattak A, Burge M, Harris M, **Lynam J**, Nott L, **Day F**, et al. *New England Journal of Medicine*. DOI: 10.1056/NEJMoa2200075. Published 4 June 22
22. Care to Quit: A stepped wedge cluster randomised controlled trial to implement best practice smoking cessation care in cancer centres. Paul C, Warren G, Vinod S, Meiser B, Stone E, Barker D, White K, McLennan J, **Day F**, et al. *Implementation Science* 16: 23, 2021.
23. Psychometric properties of leadership scales for health professionals: a systematic review. Carlson MA, Morris S, **Day F**, Dadich A, Ryan A, Fradgley EA, Paul C. *Implementation Science* 16: 85, 2021.
24. Business as unusual: medical oncology services adapt and deliver during COVID-19. **Travers A, Adler K, Blanchard G, Bonaventura T, Charlton J, Day F**, et al. *Internal Medicine Journal* 51: 673-81, 2021.

CONFERENCE POSTERS

1. **San Antonio Breast Cancer Symposium Dec 2021:** The Impact of erythropoietin administration concomitantly with adjuvant anti-Her2 Treatment on the patients' outcome: sub-analysis of the ALTTO study. Marins-Branco D, **Lombard J**, de Asambuja E et al
2. **ESMO conference Sept 2021:** Randomized trial of neoadjuvant chemotherapy with or without concurrent aromatase inhibitor therapy to downstage ER+ve breast cancer: Breast Cancer Trials group ANZ 1401 ELIMINATE trial. Type: Abstract Category: Early Breast cancer: Neoadjuvant therapy Authors :N. Murray, P. Francis, N. Zdenkowski3, N. Wilcken, F. Boyle, V. GebSKI, S. M. Tiley7, L. Gilham, S.-J. Dawson, S. Loi, A. D. Redfern, **J. Lombard**, A. Spillane, C. Shadbolt, H. Badger
3. **HCRA Annual Meeting 2021.** A retrospective audit of elective inpatient admissions to Medical Oncology Ward at Calvary Mater Newcastle. **Zhang, B., Hong, M., Zardawi, S., Scudds, S., & Lynam, J.** (2021). In *ASIA-PACIFIC JOURNAL OF CLINICAL ONCOLOGY* Vol. 17 (pp. 12-13).
4. **AGITG Annual Scientific Meeting, Trials in Progress session 14 October 2021. PALEO:** Phase II clinical trial for the alleviation of oesophageal cancer complications.

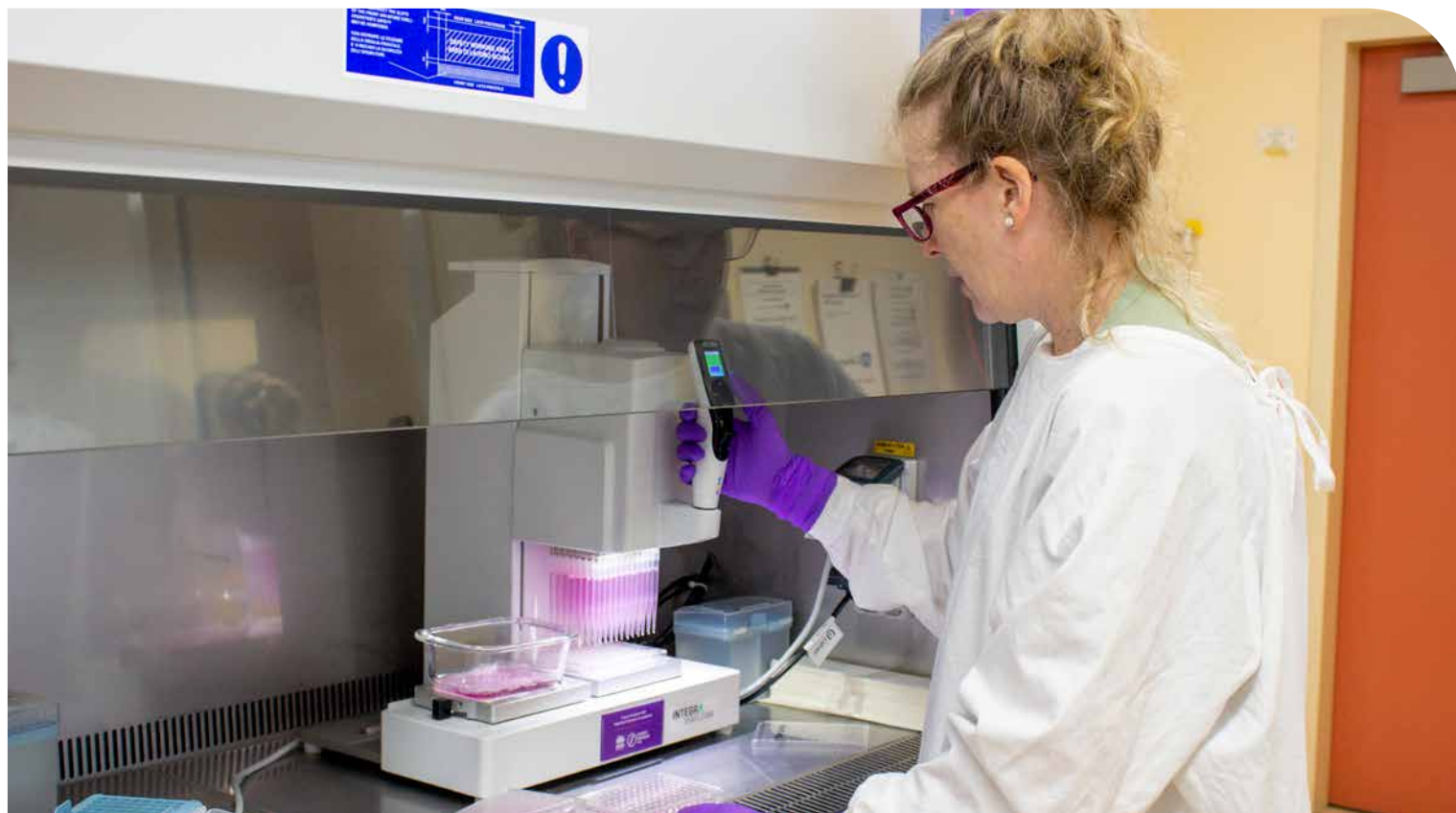
CONFERENCE ORAL PRESENTATIONS

1. Panel title: Addressing workforce capacity and capability in the MTP sector

Conference: 2022 ARCS Annual Conference
Date: 25th May 2022 – Johnson, Catherine

ASCO Annual meeting June 2022:

1. ASCO Annual meeting June 2022: Rischin D, Brungs D, **Day F**, et al. C-POST protocol update: A phase 3, randomized, double-blind study of adjuvant cemiplimab versus placebo post-surgery and radiation therapy (RT) in patients (pts) with high-risk cutaneous squamous cell carcinoma (CSCC). *Journal of Clinical Oncology* 40, no. 16_suppl (June 01, 2022) TPS9592-TPS9592.
2. ASCO Annual meeting June 2022: Tie J, Cohen J, Lahouel K, Lo SN, Wang Y, Wong R, Shapiro JD, Harris SJ, Khattak MA, Burge ME, Harris M, Lynam JF, Nott LM, **Day F**, et al. Adjuvant chemotherapy guided by circulation tumor DNA analysis in stage II colon cancer: The randomized DYNAMIC trial. *Journal of Clinical Oncology* 40, no. 17_suppl (June 10, 2022) LBA100-LBA100. Oral presentation given by A/Prof. Tie on 4 June 2022.
3. ESMO 2022 World Congress on GI Cancer poster: Day D, Starus A, Sieber O, Prasse E, Lamik A, Fredebohm J, Simes J, **Day F**, et al. P-94 circulating tumour DNA (ctDNA) detection using an ultra-sensitive next generation sequencing (NGS)-based assay in patients with resected colorectal cancer (CRC) in the phase III ASCOLT trial. *Annals of Oncology* 33, no. 4_suppl (June 1 2022), S282-S283.



GRANT FUNDING

1. Varian Medical Systems: Funding for the conduct of the PALEO clinical trial in metastatic oesophageal cancer, \$157,687.00
2. Sakoff JA and Gilbert J (2022). Targeting the Aryl hydrocarbon Receptor (AhR) for the treatment of pancreatic cancer. Oncology Research Grant Calvary Mater Newcastle. \$35,000.
3. Sakoff. MRSP funding via Hunter Cancer Research Alliance. \$12,000
4. Sakoff and Ackland. (2021). MRSP Infrastructure support for Experimental Therapeutics Group. Hunter cancer Research Alliance. \$21,600.
5. Sakoff. New platinum compounds as potential anti-cancer drugs. University of Western Sydney. \$15,000.
6. Gilbert J. (2021) Service and Repair of the VIAFLO 384 electronic pipette and maintenance of biological safety cabinets. Hunter Cancer Research Alliance Clinical Cancer Research Fund. \$4,273.
7. Garg MB, Adler K, (2021) Bio-specimen Management System for Cancer Research in Medical Oncology. CMN Coalfields Cancer Support Group Equipment Grant Scheme: \$19,896.

OTHER

Chair-Elect: Advanced Training Committee in Medical Oncology – Royal Australasian College of Physicians (RACP) - **Lynam J.**

DEPARTMENT OF PALLIATIVE CARE

The Department of Palliative Care is a comprehensive multidisciplinary palliative care service providing clinical care to the Greater Newcastle and East Lake Macquarie areas, as well as Telehealth and remote consultation services to the wider Hunter New England Local Health District. The department also provides a consultative inreach specialist palliative care service to local residential aged care facilities.

As part of both the Calvary National network of services, as well as the Hunter New England Local Health District, the department is able to partner to undertake translatable research activities across health care settings, including residential aged care and primary care, as well as metropolitan, regional and rural environments. The department has a strong commitment to, and has participated in, research projects investigating models of community enablement and health/death literacy.

The department's vision is to integrate the three pillars of: best practice clinical care, evidence-based learning and development models and clinician-led research in the delivery of care to patients, carers and the

wider community to enable care in preferred place, cognisant of the unique needs and preferences of all we serve.

A fundamental tenet of this model, a clinically embedded research unit, has been realised in the past three years and the site's research capability has grown, with a number of clinician-led research projects underway, in collaborative partnership with academic, clinical and community stakeholders. The department continues to strive toward improving infrastructure and capability in best practice data collection and analysis.

The department is privileged to have consumers and users of clinical and education services consulting in research design and implementation.

It is the department's objective that all staff in the department feel welcome to be curious and confident to contribute to improvements in care in experience for patients, carers and their peers through enquiry, research design, delivery and implementation. This will be achieved through ongoing commitment to research infrastructure embedded in clinical units.

Miromullia Project (Awabakal language, continue to take care of)

Project Lead: Julie Anne Rose

In 2021, Calvary Mater Newcastle had the opportunity to pause and reflect on how palliative care was being delivered to its local Aboriginal and/or Torres Strait Islander community. It was identified that a model of care, culturally safe and effective for Indigenous communities, as well as staff, was best informed through understanding of needs, preferences and experience of the community. Consulting with the Aboriginal Health Unit and local Land Councils, a partnership was developed to consult with the community to create a best practice framework for care. Further, it was agreed that it was acceptable and optimal that this project was undertaken within a research framework to ensure the process is ethical and meaningful, that the voices of community members are respected and represented authentically.

Steps completed to date:

- Employment of an Aboriginal Project Coordinator, Julie Rose.
- Establishment of an Aboriginal Advisory Group.
- Co-design of methodological approach in consultation with Aboriginal Advisory Groups and academic bodies.
- Attainment of ethical clearance from the national Aboriginal Health and Medical Research Council and local ethics committees.
- Established community survey and community and health professional yarning.

Lessons learnt from this approach so far have highlighted the need for such a project to have a strong Aboriginal lead and strong community support. It is hoped that this project will continue to facilitate collaborative relationship across services to improve experience and meet needs of patients, family and communities accessing specialist palliative care. It is also hoped that the consultative research model may prove translatable and inform ongoing culturally safe service design models.

HPC3 (Hunter Palliative Community Coordinated Care)

Understanding need to enhance care in preferred place for patients and carers.

Project lead: Jessica Scaife

Supported through a MRFF grant in partnership with NSW Regional Health Partners, a randomised control trial is underway to identify best practice community palliative care service delivery and explore the role of care coordination in specialist palliative care. The research is designed to understand need in patients and carers, and the impact of earlier identification of distress and unmet need on the ability for patients to receive care in their preferred place.

Hunter Palliative Community Coordinated Care (known as HPC3) is a partnership with University of Newcastle, Hunter New England LHD, Hunter Medical Research Institute and Calvary Community Care.

Health economic evaluation and comprehensive cost consequence analysis has been embedded in the research design to better inform ongoing service development in specialist palliative care.

Recruitment to this study was commenced in May 2021 and within 11 months, the group has achieved the milestone of full participant recruitment (n=500).

The study is expected to be completed by December 2022.

Summary of other projects underway:

- Current practices in prescription and administration, and pharmacology of subcutaneous Levetiracetam in specialist palliative care - Fern Beschi
- Prognostic modelling to inform service delivery in specialist palliative care - Dr Sarah Moberley
- Validation of palliative care triage modelling in the local setting - Dr Ran May Saw
- Profile, needs and experience of brain cancer patients in the specialist palliative care inpatient setting - Dr Laura Bird
- A human centred design approach to education enabling palliative and end of life care in preferred place for residents of aged care facilities - Alisha Chand

DEPARTMENT OF RADIATION ONCOLOGY

Despite the challenges of the COVID-19 pandemic, the Department of Radiation Oncology continues to integrate a strong research priority alongside clinical service delivery. Nearly all areas of the department contributed to research output including in house trials, multinational research group trials and industry supported trials. There was a particularly impressive output from the Radiation Therapists who contributed five first author articles and delivered an oral presentation at ESTRO 2022. Dr Mahesh Kumar and Dr Jonathan Goodwin were awarded a grant for \$92,442 from the Mark Hughes Foundation to study the role of CEST MRI imaging in brain tumours. Peter Greer was also successful in obtaining a grant for \$599,098 from Cancer Australia to study radiotherapy patient specific quality assurance.

PUBLICATIONS

1. Rischin D, King, Kenny L, Porceddu S, **Wratten C**, Macann A, Jackson, J, Bressel M, Herschtal A, Fisher R, Fua T, Lin C, Liu C, Hughes B, McGrath M, McDowell L, Corry J (2021). Randomized Trial of Radiation Therapy With Weekly Cisplatin or Cetuximab in Low-Risk HPV-Associated Oropharyngeal Cancer (TROG 12.01) - A Trans-Tasman Radiation Oncology Group Study. *International Journal of Radiation Oncology Biol Phys*, 2021 Nov 15;111(4):876-886
2. **Richardson H, Kumar, M Tieu M, Parker J**, Dowling J, Arm J, Best L, **Greer P**, Clapham M, Oldmeadow C, **O'Connor L, Wratten C** (2022). Assessing the impact of magnetic resonance treatment simulation (MRSIM) on target volume delineation and dose to organs at risk for oropharyngeal radiotherapy. *J Med Radiation Science* 2022, Mar 69(1) 66-74
3. Field M, Vinod S, Aherne N, Carolan M, Dekker A, Delaney G, Greenham S, Hau E, **Lehmann J, Ludbrook J**, Miller A, Rezo A, Selvarai J, Sykes J, Holloway L, Thwaites D (2021). Implementation of the Australian Computer-Assisted Theragnostics (AusCAT) network for radiation oncology data extraction, reporting and distributed learning. *J Med Imaging Radiation Oncology*, Aug 65(5) 627-636
4. **Richardson M, Skehan K, Wilton L, Sams J, Samuels J, Goodwin J, Greer P, Sridharan S, Martin, J** (2021) Visualising the urethra for prostate radiotherapy planning. *Med Radiation Science* 2021, Sep:68 (3) 282-288
5. Nithiyanthan K, Creighton N, Currow D, **Martin JM** (2021). Population-Level Uptake of Moderately Hypofractionated Definitive Radiation Therapy in the Treatment of Prostate Cancer, *Int Journal of Radiation Oncol Biol Physics*, 2021 Oct 1.111(2) 417-423
6. Min H, Dowling J, Jameson M, Cloak K, Faustino J, Sidhom M, **Martin J**, Ebert M, Haworth A, Chlap P, de Leon J, Berry M, Pryor D, **Greer P**, Vinod S, Holloway (2021). Automatic radiotherapy delineation quality assurance on prostate MRI with deep learning in a multicentre clinical trial. *Physics Med Biology*, Sep 28:66 (19)
7. **O'Connor L, Skehan K**, Choi JH, **Simpson J, Martin JM**, Warren-Forward H, Dowling J, Greer, P (2021). Optimisation and validation of an integrated magnetic resonance imaging-only radiotherapy planning solution. *Physics Imaging Radiation Oncol*, 2021 Oct 16: 20: 34-39
8. Pryor D, **Martin JM**, Millar J, Day H, Ong WL, Skala M, Fitzgerald L, Hindson B, Higgs B, O'Callaghan M, Syed F, Hayden A, Turner S, Papa N (2021). Evaluation of Hypofractionated Radiation Therapy Use and Patient-Reported Outcomes in Men With Nonmetastatic Prostate Cancer in Australia and New Zealand. *JAMA*, 2021 Nov 1.4 (11)
9. **O'Connor L**, Dowling J, Hyuk Choi J, **Martin JM**, Warren-Forward H, **Richardson H**, Best L, **Skehan K, Kumar M, Govindarajulu G, Sridharan S, Greer**. (2022) P Validation of an MRI-only planning workflow for definitive pelvic radiotherapy. *Radiation Oncology* 2022 Mar 18:17 (1) 55
10. Gomez-Iturriaga A, Keyes M, **Martin JM**, Spratt D (2022) Should brachytherapy be added to external beam radiotherapy for prostate cancer? *Lancet Oncology* 2022 Jan 23(1) 23-25
11. **O'Connor L**, Choi J, Dowling J, Warren-Forward H, **Martin JM, Greer P** (2022) Comparison of Synthetic Computed Tomography Generation Methods, Incorporating Male and Female Anatomical Differences, for Magnetic Resonance Imaging-Only Definitive Pelvic Radiotherapy. *Front Oncol* 2022 Feb 8:12:822687
12. Zhou K, Renouf M, Perrocheau G, Magne N, Latorzeff I, Pommier P, Crehange A, Paumier A, Bera G, **Martin J**, Catton C, Bellanger M, Supiot S. Cost-effectiveness of hypofractionated versus conventional radiotherapy in patients with intermediate-risk prostate cancer: An ancillary study of the Prostate fractionated irradiation trial – PROFIT. *Radiotherapy and Oncology*, 18 June 2022. 173: 306-312
13. Lockhart Kathleen, **Martin JM**, White M. Fusion versus cognitive MRI-guided prostate biopsies in diagnosing clinically significant prostate cancer. *Journal of Clinical Urology*. May 13 2022
14. Young T, Dowling J, Rai R, Liney G, **Greer P**, Thwaites D, & Holloway L. (July 2021). Effects of MR imaging time reduction on substitute CT generation for prostate MRI-only treatment planning. *Physical and Engineering Sciences in Medicine*.
15. Gholizadeh N, **Greer P, Simpson J, Goodwin J**, Fu C, Lau P, . . . Ramadan S. (July 2021). Diagnosis of transition zone prostate cancer by multiparametric MRI: added value of MR spectroscopic imaging with sLASER volume selection. *JOURNAL OF BIOMEDICAL SCIENCE*, 28(1)
16. Hughes J, Lye J, Kadeer F, Alves A, Shaw M, Supple J, Keehan S, Gibbons F, **Lehmann J**, Kron T. Calculation algorithms and penumbra: Underestimation of dose in organs at risk in dosimetry audits (July 2021) *Medical Physics*, 48 (10), pp. 6184-6197.
17. Shaw, M., Lye, J., Alves, A., Keehan, S., **Lehmann, J.**, Hanlon, M., Kenny, J., Baines, J., Porumb, C., Geso, M., Brown, R. Characterisation of a synthetic diamond detector for end-to-end dosimetry in stereotactic body radiotherapy and radiosurgery (Oct 2021) *Physics and Imaging in Radiation Oncology*, 20, pp. 40-45.
18. Vasina, E.N., Greer, P., Thwaites, D., Kron, T., **Lehmann, J.** A system for real-time monitoring of breath-hold via assessment of internal anatomy in tangential breast radiotherapy (Nov 2021) *Journal of Applied Clinical Medical Physics* 23(1),e13473
19. Raith A, Ehrgott M, Fauzi F, Lin K-M, Macann A, Rouse P, **Simpson J**, Integrating Data Envelopment Analysis into radiotherapy treatment planning for head and neck cancer, *European Journal of Operational Research* 296(1):289-303 (2022)
20. Ebert, M. A., Marcello, M., Kennedy, A., Haworth, A., Holloway, L. C., **Greer, P.**, . . . Dearnaley, D. (2022). In Regard to Shortall et al. *International Journal of Radiation Oncology Biology Physics*, 112(3), 831-833
21. Batista, V., Gober, M., Moura, F., Webster, A., Oellers, M., Ramtohl, M., Kügele, M., Freislederer, P., Buschmann, M., Anastasi, G., Steiner, E., Al-Hallaq, H., **Lehmann, J.** Surface guided radiation therapy: An international survey on current clinical practice (March 2022) *Technical Innovations and Patient Support in Radiation Oncology*, 22, pp. 1-8
22. **Lehmann, J., Standen, T.S., Kaur, G., Wolf, J., Wilfert, A., Simpson, J.** Methodology of thermal drift measurements for surface guided radiation therapy systems and clinical impact assessment illustrated on the C-Rad Catalyst+ HD system (Mar 2022) *Technical Innovations and Patient Support in Radiation Oncology*, 21, pp. 58-63 23.
23. **Barnes, M.**, O'Connor, D.J., Ebert, M. Theoretical evaluation of a novel method for producing fluorine-18 for Positron-emission-tomography (PET) applications utilizing the $3\text{He}(d,p)4\text{He}$ reaction (2021) *Physical and Engineering Sciences in Medicine*, 44 (3), pp. 843-853.

24. Zifodya J, **Barnes M**, Baldock C. Internationally trained medical physicists should be certified, through ACPSEM, in order to be employed in Australia and New Zealand as Radiation Oncology Medical Physicists (2022) *Physical and Engineering Sciences in Medicine*, 45 (1), pp. 3-7
25. **Barnes, M. P.**, Sun, B., Oborn, B. M., Lamichhane, B., Szwec, S., Schmidt, M., . . . **Greer, P.** (Apr 2022). Determination of the electronic portal imaging device pixel-sensitivity-map for quality assurance applications. Part 2: Photon beam dependence. *Journal of Applied Clinical Medical Physics*.
26. **Barnes, M. P.**, Sun, B., Oborn, B. M., Lamichhane, B., Szwec, S., Schmidt, M., . . . **Greer, P.** (2022). Determination of the electronic portal imaging device pixel-sensitivity-map for quality assurance applications. Part 1: Comparison of methods. *Journal of Applied Clinical Medical Physics*.
27. **Lehmann, J.**, Hussein, M., Barry, M. A., Siva, S., Moore, A., Chu, M., . . . Clark, C. H. (2022). SEAFARER – A new concept for validating radiotherapy patient specific QA for clinical trials and clinical practice: SEAFARER - sensitivity of patient specific quality assurance, PSQA. *Radiation Therapy and Oncology*, 171, 121-128. (Jun)
28. **Barnes, M., Pomare, D., Doebrich, M., Standen, T. S., Wolf, J., Greer, P., & Simpson, J.** (2022). Insensitivity of machine log files to MLC leaf backlash and effect of MLC backlash on clinical dynamic MLC motion: An experimental investigation. *JOURNAL OF APPLIED CLINICAL MEDICAL PHYSICS*
5. Genitourinary hrQoL following Urethral sparing prostate SBRT compared with virtual HDR boost. Oral Presentation ESTRO May 2022. **M Richardson**, M Sidhom, P Keal, J Bucci, **S Gallagher**, **P Greer**, A Hayden, A Kneebone, D Pryor, S Siva, **J Martin**.
6. Legislation (or lack of) Roles of the MR RT and MR Physicist and MRI safety. Oral Presentation NSW (ROMP) TEAP Meeting March 2022. **K Skehan**.
7. Reflections on implementation and integration of MR in Radiation Oncology. Oral Presentation NSW (ROMP) TEAP Meeting March 2022. **K Skehan**
8. To Fill or Not to Fill: Designing and Adaptive Bladder Filling Procedure during Intracavitary Brachytherapy for Cervical Cancer. Australian Brachtherapy Group Annual Meeting October 2021. **S Oultram**
9. Biofeedback Enabled CALM (BECALM): Trialling the use of biofeedback to reduce anxiety during radiotherapy treatment: A pilot randomised controlled trial. Oral Presentation Oct 2021. Forbes E, Clover K, Baker A, McCarter K, **Oultram S**, **Wratten C**, **Kumar M**, **Tieu M**, Nixon J, Britton B
10. Against the motion rebuttal: Brachytherapy Boost for Prostate Cancer- A Diminishing Solution. In *RADIOTHERAPY AND ONCOLOGY* Vol. 158 (pp. S20). Martin, J., Sidhom, M., Pryor, D., Tang, C., Hayden, A., Miller, A., . . . Tomaszewski, J. (2021).
11. Against the motion rebuttal: Brachytherapy Boost for Prostate Cancer - A Diminishing Solution. In *RADIOTHERAPY AND ONCOLOGY* Vol. 158 (pp. S20) **Martin, J.**, Sidhom, M., Pryor, D., Tang, C., Hayden, A., Miller, A., . . . Tomaszewski, J. (2021).
12. Integrating data envelopment analysis into radiotherapy treatment planning for head and neck cancer. *RADIOTHERAPY AND ONCOLOGY* Vol. 158 (pp. S20). **Simpson, J.**, Raith, A., Kuan-Min, L., Macann, A., Rouse, P., Erh Gott, M. 2021.
13. Monitoring DIBH via measurements of the lung depth during tangential breast cancer radiotherapy. 2021 Hunter Cancer Research Alliance (HCRA) Symposium, poster presentation. In *ASIA-PACIFIC JOURNAL OF CLINICAL ONCOLOGY* Vol. 17 (pp. 15-16) 2021. **Vasina, E., Kong, N., Greer, P., Govindarajulu, G., Ludbrook, J., & Lehmann, J.**
14. Investigation of 4D-MRI for lung cancer radiation treatment planning. In *ASIA-PACIFIC JOURNAL OF CLINICAL ONCOLOGY* Vol. 17 (pp. 11-12) 2021. **Goodwin, J., Higuchi, S., O'Connor, L., Zerafa, A., Skehan, K., Perkins, T., . . . Simpson, J.** (2021).
15. Breathing pattern analysis of 4D-CT and 4D-MRI. In *ASIA-PACIFIC JOURNAL OF CLINICAL ONCOLOGY* Vol. 17 (pp. 24) 2021. **Higuchi, S., Goodwin, J., O'Connor, L., Zerafa, A., Greer, P., Ludbrook, J., & Simpson, J.** (2021).
16. Virtual phantom-based pre-treatment verification of single-isocenter multiple brain targets SRS. In *RADIOTHERAPY AND ONCOLOGY* Vol. 161 (pp. S1319-S1320) 2021. Calvo-Ortega, J., **Greer, P. B.**, Moragues-Femenia, S., Laosa-Bello, C., & Casals-Farran, J.
17. Spatial Characterization of errors in pseudo-CT generation for MRI-only radiotherapy. In *RADIOTHERAPY AND ONCOLOGY* Vol. 161 (pp. S1408-S1410) 2021. Chourak, H., Barateau, A., Cadin, C., Lafond, C., Nunes, J., De Crevoiser, R., **Greer P**, Acosta, O.
18. Improving local Patient Specific Quality Assurance- a novel remote auditing approach In *RADIOTHERAPY AND ONCOLOGY* Vol. 161 (pp. S328-S330) 2021. **Lehmann, J.**, Hussein, M., Siva, S., Moore, A., Standen, T., Subramanian, B., . . . Clark, C.
19. First patient experience with real-time EPID-based breath hold monitoring during breast radiotherapy. In *RADIOTHERAPY AND ONCOLOGY* Vol. 161 (pp. S688-S689) 2021. Vasina, E., **Greer, P.**, Ortega, J. B., Kron, T., **Ludbrook, J.**, Thwaites, D., & **Lehmann, J.**
20. Establishing action levels for virtual phantom-based QA of IMRT plans. In *RADIOTHERAPY AND ONCOLOGY* Vol. 161 (pp. S1320-S1321) 2021 Calvo-Ortega, J., **Greer, P. B.**, Moragues-Femenia, S., Laosa-Bello, C., & Casals-Farran, J.
21. cGAN-based pseudo-CT generation for prostate MRI-only radiotherapy. In *RADIOTHERAPY AND ONCOLOGY* Vol. 161 (pp. S1401-S1402) 2021. Tahri, S., Cadin, C., Chourak, H., Barateau, A., Ribault, S., Acosta, O., **Greer P**, . . . Nunes, J.
22. Verification of a System for Real-Time EPID Based Breath Hold Monitoring During DIBH Tangential Breast Cancer Radiotherapy. In *MEDICAL PHYSICS* Vol. 48. 2021. Vasina, E., **Greer, P**, Thwaites, D., & **Lehmann, J.**
23. Sensitivity Evaluation of Patient Specific Quality Assurance - Independent Assessment of Quality. In *MEDICAL PHYSICS* Vol. 48. 2021. **Lehmann, J.**, Hussein, M., Siva, S., Moore, A., Standen, T., Subramanian, B., . . . Clark, C. H.
24. Feasibility of Time-Resolved DVH Based Treatment Delivery Verification of VMAT with EPID. In *MEDICAL PHYSICS* Vol. 48 2021. **Greer, P.**, David, R., & **Wolf, J**
25. Development and Deployment of a Real-Time Transit EPID Dose Verification System. In *MEDICAL PHYSICS* Vol. 48 (pp. 1 page). 2021. Baeza, J. A., Cassell, C., Lee, D., **Kong, N.**, & **Greer, P.**
26. Voxel-wise analysis for spatial characterisation of pseudo-ct errors in MRI-only radiotherapy planning. In *Proceedings - International Symposium on Biomedical*

- Imaging Vol. 2021-April (pp. 395-399). 2021 Nice, France. Chourak, H., Barateau, A., Mylona, E., Cadin, C., Lafond, C., **Greer, P.**, . . . Acosta, O.
27. Patient experience with LEILA: real-time measurements of the mid lung depth in EPID images of tangential breast fields, EPSM 2021, Oral Presentation. **Elena Vasina, Natalie Kong, Peter Greer, Geetha Govindarajulu, Jane Ludbrook, Joerg Lehmann**
28. Thermal drift in Surface Guided Radiation Therapy, EPSM 2021, poster presentation. **Joerg Lehmann, Therese Standen, Guneet Kaur, Joshua Wolf, Alex Wilfert**
29. Report dose-to-medium in clinical trials; a consensus from the Global Harmonisation Group, ESTRO 2021 poster. Stephen Kry, Jessica Lye, Catharine Clark, Nicolaus Andratschke, Alexis Dimitriadis, David Followill, Rebecca Howell, Mohammad Hussein, Masayori Ishikawa, Satoshi Kito, Tomas Kron, Jonny Lee, Jeff Michalski, Angelo Monti, Nick Reynaert, Paige Taylor, Karen Venables, Ying Xiao, **Joerg Lehmann**
30. TROG 14.04: Multicentre study of feasibility and impact on anxiety of DIBH in breast cancer patients ESTRO 2021, poster presentation. Tomas Kron, Mathias Bressel, Peta Lonski, Courtney Hill, Rebecca Mercieca-Bebber, Verity Ahern, Margot Lehman, Carol Johnson, Drew Latty, Rachel Ward, Danielle Miller, Dilli Banjade, Debra Moriss, Richard De Abreu Lourenco, Jenny Woodcock, Rebecca Montgomery, **Joerg Lehmann, Boon Chua**
31. Comparison of 4D-MRI and 4D-CT for lung cancer volume and motion assessment. EPSM 2021, poster presentation. **Satomi Higuchi, Jane Ludbrook, Laura O'Connor, Amy Zerafa, Peter Greer, John Simpson, Jonathan Goodwin**
32. Clinical evaluation of 4DMRI for lung cancer radiation treatment planning. ISMRM 2021. **Jonathan Goodwin, Satomi Higuchi, Laura O'Connor, Amy Zerafa, Kate Skehan, Terry Perkins, Sanjiv Gupta, Peter Greer, Jane Ludbrook, John Simpson.**
33. Correlation between internal and external anatomy motion during DIBH breast RT treatments. TROG 2022 Annual Scientific Meeting, oral presentation. **Elena Vasina, Natalie Kong, Philippa Patterson, Jane Ludbrook, Geetha Govindarajulu, Tomas Kron, Peter Greer, Joerg Lehmann**
34. Dosimetric auditing to assist international centres participating in Australian clinical trials. TROG 2022 Annual Scientific Meeting, oral presentation. **Peter Greer, Alisha Moore, Andrew Grose, Annette Haworth, Joerg Lehmann.**
35. Clinical experience with real-time portal monitoring of breath-hold in tangential breast cancer radiotherapy. IUPSEM World Congress on Medical Physics and Biomedical Engineering 2022 Singapore, poster presentation. **Elena Vasina, Natalie Kong, Peter Greer, Tomas Kron, Joanna J Ludbrook, David I Thwaites, Joerg Lehmann**
36. The Global Harmonization Group and its role in ensuring quality trials. IUPSEM World Congress on Medical Physics and Biomedical Engineering 2022 Singapore, oral presentation. **Joerg Lehmann, Nicolaus Andratschke, Satoshi Ishikura, Elizabeth Miles, Stephen Kry, Catherine Clark**
37. Robustness of spine SABR plans to delivery errors within machine tolerance: multicentre analysis. ESTRO 2022, oral presentation. Mohammad Hussein, **Joerg Lehmann, Catharine Clark**
38. Back arching during tangential DIBH breast treatments detected with live EPID based position monitoring. poster presentation, ESTRO 2022. **Elena Vasina, Natalie Kong, Jane Ludbrook, Geetha Govindarajulu, Peter Greer, Joerg Lehmann**

GRANTS

- Greer PB, Artschan R, Wratten C, Simpson J, Ostwald P, Trada Y, EDOC – Epid Detection Of Change, CCRR, 17/08/2021 (\$8,000)
- Greer PB, Lehmann J, Trada Y, Moore A, Simpson J, Clark C, Hussein M, SEAFARER-Is radiation therapy patient specific QA in Australia effective, Cancer Australia (\$599,098), 2022-2024
- Kumar M, Goodwin J, CEST Imaging for metabolic assessment in brain tumours (CIMBA-B), Mark Hughes Foundation Centre for Brain Cancer Research, 2022-2024 (\$92,000)

CLINICAL TRIALS ACTIVITY

- Fifty-four Radiation Oncology patients were enrolled onto clinical trials, with 43 to CINSW portfolio trials.
- Initiation of the Margaret Mitchell Grant funded multi-centre phase II MODERN-LUNG study looking at hypofractionated CRT followed by immunotherapy for NSCLC (Jane Ludbrook).
- James Lawrie Grant funded ‘Prognostic implications of nerve density in head and neck cancer’ study of Mimi Tieu. The pathological assessments have been completed and correlation with clinical outcomes is ongoing.

PHD'S CONFERRED

- Dr Indriani Astono, PhD, University of Newcastle, Convolutional Neural Networks for Image Segmentation in Clinical Applications, 14/09/2021
- Dr Michael Barnes, PhD, University of Newcastle, Comprehensive Linear Accelerator Quality Assurance Testing for Volumetric Modulated Arc Therapy (VMAT), 31/05/2022

SOCIAL WORK

Drake, J., Walker, M., Gallant, N., Sturgess, E. and McGill, K. (2021). Caring for the Caring Professionals Within a Cancer Hospital: Research into Compassion Fatigue, Burnout, and Distress. *Australian Social Work*, pp.1–13.

SURGERY

ARTICLES PUBLISHED

- Portal vein stenting in the management of duodenal varices due to malignant obstruction: A case report and literature review - Roy S, Giles T, Majid A. *International Journal of Surgery Case Reports* 95 01 Jun 2022.
- Incidental adenocarcinoma of the gallbladder in a patient with y insertion gallbladder duplication in the context of recurrent biliary colic: A video case report - Dustin Jefferys, Susmit Roy, Adeeb Majid. *Medicine (United States)* 101(8):E28829 25 Feb 2022.
- Anatomical reconstruction after pancreaticoduodenectomy in a patient with previous Roux-en-Y gastric bypass for obesity: a novel complication for the future - Roy S, Jefferys D, Rubbo S, Mayo-Ramsay T, Majid A. *ANZ Journal of Surgery* 01 Jan 2021.

ARTICLES UNDER FINAL STAGES OF REVIEW

- Binge-eating and Sodium Bicarbonate: A potent combination for gastric rupture in adults. Two case reports and a review of literature - You Jin Han, Susmit Roy, Ashley Siau, Adeeb Majid. *Journal of Eating Disorders, Springer Nature.*
- Laparoscopic Choledochotomy and Choledochoduodenostomy For The Management Of Persistent Common Bile Duct Stones - A video case report. *SAGE Open Medicine.*

POSTERS ACCEPTED

- Anatomical reconstruction after pancreaticoduodenectomy in a patient with previous Roux-en-Y Gastric Bypass for obesity: a novel complication for the future. Australian and New Zealand Metabolic and Obesity Surgical Society (ANZMOSS) Conference, Cairns - October 2022.

RESEARCH PUBLICATION GRANTS SECURED

- Portal Vein Stenting in the Management of Duodenal Varices Due to Malignant obstruction: A Case Report and Literature Review.* The Hunter Surgical Society. \$1,430
- Incidental adenocarcinoma of the gallbladder in a patient with Y insertion gallbladder duplication in the context of recurrent biliary colic - a video case report.* The Hunter Surgical Society. \$1,950