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Training and Education Newsletter

Autumn / Winter 2021

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Icons

To aid navigation, the following icons are shown throughout the newsletter to highlight non-clinical, clinical and/or Allied Health Professional researchers and related activities.



Non-clinical



Clinical



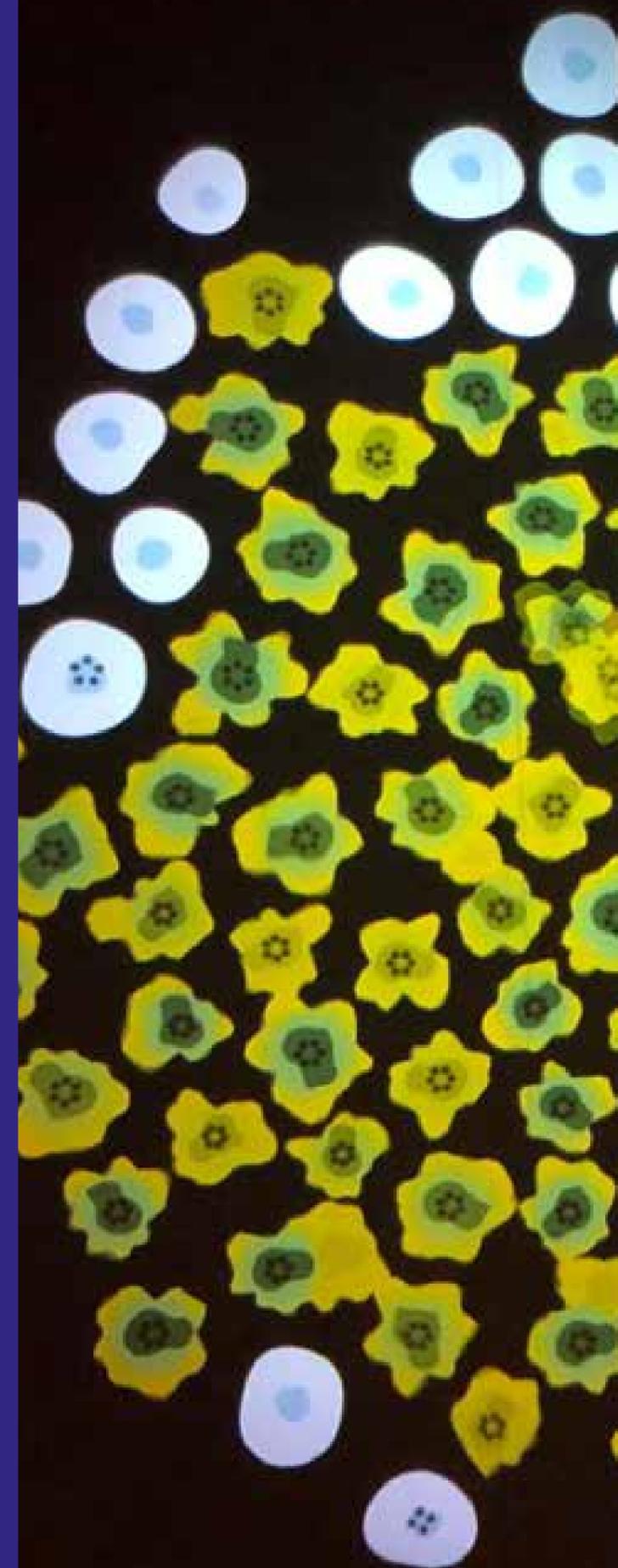
Allied Health Professional



Editor: Dr Georgina Binnie-Wright

Graphic Design: Elizabeth Openshaw

Copy Editor: Dr Joe Mowll-Clarke



Welcome

Our Newsletter celebrates postgraduate, postdoctoral and alumni successes and is driven by your contributions. We are grateful to those who have taken time to contribute new items to this edition. Further submissions and suggestions for content for our Spring/Summer 2022 Newsletter can be sent to MCRCtraining@manchester.ac.uk.

Professor Robert Bristow, Director of the MCRC and CRUK Manchester Centre



Welcome to the second edition of our MCRC-CRUK Manchester Centre Training & Education Newsletter. The start of the 2021 academic year marks a new intake of our postgraduate and postdoctoral researchers, who we

welcome into the MCRC-CRUK Manchester Centre family. Your cancer research projects are supported by our Team Science approach, with researchers working together in multidisciplinary teams to progress our ambitious translational research goals.

At the MCRC-CRUK Manchester Centre, we champion all aspects of Equality, Diversity and Inclusion (EDI) in our research programming, including through technologies used and patients in our clinical trials; and through our career development, recruitment, and staff and student bodies. We were particularly pleased in this issue to highlight postdocs who are spearheading development opportunities via Black in Cancer and Postdoc Appreciation Week. Postgraduate and postdoctoral researchers have achieved significant academic and charitable successes, raising substantial funds for Cancer Research UK during and outside of their work time. We look forward to continuing to showcase all of your successes during your time in Manchester and beyond.

Rachel Chown, Education and Development Lead



I am delighted to read about all our training and education successes in the second edition of this newsletter. As Education and Development Lead at the MCRC and Head of Academic Education at The Christie, my

role involves close working with the MCRC Director (Rob Bristow) and the Director of Christie Education (Richard Fuller) on new strategic education projects, including: building international links, coordinating commercial and academic collaborations related to Manchester based programmes, managing major funding bids within education and wider research, and acting as a senior liaison between the University and The Christie.

with the opportunity to ask unique research questions specific to our city and patients.

A large part of my role within The Christie is managing the International Fellowship Programme, on which we have approximately 60 active fellows at any one time working across a wide range of disciplines and disease teams. One of our goals within Manchester is to ensure all trainees have the opportunity to work together, network, and collaborate no matter whether they are a Christie fellow, university non-clinical PhD, a CRTF, nursing PhD, AHP PhD, MB-PhD or other. So look out for our MCRC-Christie virtual coffee meetings to meet those undertaking other training programmes and grow your network into the Christie or vice versa! For any more information on Christie fellowships please see www.christie.nhs.uk/internationalfellowship.

It is an extremely exciting time to begin your studies in Manchester. We remain uniquely placed to undertake cancer research, with our research labs and hospital co-located on one site to enable strong translational links between partners – only to be further strengthened by the opening of the Paterson rebuild in early 2023. Manchester represents a diverse and varied population, not seen in all other leading cancer locations in the UK, which provides us

The MCRC and CRUK Centre Training Office is there to support you as you apply for your PhD, throughout your programme, and importantly beyond this as you look to develop your research career. We can provide guidance regarding onward funding, fellowships and future opportunities. So if you are starting to think about your next move, please [get in touch](#) to book a drop in discussion.

Empowering Future Leaders

Our New PhD Trainees

In 2021, the MCRC-CRUK Manchester Centre welcomed new PhD students and Fellows to Manchester, with many of these researchers working within the Division of Cancer Sciences. A selection of new postgraduate researchers appointed via the MCRC and CRUK Manchester Centre are shown. We look forward to learning more about their research as they progress with their studies.



1. Amerah Alshamrani, Radnet-affiliated Research Radiographer; 2. Harry Barnes, CRUK Non-Clinical PGR; 3. Mala Carys, CRUK Non-Clinical PGR; 4. Naomi Eastwood, CRUK Non-Clinical PGR; 5. Laura Guest, CRUK Non-Clinical PGR; 6. Awen Hasan, CRUK Accelerator Award Non-Clinical PGR; 7. Abigail Hemming, CRUK RadNet Non-Clinical PGR; 8. Stephanie Hill, CRUK RadNet AHP Academy Research Radiographer; 9. Robbie Samuel, Leeds-Manchester Clinical Research Training Fellow; 10. Seung Hyun Lee, ACED Accelerator Research Training Fellow; 11. Danielle Smith, CRUK RadNet Non-Clinical PGR; 12. Olivia Steel, CRUK Accelerator Award Non-Clinical PGR; 13. Alexia Strickson, CRUK MB-PhD Student; 14. Shabnam Thapa, Marie Curie ITN Early Stage Researcher; 15. Nadina Tinsley, Christie Charitable Trust Clinical Research Training Fellow; 16. David Withey, CRUK MB-PhD Student; 17. Dandan Xing, RadNet-affiliated Non-Clinical PGR

Welcoming Our New Trainees

On Wednesday 20 October 2021, we formally welcomed new cancer postgraduate researchers (PGRs) to the MCRC-CRUK Manchester Centre, as part of our hybrid induction event hosted with the Division of Cancer Sciences.

At the event, existing PhD students, Fellows and staff shared their research highlights and top tips for carrying out a successful PhD in Manchester. Read more about the event on the [MCRC website](#).



Staff and new postgraduate researchers at our 20 October hybrid induction event. Others joined us remotely via Zoom.

Top tips from our researchers:

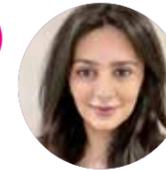
Organisation. Always plan ahead. Plan often. Fewer experiments that are well thought out are better than more. Always keep your scientific question in mind. And keep your lab book updated – you will probably forget those small details you think you will remember!

Communication. Build an open communication channel with your supervisory team and find a schedule that works for both of you.

Self-care. Remember things will go wrong, so it is important to find coping strategies outside of work. Take time for yourself. Don't be afraid to ask for help from those around you if you are encountering any struggles so you can get the right support.

Opportunities. 3-4 years isn't as long as you think so make as much out of your time here as you can! Always try to capitalise on other learning opportunities, such as seminars, presentations and courses, and try to get out of your comfort zone.

We spoke to some of our new researchers about what brought them to Manchester, their research projects and ambitions...



Amerah Alshamrani, RadNet-affiliated Research Radiographer

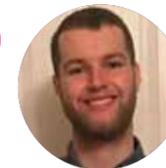
Research Group: Advanced Radiotherapy

PhD Title: Adaptive radiotherapy for cervical cancer

PhD Supervisors: Dr Cynthia Eccles, Dr Marianne Aznar, Prof. Peter Hoskin, Dr Robert Chuter

"I am a first-year PhD student working on optimising adaptive radiotherapy for cervical cancer patients. During my master's degree at The University of Manchester in cancer biology and radiotherapy physics, I was able to explore a variety of radiotherapy projects at The Christie. This raised my awareness of the fields of adaptive radiotherapy and MR-Linac and led

me to apply to Dr Cynthia Eccles' PhD project. Prior to this, I had 4 years of clinical experience as a therapeutic radiographer in two different radiotherapy centers in Saudi Arabia, where I am from. I am very much enjoying my PhD research journey and am looking forward to being a part of a project within the MR-Linac team".



David Withey, MB-PhD Student

Research Group: Breast Biology

PhD Title: Investigation of the pro-tumour microenvironment of CNS (brain and leptomeningeal) metastases in secondary breast cancer

PhD Supervisors: Prof. Robert Clarke, Dr Ciara O'Brien, Prof. Federico Roncaroli

"In early October I commenced my intercalated PhD in cancer sciences, having previously completed 3 years of my medical degree at The University of Manchester. In medical school, I gained a deep interest in oncology, both as a scientific subject and as a clinical speciality.

The aim of my project is to investigate the relationship between the central nervous system metastases in secondary breast cancer and their microenvironment – particularly how this relationship supports the development of these secondary tumours and how it can be exploited by developing new treatment.

I decided to apply for the MB-PhD programme to not only become an expert in my chosen field, but to use this knowledge to contribute to advancements in oncological research.

After graduating from university, I hope to enter the academic foundation programme with a view to qualifying as an academic clinician in medical oncology – allowing me to combine both scientific research and clinical practice".



Dr Tania Seale, Postdoctoral Researcher

Research Group: Lymphoma Group, Division of Cancer Sciences

My journey to becoming a Postdoc hasn't been 'traditional' in my eyes. After starting my career as a nurse, and working predominantly in haematological oncology, I decided that I wanted to further apply my academic knowledge following many years of working in clinical research in the NHS as a research nurse and research network team leader.

In February of last year, I joined the Manchester Lymphoma Group to work alongside some very prominent clinical researchers. The group's main interest is in the late effects of treatment for lymphoma and I am lucky to work across a number of different projects in this area.

I returned to university to complete a PhD which focused on the early diagnosis of myeloma, a blood cancer I had witnessed repeatedly being diagnosed late with devastating results for patients I had cared for.

I've joined a very dynamic group, which is fantastic, and it's great to work alongside a group of such motivated clinicians and researchers. I feel part of a much wider group of researchers who share the same collective ethos".

[Find out more](#) about Tania's research.

Researcher Voices

Postgraduate and postdoctoral researchers at the MCRC-CRUK Manchester Centre are represented at funder, School and Divisional levels, by members of their cohort. In these roles, they advocate for change in key areas and are instrumental in highlighting and providing training and development opportunities.



Dr Joan Chang

Postdoctoral Researcher, Initiator of the UK National Postdoc Appreciation Week

Research Group: Karl Kadler Group, Wellcome Centre for Cell-Matrix Research

For this issue, we spoke to Dr Joan Chang, a postdoctoral researcher at The University of Manchester, about her work on Postdoc Appreciation Week. Joan studied Biochemistry at Imperial College London and received her PhD from the Institute of Cancer Research in 2013. Now researching cell-matrix interactions, she also acts as a postdoc and research staff representative. In these roles she aims to challenge traditional views on “academia”, broaden career horizons for postdocs, and promote wellbeing for scientists in general.

“Due to the shutdown of labs during COVID-19 in 2020, I initiated the expansion of Postdoc Appreciation Week (PAW) to UK and ROI-wide National PAW events (UKNPAW), involving 18 institutions in the organisation and opening this to all postdocs in/from the UK and Republic of Ireland. This year, PAW was held on 20-24 September 2021, and the UKNPAW event kickstarted the week by exploring Diverse Careers in the Postdoc Afterlife. A video of this event can be watched [here](#).

Within Manchester, we moved away from Zoom for the main event (and undeterred by a burst water main), in the form of a scavenger hunt-style outdoor event ([Navigating Postdoc Life](#)), where teams of postdocs/researchers received clues to find landmarks of The University of Manchester, and along the way find out more about the life, perks, and rights of being a postdoc here at Manchester.

The week closed with the National Postdoc Conference 2021 (NPDC21), which was hosted by the University of Liverpool. The biennial NPDC provides an opportunity for postdoctoral researchers to engage with industry stakeholders, funding agencies, policy influencers, researcher developers and career development professionals, as well as network with one another. 2021 marked the first year the NPDC was held in the North of England and in one of the eight universities the N8 represents.

This year also marks the first time NPDC went online and was free for everyone, with an important keynote from Prof Dame Ottoline Leyser on how UKRI is working to build a more inclusive and thriving research environment. This event can be [re-watched](#), together with other recorded sessions featuring a wide range of discussion topics, from careers in industry, appreciating soft skills we acquired as postdocs, to how to create a community, and all the way to handling rejection.

I’ve been lucky in my own scientific journey, as I’ve always had great mentors, and access to support and knowledge about different career paths. This latter part is something that is not as commonplace as it should be in academia, which forms a major drive to my participation in becoming a representative. I wanted to provide a voice for those who may not have a great supportive network, and to disseminate knowledge and access to resources, and

help create a more equitable environment (as opposed to relying on the luck of having a great mentor). Another particular reason that UKNPAW was initiated, was that I’ve moved, by myself, multiple times for my research, and deeply felt how important it is to have a community to ground oneself to.

“I wanted to provide a voice for those who may not have a great supportive network, and to disseminate knowledge and access to resources, and help create a more equitable environment”

This sense of belonging and connection was greatly impacted by the lockdown, and when it was time to organise Manchester PAW, I came to realise that many universities, including UoM, had budget cuts to activities for postdocs and researchers; another representative from FSE, Tom Bannan, suggested we could reach out to other universities to see if we could pool resources and run something communal for everyone.

“UK NPAW was born – our ethos was to create an online event with a positive message to celebrate postdocs, which was free and open to all researchers within the UK and ROI.”

I asked our network to send out emails, and the rest is history! For various reasons we ended up keeping a separate Manchester PAW main event, but UK NPAW was born – our ethos was to create an online event with a positive message to celebrate postdocs, which was free and open to all researchers within the UK and ROI. We had wonderful feedback from attendees, and 2021 marks the second year we’ve organised events, which hopefully will keep running until all universities have their own PAW events, and beyond.

Read more about National Postdoc Awareness Week 2021 on the [MCRC website](#).

This year we only had one main event for UK NPAW, as the NPDC was also happening, so we didn’t want to overwhelm researchers by having too many events within the same week. It has been a tremendous pleasure to assist with organising, and delivering a session at the NPDC, which focuses not just on careers but also emphasises the mental health and well-being of postdocs. Their pre-conference networking sessions were also tremendously fun, and all-encompassing in an inclusive manner.

The NPDC facilitates discussions on how the landscape could transform in a way that brings equity to all, regardless of one’s background or institutional affiliations. The programme put together by the Liverpool team has helped to tackle these feelings, allowing postdocs to feel empowered and better prepared, both in terms of knowledge and know-how, to tackle any challenges we may face in the near future”.



Equality, Diversity & Inclusion

The MCRC-CRUK Manchester Centre are committed to ensuring equality, diversity and inclusion (EDI) across the recruitment and retention of postgraduate and postdoctoral trainees, and to tackling health inequalities in our research projects. By encouraging diversity in our training programmes, we aim to ensure equality and equity in those entering the academic workforce, whilst actioning areas where we can address inequalities in the future. Each issue we will hear from trainees who are championing EDI at Manchester and beyond.



Diversity in Postgraduate Funding and the Academic Pipeline

In a leading publication on barriers to black students accessing PhD research council funding, [Leading Routes](#) found that despite good representation at undergraduate and taught postgraduate level, over a three-year period (2016-19) only 1.2% of 19,868 UKRI PhD studentship awards were made to black candidates. This lack of diversity impacts on the trainee to academic pipeline. As reported by [Cancer Research UK](#), figures from [Advance HE in 2019](#) showed that there were only 85 Black professors within UK higher education institutions (4.6% of all Black faculty, compared with 11.2% of White faculty who hold this position). When disaggregating by gender, [only 25 UK Black professors were women](#).

“ Equality, Diversity and Inclusion (EDI) have been at the forefront of our conversations with Cancer Research UK, accelerated by the launch of CRUK’s first charity-wide [Equality, Diversity and Inclusion \(EDI\) strategy](#) (Jan 2021) and the release of their report on [Diversity Data in Cancer Research UK Grant Funding \(2017-2019\)](#) (Feb 2021). ”

Dr Georgina Binnie-Wright, Postgraduate Programme Manager, MCRC-CRUK Manchester Centre

In 2021, our MCRC-CRUK Manchester Centre Training Office began gathering and analysing further data on applications and appointments made to CRUK-funded postgraduate research programmes in 2019-20 and 2020-21 recruitment. In 2019-20, 28% of our studentships were awarded to ethnic minority groups, increasing to 33% in 2020-21. Appointments to female applicants have increased from 72% in 2019-20 to 78% in 2020-21, demonstrating our commitment to tackling attrition in the cancer scientist lifecycle amongst female researchers. We know there is significantly more work to be done, particularly with regard to the appointment and retention of black researchers.

This year we are offering a targeted [Non-Clinical studentship](#) in the area of cancer which includes partial funding from a donor. We are working with the CRUK Barts Centre on further development of our EDI approaches, including a new EDI-focused seminar series with the first session due to be hosted in January 2022. Complementary to other scientific focussed lectures and talks, this series will focus on career-based challenges faced by speakers (who will be of a minority background or group), their views on current EDI issues and progress, and how they see improvements being made – followed by a Q&A/discussion session.

We recognise the excellent work done by postgraduate and postdoctoral researchers in Manchester and beyond, including Dr Julia Morris’ work with [Black in Cancer](#). Black in Cancer was co-founded by Dr Henry Henderson III and Sigourney Bell in 2020 and is designed to strengthen networks and highlight Black excellence in cancer research and medicine, whilst highlighting the lack of diversity in cancer research and health disparities. Julia Morris is a Bioscientist at the Drug Discovery Unit, CRUK Manchester Institute and Co-Director of Mentorship and Outreach at Black in Cancer. She was previously seconded to The Taylor Lab, MCRC.



The Black in Cancer Mentorship Programme has just launched and is supported by CRUK; this connects UK and US-based undergraduates through mentorship with late-stage PhD students, postdocs, group leaders and/or PIs, who are further on in their careers. CRUK are especially proud to support the Black in Cancer Mentorship Program through its potential to result in a real increase in the number of students from a diverse background within CRUK and the broader cancer research community.



BAME staff network group

... because race equality benefits us all

Network Opportunity: BAME Staff Network

The BAME Staff Network Group is a vibrant forum to exchange views and help provide an authoritative voice for BAME staff within the University and its associated group of companies. They have been instrumental in helping the University to shape the direction of Equality and Diversity policy within the University for a number of years. The BAME Staff Network believe that any network group depends on social as well as professional interaction and organise (fairly) regular social events.

Aims of the group

- To promote race equality through active involvement and consultation on the University's strategy, policies and guidance on race equality.
- To monitor and assess the effective implementation of actions created in relation to the Race Equality Charter Mark.
- To campaign and lobby on race equality by preparing submissions to public consultations, public forums and University governing bodies.
- To work closely with other units or centres including the Equality and Diversity Unit and organisations which campaign for race equality in the University, such as the Ahmed Iqbal Ullah Race Relations Centre, the University Students' Union and the Campus Trade Unions.
- To provide the opportunity to share experiences about working at the University.
- To provide support, guidance and signposting where appropriate.
- The full remit of the group can be seen in our Terms of Reference.

Please e-mail BAME.CHAIRS@manchester.ac.uk to add yourself to the meeting or to suggest additional agenda items.

Publications and Papers: Postgraduate Spotlight



Sarah Hindmarch (née Bellhouse), Postgraduate Researcher

Research Group: Health Psychology; Cancer Prevention and Early Detection

PhD Title: Breast cancer risk assessment and screening for young women at high risk: Developing care pathways and assessing feasibility

PhD Supervisors: Prof. David French, Dr Louise Gorman, Dr Sacha Howell

Sarah Hindmarch is a MCRC Town Hall-funded Non-Clinical postgraduate researcher (PGR) working on a PhD in Health Psychology. Her recent, first authored systematic review in *Cancers* was part of their special issue on Risk Assessment for Breast Cancer.

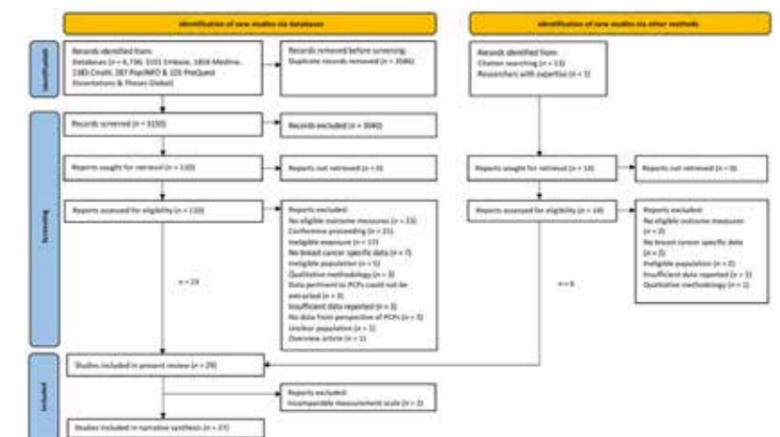
Bellhouse, S.; Hawkes, R. E.; Howell, S. J.; Gorman, L.; French, D. P. Breast Cancer Risk Assessment and Primary Prevention Advice in Primary Care: A Systematic Review of Provider Attitudes and Routine Behaviours. *Cancers* **2021**, 13 (16), 4150. <https://doi.org/10.3390/cancers13164150>.



cancers

Implementing risk-stratified breast cancer screening is being considered internationally. It has been suggested that primary care will need to take a role in delivering this service, including risk assessment and provision of primary prevention advice. This systematic review aimed to assess the acceptability of these tasks to primary care providers. Five databases were searched up to July–August 2020, yielding 29 eligible studies, of which 27 were narratively synthesised. The review was pre-registered (PROSPERO: CRD42020197676).

Primary care providers report frequently collecting breast cancer family history information, but rarely using quantitative tools integrating additional risk factors. Primary care providers reported high levels of discomfort and low confidence with respect to risk-reducing medications although very few reported doubts about the evidence base underpinning their use. Insufficient education/training and perceived discomfort conducting both tasks were notable barriers.



Primary care providers are more likely to accept an increased role in breast cancer risk assessment than advising on risk-reducing medications. To realise the benefits of risk-based screening and prevention at a population level, primary care will need to proactively assess breast cancer risk and advise on risk-reducing medications. To facilitate this, adaptations to infrastructure such as integrated tools are necessary in addition to provision of education.

Publications and Papers: Postdoctoral Spotlight



Research Group: Taylor Lab

Dr Bethany Barnes, Postdoctoral Researcher

Dr Robert Morgan, Clinical Research Training Fellow



Dr Bethany Barnes is a postdoctoral researcher and bioinformatics specialist with the Taylor Lab. Her recent publication in *Genome Medicine* was highlighted by the Division of Cancer Sciences for Gynaecological Cancer Awareness Month on their Twitter page. The paper's authors include Dr Robert Morgan, a specialist medical oncology registrar and Clinical Research Training Fellow with the Taylor Lab, who is interested in deciphering mechanisms of PARP and PARG inhibitor sensitivity using the biobank of patient-derived HGSOC ex vivo cultures.

Barnes, B. M.; Nelson, L.; Tighe, A.; Burghel, G. J.; Lin, I.-H.; Desai, S.; McGrail, J. C.; Morgan, R. D.; Taylor, S. S. Distinct transcriptional programs stratify ovarian cancer cell lines into the five major histological subtypes. *Genome Medicine* 2021, 13 (1), 140. <https://doi.org/10.1186/s13073-021-00952-5>

Background

Epithelial ovarian cancer (OC) is a heterogenous disease consisting of five major histologically distinct subtypes: high-grade serous (HGSOC), low-grade serous (LGSOC), endometrioid (ENOC), clear cell (CCOC) and mucinous (MOC). Although HGSOC is the most prevalent subtype, representing 70–80% of cases, a 2013 landmark study by Domcke et al. found that the most frequently used OC cell lines are not molecularly representative of this subtype. This raises the question, if not HGSOC, from which subtype do these cell lines derive? Indeed, non-HGSOC subtypes often respond poorly to chemotherapy; therefore, representative models are imperative for developing new targeted therapeutics.

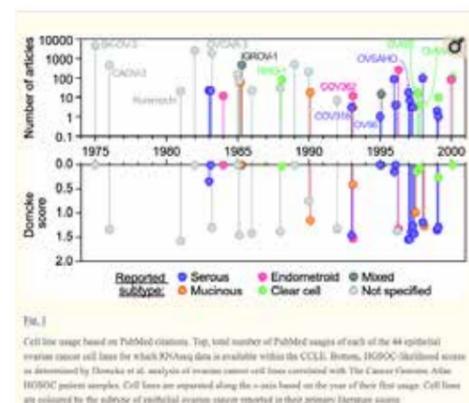
Methods

Non-negative matrix factorisation (NMF) was applied to transcriptomic data from 44 OC cell lines in the Cancer Cell Line Encyclopedia, assessing the quality of clustering into 2–10 groups. Epithelial OC subtypes were assigned to cell lines optimally clustered into five transcriptionally distinct classes, confirmed by integration with subtype-specific mutations. A transcriptional subtype classifier was then developed by trialling three machine learning algorithms using subtype-specific metagenes defined by NMF. The ability of classifiers to predict subtype was tested using RNA sequencing of a living biobank of patient-derived OC models.

Results

Application of NMF optimally clustered the 44 cell lines into five transcriptionally distinct groups. Close inspection of orthogonal

datasets revealed this five-cluster delineation corresponds to the five major OC subtypes. This NMF-based classification validates the Domcke et al. analysis, in identifying lines most representative of HGSOC, and additionally identifies models representing the four other subtypes. However, NMF of the cell lines into two clusters did not align with the dualistic model of OC and suggests this classification is an oversimplification. Subtype designation of patient-derived models by a random forest transcriptional classifier aligned with prior diagnosis in 76% of unambiguous cases. In cases where there was disagreement, this often indicated potential alternative diagnosis, supported by a review of histological, molecular and clinical features.



Conclusions

This robust classification informs the selection of the most appropriate models for all five histotypes. Following further refinement on larger training cohorts, the transcriptional classification may represent a useful tool to support the classification of new model systems of OC subtypes.

Publications and Papers

With thanks to those who submitted research publications between 2020-21, we would welcome news of additional publications for our Spring/Summer 2022 Newsletter.



Research Group: Breast Biology

Tom Kedward, Postgraduate Researcher
Joseph Parsons, Postgraduate Researcher
Dr Simon Timbrell, Previous MD Medicine Researcher

Dr Aoife Kilgallon, Previous MD Medicine Researcher, Now Research Scientist, ONK Therapeutics, County Galway, Ireland

Dr Alice Greenhalgh, Previous Postgraduate Researcher

Dr Bruno Simões, Postdoctoral Researcher



Smith, M. P.; Ferguson, H. R.; Ferguson, J.; Zindy, E.; Kowalczyk, K. M.; Kedward, T.; Bates, C.; Parsons, J.; Watson, J.; Chandler, S.; Fullwood, P.; Warwood, S.; Knight, D.; Clarke, R. B.; Francavilla, C. Reciprocal priming between receptor tyrosine kinases at recycling endosomes orchestrates cellular signalling outputs. *The EMBO Journal* 2021, 40 (14), e107182. <https://doi.org/10.15252/embj.2020107182>

Timbrell, S.; Aglan, H.; Cramer, A.; Foden, P.; Weaver, D. T.; Pachter, J.; Kilgallon, A.; Clarke, R. B.; Farnie, G.; Bundred, N. J. Focal Adhesion Kinase inhibition in combination with paclitaxel reduces breast cancer stem cell activity in triple negative breast cancer. *NPJ Breast Cancer* 2021, 7 (65). <https://doi.org/10.1038/s41523-021-00263-3>

Bach, K.; Pensa, S.; Zarocsinceva, M.; Kania, K.; Stockis, J.; Pinaud, S.; Lazarus, K. A.; Shehata, M.; Greenhalgh, A. R.; Simões, B. M.; Howell, S. J.; Clarke, R. B.; Caldas, C.; Halim, T. Y. F.; Marioni, J. C.; Khaled, W. T. Time-resolved single-cell analysis of Brca1 associated mammary tumorigenesis reveals aberrant differentiation of luminal progenitors. *Nature Communications* 2021, 12 (1), 1502. <https://doi.org/10.1038/s41467-021-21783-3>

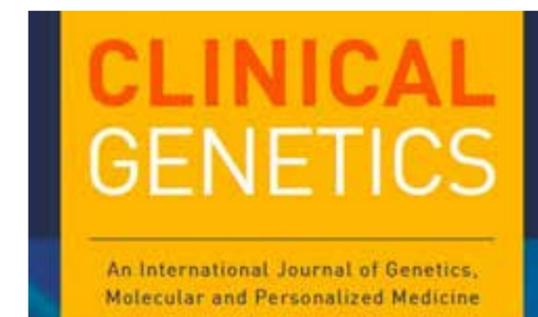
Research Group: Cancer Prevention and Early Detection



Dr Nicola Flaum, Clinical Research Training Fellow

Dr Elke M. van Veen, Previous Postgraduate Researcher and Postdoctoral Researcher, Now Postdoctoral Researcher at Radboud University Medical Center, Nijmegen, Netherlands

Flaum, N.; van Veen, E. M.; Smith, O.; Amico, S.; Newman, W. G.; Crosbie, E. J.; Edmondson, R.; Smith, M.; Evans, D. Dominant-negative pathogenic variant BRIP1 c. 1045G >C is a high-risk allele for non-mucinous epithelial ovarian cancer: A case-control study. *Clinical Genetics* 2021. <https://dx.doi.org/10.1111/cge.14068>





Research Group: Endometrial Cancer (Team Womb)

Dr Chloe Barr, Clinical Research Training Fellow
Dr Eleanor Jones, Clinical Research Training Fellow
Dr Kelechi Njoku, Clinical Research Training Fellow
Dr Yee-Loi Wan, NIHR Academic Clinical Lecturer in Gynaecological Oncology
Dr Neil Ryan, Honorary Lecturer, University of Bristol and Obstetrics and Gynaecology SpR, Previous Clinical Research Training Fellow

Behrouzi, R.; Barr, C. E.; Crosbie, E. J. HE4 as a Biomarker for Endometrial Cancer. *Cancers* **2021**, 13 (19), 4764. <https://doi.org/10.3390/cancers13194764>

Barr, C. E.; Njoku, K.; Hotchkies, L.; Ryan, N. A. J.; Wan, Y. L.; Davies, D. A.; Razvi, S.; Crosbie, E. J. Does Clinical and Biochemical Thyroid Dysfunction Impact on Endometrial Cancer Survival Outcomes? A Prospective Database Study. *Cancers* **2021**, 13 (1), 5444. <https://doi.org/10.3390/cancers13215444>

Njoku, K.; Chiasserini, D.; Geary, B.; Pierce, A.; Jones, E.R.; Whetton, A. D.; Crosbie, E. J. Comprehensive Library Generation for Identification and Quantification of Endometrial Cancer Protein Biomarkers in Cervico-Vaginal Fluid. *Cancers* **2021**, 13, 3804. <https://doi.org/10.3390/cancers13153804>

Njoku, K.; Ramchander N, Wan, Y. L.; Barr C. E.; Crosbie, E. J. Impact of pre-treatment systemic markers of inflammation on endometrial cancer survival: A prospective database analysis. *Gynecologic Oncology* **2021**. Paper accepted for publication.

Ryan, N. A. J.; Snowsill, T.; McKenzie, E.; Monahan, K. J.; Nebgen D. Should women with Lynch syndrome be offered gynaecological cancer surveillance? *BMJ* **2021**, 2 (374), n2020. <https://doi.org/10.1136/bmj.n2020>

Research Group: Manchester Cancer and Thrombosis (MCAT)



Dr Emma Blower, Clinical Research Training Fellow
John Castle, Research Associate

Castle, J.; Blower, E.; Kirwan, C. Update On The Role Of Circulating Tumour Cells In Cancer-Associated Thrombosis. *Thrombosis Update* **2021**, 5, 100066. <https://doi.org/10.1016/j.tru.2021.100066>

Blower, E.; Castle, J.; Santiago-Gomez, A.; Clarke R.; Kirwan, C. A Hypercoagulant Tumour Microenvironment Promotes Breast Cancer Progression, with Effects Inhibited by Anticoagulants. *Journal of Pathology* **2021**, 255, S4-S. <https://doi.org/10.1016/j.ejso.2021.03.198>

Research Group: PRECISE



Dr Amy Chadwick, Postdoctoral Researcher
Bethany Rothwell Postgraduate Researcher

Rothwell, B. C.; Kirkby, N. F.; Merchant, M. J.; Chadwick, A. L.; Lowe, M.; Mackay, R. I.; Hendry, J. H.; Kirkby, K. J. Determining the parameter space for effective oxygen depletion for FLASH radiation therapy. *Physics in Medicine & Biology* **2021**, 66 (5), 055020. <https://doi.org/10.1088/1361-6560/abe2ea>



Research Group: Targeted Therapy

Dr Urszula Cytlak-Chaudhuri, Postdoctoral Researcher



Cytlak, U. M.; Dyer, D. P.; Honeychurch, J.; Williams, K. J.; Travis, M. A.; Illidge, T. M. Immunomodulation by Radiotherapy in Tumour Control and Normal Tissue Toxicity. *Nature Reviews Immunology* **2021**. <https://doi.org/10.1038/s41577-021-00568-1>



Research Group: Taylor Group

Dr Bethany Barnes, Postdoctoral Researcher
Dr Daniel Bronder, Previous Postgraduate Researcher, Now Postdoctoral Fellow, Memorial Sloan Kettering Cancer Center
Dr Robert Morgan, Clinical Research Training Fellow

Coulson-Gilmer, C.; Morgan, R. D.; Nelson, L.; Barnes, B. M.; Tighe, A.; Wardenaar, R.; Spierings, D.; Schlecht, H.; Burghel, G. J.; Foijer, F.; Desai, S.; McGrail, J. C.; Taylor, S. S. Replication catastrophe is responsible for intrinsic PAR glycohydrolase inhibitor-sensitivity in patient-derived ovarian cancer models. *Journal of Experimental & Clinical Cancer Research: CR* **2021**, 40 (1), 323. <https://doi.org/10.1186/s13046-021-02124-0>

Bronder, D.; Tighe, A.; Wangsa, D.; Zong, D.; Meyer, T. J.; Wardenaar, R.; Minshall, P.; Hirsch, D.; Heselmeyer-Haddad, K.; Nelson, L.; Spierings, D.; McGrail, J. C.; Cam, M.; Nussenzweig, A.; Foijer, F.; Ried, T.; Taylor, S. S. TP53 Loss Initiates Chromosomal Instability in Fallopian Tube Epithelial Cells. *Disease Models & Mechanism* **2021**. <https://doi.org/10.1242/dmm.049001>

Research Group: Translational Radiobiology



Rekaya Shabbir, Postgraduate Researcher
Dr Jim Zhong, Leeds-Manchester Clinical Research Training Fellow (University of Leeds)

Shabbir, R.; Mingarelli, M.; Cabello, G.; Herk, M.; D, T. A. Smith EGFR Targeting of [177Lu] Gold Nanoparticles to Colorectal and Breast Tumour Cells: Affinity, Duration of Binding and Growth Inhibition of Cetuximab-Resistant Cells. *Journal of King Saud University – Science* **2021**, 33 (7), 101573. <https://doi.org/10.1016/j.jksus.2021.101573>

Zhong, J.; Slevin, F.; Scarsbrook, A. F.; Serra, M.; Choudhury, A.; Hoskin, P. J.; Brown, S.; Henry, A. M. Salvage Reirradiation Options for Locally Recurrent Prostate Cancer: A Systematic Review. *Frontiers in Oncology* **2021**, 11, 681448. <https://doi.org/10.3389/fonc.2021.681448>

Posters and Presentations: Postgraduate Spotlight



Research Group: Manchester Cancer and Thrombosis (MCAT)

Dr Emma Blower, Clinical Research Training Fellow

PhD Title: Investigation of the Procoagulant Tumour Microenvironment in Breast Cancer

PhD Supervisors: Prof. Cliona Kirwan, Prof. Robert Clarke, Dr Angelica Santiago-Gomez

Dr Emma Blower has delivered numerous presentations this year, as well as posters on 'Targeting the procoagulant tumour microenvironment in breast cancer' at the 10th International Conference on Thrombosis and Hemostasis Issues in Cancer (ICTHIC), April 2021 and 'Rivaroxaban targets the procoagulant tumour microenvironment in vitro and thereby inhibits breast cancer progression' at the San Antonio Breast Cancer Symposium, December 2021.

Emma's PhD investigates the effects of the extrinsic clotting system and Rivaroxaban on breast cancer in a comprehensive bench-to-bedside workflow. In her research, in vitro studies will determine the effects of procoagulant CAFs on cancer cell proliferation, migration and invasion. In vivo studies will use cell lines and patient derived samples (PDX) in mouse models to investigate tumour growth and identify novel biomarkers of tumour response, in a procoagulant and anticoagulant (Rivaroxaban) setting. These biomarkers will be validated in archived clinical specimens from the TIP trial.



Emma delivered additional oral presentations at the following conferences:

Surgical Research Society Annual Meeting, March 2021

'Hypercoagulant Fibroblasts Promote Breast Cancer Progression, with Effects Inhibited by Anticoagulants, including Repurposed Direct Oral Anticoagulant Drugs'

Manchester Medical Society, Section of Surgery, March 2021

'Hypercoagulant fibroblasts promote breast cancer progression, with effects inhibited by anticoagulants'

Association of Breast Surgery Conference, May 2021

'A hypercoagulant tumour microenvironment promotes breast cancer progression, with effects inhibited by anticoagulants'

Manchester Pathology 2021 Conference, July 2021

'A Hypercoagulant Tumour Microenvironment Promotes Breast Cancer Progression, with Effects Inhibited by Anticoagulants, including Repurposed Direct Oral Anticoagulant Drugs' (invited oral presentation)

British Association of Surgical Oncology Annual Conference, November 2021

'Rivaroxaban targets procoagulant fibroblasts in the tumour microenvironment to reduce cancer cell migration and stem cell activity'



Posters and Presentations: Postdoctoral Spotlight



Research Group: Advanced Radiotherapy

Dr Abigail Bryce-Atkinson, Postdoctoral Researcher

Abigail is a Research Associate in the Advanced Radiotherapy Group at The University of Manchester. She completed her PhD in 2020, which was focussed on optimising CBCT image guidance for paediatric radiotherapy.

UK Imaging & Oncology Congress, June 2021

Dr Abigail Bryce-Atkinson opened day 3 of the UK Imaging & Oncology Congress with a talk on 'Optimising CBCT - lowering dose and improving image quality' as part of the event's 'Clinical oncology: Image optimisation in radiotherapy' panel.

Abigail was also part of a short paper presentation on 'An atlas for paediatric craniofacial growth and development in childhood cancer survivors' with Siena Monaghan and Dr Marianne Aznar.

Abigail's postdoc is part of the BRAINatomy project funded by [Stand up to Cancer \(SU2C\)](#) and [Cancer Research UK](#), which aims to develop an anatomical atlas of neuroradiation damage after childhood radiotherapy. Her work includes collaboration with the [University Medical Centre Groningen](#) (The Netherlands) and [St. Jude Children's Research Hospital](#) (Memphis, USA), led by Dr Martin McCabe (The University of Manchester) and Dr Thomas Merchant (St Jude Children's Research Hospital). St. Jude have world-leading data collection on the long-term follow up of children treated with radiotherapy.

Clinical oncology
Image optimisation
in radiotherapy

Wednesday 9 June, 09:00-10:00

Posters and Presentations:



Research Group: Advanced Radiotherapy

Amerah Alshamrani, RadNet-affiliated Research Radiographer

PhD Title: Adaptive radiotherapy for cervical cancer

PhD Supervisors: Dr Cynthia Eccles, Dr Marianne Aznar, Prof Peter Hoskin, Dr Robert Chuter

Dr Kathryn Banfill, Clinical Research Training Fellow

PhD Title: Avoiding cardiac toxicity in lung cancer patients treated with curative-intent radiotherapy to improve survival

PhD Supervisors: Prof. Corinne Favre-Finn, Prof. Marcel van Herk, Dr Alan Mcwilliam

ESTRO, August 2021

Amerah Alshamrani presented a poster on 'The association between radiotherapy doses to bone marrow and fatigue in prostate cancer' at ESTRO.

European Lung Cancer Virtual Conference (ELCC), March 2021;

British Thoracic Oncology Group (BTOG) Conference, April 2021;

ESTRO, August 2021

Kathryn Banfill presented at the European Lung Cancer Virtual Conference (ELCC), March 2021, the British Thoracic Oncology Group (BTOG) Conference, April 2021 and ESTRO, August 2021.

Research Group: Cancer Prevention and Early Detection



Niall Mahon, Postgraduate Researcher

PhD Title: Designing functional 3D scaffolds for cancer early detection

PhD Supervisors: Prof. Alberto Saiani, De Elena Bichenkova, Dr Olga Tsigkou

The Early Detection of Cancer Conference 2021, Cancer Research UK, October 2021

Niall Mahon's poster was accepted and shown at Cancer Research UK's recent Early Detection of Cancer Conference, October 2021.



Research Group: Health Psychology; Cancer Prevention and Early Detection

Sarah Hindmarch (née Bellhouse),

Postgraduate Researcher

PhD Title: Breast cancer risk assessment and screening for young women at high risk: Developing care pathways and assessing feasibility

PhD Supervisors: Prof. David French, Dr Louise Gorman, Dr Sacha Howell

35th Annual Conference of the European Health Psychology Society, August 2021

Sarah Hindmarch delivered a presentation on 'Optimising the delivery of breast cancer risk estimates to women aged 30-39 years'



Research Group: Manchester Cancer and Thrombosis (MCAT)

John Castle, Research Associate

Hadiyat Ogunlayi, MB-PhD Student

Urvashi Singh, Previous MRes Translational Medicine Student

10th International Conference on Thrombosis and Hemostasis Issues in Cancer (ICTHIC), April 2021

John Castle presented a poster on 'Potential for new trial endpoint: success of functional mammosphere assay in Thrombin Inhibition Preoperatively (TIP) trial in early breast cancer'. Urvashi Singh's poster was on 'The relationship between the coagulation and inflammatory phases of wound healing in early breast cancer'.

Manchester Pathology 2021 Conference, July 2021

John Castle delivered an invited oral presentation on 'CHAMPion and WiSDen Studies: Investigating the relationship between a stromal wound healing phenotype and breast density'.

Alderley Park 3Rs Poster Prize Event, September 2021

Hadiyat Ogunlayi had a poster on 'Utilising residual breast tissue samples from patients undergoing therapeutic mastectomies to study the relationship between a stromal wound healing phenotype and breast density as a mechanism for breast cancer development'.

Research Group: PRECISE



Bethany Rothwell, Postgraduate Researcher

PhD Title: Closing the loop: understanding the parameter space for FLASH proton therapy

PhD Supervisors: Prof. Karen Kirkby, Dr Amy Chadwick, Prof. Norman Kirby, Dr Michael Merchant

Greater Manchester Cancer: Virtual Cancer Week, May 2021

The aim of Greater Manchester Cancer's Virtual Cancer Week was to bring together cancer service and research communities with service users and the general public of GM. As part of GM Virtual Cancer Week, Bethany Rothwell led the Proton Beam Therapy Show & Tell session on FLASH.

Particle Therapy Co-Operative (PTOG) Conference, June 2021

Bethany delivered a proffered talk on 'Can we optimise proton PBS delivery to give sufficient O2 depletion for FLASH?' at the Particle Therapy Co-Operative Group (PTOG) Conference, June 2021.

Radiation Research Society's Annual Meeting, October 2021

Bethany also delivered a twenty-five-minute invited talk on 'Determining the parameter space for FLASH' at the Radiation Research Society's 2021 Annual Meeting, October 2021.

Researcher Engagement: Charity

Cancer Research UK Race for Life



Research Group: Advanced Radiotherapy
Dr Kathryn Banfill, Clinical Research Training Fellow

PhD Title: Avoiding cardiac toxicity in lung cancer patients treated with curative-intent radiotherapy to improve survival

PhD Supervisors: Prof. Corinne Favre-Finn, Prof. Marcel van Herk, Dr Alan McWilliam

Dr Kathryn Banfill ran the Race for Life in October with her eight-year-old son (both pictured above). She raised £230 + £52.50 in gift aid for Cancer Research UK.



Cancer Research UK Run 60 Miles Challenge



Research Group: Genome Stability Lab

Melanie Seaton, Postgraduate Researcher



PhD Title: Developing cellular micromotors to improve ovarian cancer management

PhD Supervisors: Dr Christine Schmidt, Prof. Richard Edmondson, Prof. Daniel Brison, Prof. Stephen Taylor

Melanie Seaton ran the Cancer Research UK Run 60 Miles Challenge in memory of her aunt, Liz Challoner, who had ovarian cancer. This involved running 60 miles during September, which Melanie completed by running 2 miles every day. She raised £2,018.58 + £212 in gift aid for Cancer Research UK.



Gynaecological Cancer Awareness Month



Research Group: Endometrial Cancer (Team Womb)

Dr Kathryn Baxter, MD Medicine Researcher

MD Medicine Research Title: Predicting outcomes to primary treatment in advanced ovarian cancer
MD Medicine Research Supervisors: Prof. Richard Edmondson, Dr Gemma Owens

Dr Helen Clarke, Clinical Research Training Fellow

PhD Title: Defining the feasibility and molecular impact of total diet replacement in endometrial and breast cancer prevention.

PhD Supervisors: Dr Sacha Howell, Prof. Robert Clarke, Prof. Emma Crosbie, Dr Michelle Harvie, Prof. Anthony Howell

Dr Jennifer Davies-Oliveira, Clinical Research Training Fellow

PhD Title: Urinary HPV testing for cervical cancer screening

PhD Supervisors: Prof. Emma Crosbie, Prof. Tanya Walsh

Dr Eleanor Jones, Clinical Research Training Fellow

PhD Title: 'Developing Tests for Endometrial Cancer deTection (DETECT)'

PhD Supervisors: Prof. Emma Crosbie, Prof. Richard Edmondson, Dr Jamie Sergeant

Dr Vanitha Sivalingam, NIHR Academic Clinical Lecturer in Gynaecological Oncology



Peaches Womb Cancer Trust

is a charity founded in 2020 by researchers, doctors and nurse based at St. Mary's Hospital and working alongside Prof. Emma Crosbie. The charity includes cancer-focused postgraduate and postdoctoral researchers.

For Gynae Cancer Awareness Month, members of Team Ovary, Team Womb and Team Vulva hosted a gynae cancer-themed bake sale, which raised £220.76 + £29.24 in gift aid for Peaches Womb Cancer Trust.

Peaches Womb Cancer Trust have been hosting a range of other events. This includes 'Walking for Wombs' awareness presentation to companies, such as to UK GSK employees.

They ran a 'Living Well with Endometrial Cancer' information afternoon that aimed to support patients who are going through or have gone through womb cancer treatment.



Stockport Relay for Life



Research Group: Manchester Cancer and Thrombosis (MCAT)

John Castle, Research Associate

Stockport Relay for Life is a 24-hour community festival celebrating year-round fundraising for Cancer Research UK. The Stockport Manchester Scientists Relay team includes scientists from across the MCRC and CRUK Manchester Institute, friends and family. On 25 September 2021, the first in-person Relay event in two years took place at Stockport Harriers Track, Woodbank Park. The event included fundraising, fancy dress cancer awareness laps, performances and a Candle of Hope ceremony.

This is one of Stockport's largest volunteering fundraising events, having raised over £600,000 since 2006, and John Castle has been part of the Stockport Relay Manchester Scientists team since 2015.

Thinking about your next challenge for 2022?

As part of next year's fundraising, you could join the team! It would be great to have a strong showing for Relay fundraising, so please let john.castle@manchester.ac.uk know if you would like to take part.

The 2022 event will be held on 9th-10th July at the Stockport Harriers Track, Woodbank Park.



Researcher Engagement: Teaching and Widening Participation



Research Group: Diabesity and Cancer Research Group

Nadin Hawwah, MB-PhD Student

PhD Title: Adolescent and adulthood BMI and Cancer risk using obese-year metrics (ABACus 2)

PhD Supervisors: Prof. Andrew Renehan, Dr Glen Martin, Dr Matthew Sperrin

Nadin Hawwash began working as a University of Manchester Widening Participation Fellow in Medicine in 2020, a role she is continuing this year. She designed and delivered workshops on 'Why Study Medicine?' and 'How to Save a Life', which were published on The University of Manchester's ['Talks' for Secondary](#). The latter workshop was designed for KS3/4 students and aimed to use first aid training learning to introduce school age students to studying Medicine.

Nadin also hosted a Plant a Seed series which targeted Year 9-12 students from cold spot areas which will be available on the [Greater Manchester Higher webpage](#).



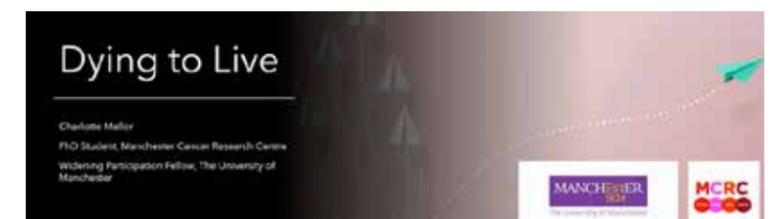
Research Group: Manchester Breast Centre

Charlotte Mellor, Postgraduate Researcher

PhD Title: Defining the Bcl-2 family interactome to optimise breast cancer cell response to chemotherapy

PhD Supervisors: Dr Andrew Gilmore, Prof. Keith Brennan, Prof. Robert Clarke, Dr Sacha Howell

Charlotte Mellor began working as a University of Manchester Widening Participation Fellow in Medicine last year. As part of this role, she recorded a talk on Why Study Medical Biochemistry and hosted a virtual workshop (with worksheet) for KS5 pupils on 'Biology – Dying to Live'. Her supporting lesson plan and worksheet can be downloaded on the University of Manchester's [Talks for Secondary Students webpage](#).



The University of Manchester advertises annually for paid Widening Participation Fellows. The Faculty of Science and Engineering contact is [Emma Lewis-Kalubowila](#). The Faculty of Biology, Medicine and Health contact is [Sophie Flieshman](#). This year's deadline was Sunday 24 October 2021.

The MCRC would be grateful if Widening Participation Fellows could inform us of their prior or forthcoming widening participation activities by contacting MCRCTraining@manchester.ac.uk.

Achievements and Awards



Research Group: Advanced Radiotherapy

Dr Kathryn Banfill, Clinical Research Training Fellow

PhD Title: Avoiding cardiac toxicity in lung cancer patients treated with curative-intent radiotherapy to improve survival

PhD Supervisors: Prof. Corinne Favre-Finn, Prof. Marcel van Herk, Dr Alan McWilliam

Dr Kathryn Banfill was nominated for the [NIHR CRN Greater Manchester's Evening of Excellence 2021](#). Following the judging process, her efforts were selected to feature in the category: Trailblazers in COVID-19 research response. Winners were not selected for the Evening of Excellence and instead each successful nominee in the 11 categories were recognised in equal measure at the CRN Greater Manchester's Evening of Excellence online celebration ceremony on 18 November 2021.



Kathryn was also awarded the British Thoracic Oncology Group (BTOG) 2021 abstract prize for her poster at the BTOG conference in April 2021. Her poster (pictured below) details her research with Prof. Corinne Favre-Finn and Dr Gareth Price on investigating changes in radiotherapy services during COVID-19. Kathryn's work on COVID-RT Lung first analysis has been accepted for publication in RCR Clinical Oncology.

Changes in management for patients with lung cancer referred for radical radiotherapy during the first wave of the COVID-19 pandemic in the UK (COVID-RT Lung)

Introduction
In response to the COVID-19 pandemic, guidelines on reduced fractionation for patients with lung cancer treated with curative-intent radiotherapy (RT) were published¹ aiming to reduce the number of hospital attendances and potential exposure of vulnerable patients to SARS-CoV-2. Here we describe the changes that have taken place.

Methods
Ongoing multicentre UK audit. Inclusion criteria:
• All patients with stage I-III lung cancer
• Referred for radical radiotherapy 2nd April to 2nd October 2020
• Patients who had a change in their management and those who continue with standard management
Each participating centre obtains local approval to collect data. Anonymised data are collected on a central, cloud-based Research Electronic Data Capture system.

Results
• 1551 records from 30 UK oncology centres available for analysis on 17/3/2020
• 759 females (49%), median age 72 years (37–93)
• 527 patients (34%) had their treatment changed from their centre's standard of care (table 1)

Change in Management	Stage 1-2	Stage 3
Different radiotherapy dose/fractionation	145	110
Radiotherapy instead of surgery	84	17
Chemotherapy omitted	9	69
Chemotherapy reduced	11	59
Watch and Wait	26	2
Best supportive care	1	2
PCI omitted	0	4
SABR rather than RFA	2	0

Regional Differences in Treatment changes
North West of England had the highest proportion of patients who had their treatment changed from their centre's standard of care (48%) (Figure 1).

Changes to Diagnostic Investigations
• 193 patients (12%) had changes to their diagnostic investigations (table 2)

Change to Diagnostic Investigations	Patients
Histology not obtained	66 (4.3%)
No nodal sampling	38 (2.5%)
No pulmonary function tests	29 (1.9%)
No brain imaging	32 (2.1%)
No PETCT or PETCT out of date	50 (3.2%)
Delays in diagnosis	11 (0.7%)

COVID diagnosis
• 33 patients (2%) diagnosed with COVID
• Median age 69 (50-85 years)
• 25 swab PCR confirmed
• 9/33 from treatment changed group
• 3/6 patients diagnosed during treatment had RT interruption

Conclusions
34% of patients referred for radical radiotherapy for lung cancer between April and October 2020 had their treatment changed from their centre's standard of care as a result of the COVID-19 pandemic in the UK.
NW, NE England and Wales had the highest percentage of patients who had changes to their treatment.
Changes to treatment occurred more frequently in patients with good performance status.
Increase in hypofractionated and ultra-hypofractionated radiotherapy schedules during COVID-19 pandemic.

Reference
1. Favre-Finn et al., Reduced fractionation in lung cancer patients treated with curative-intent radiotherapy during the COVID-19 pandemic. Clin. Oncol., 32, pp. 489–490, 2020, doi: 10.1016/j.clon.2020.05.001.



Research Group: Breast Biology



Dr Hannah Harrison, Postdoctoral Researcher

Dr Hannah Harrison was awarded a grant from the [National Centre for the Replacement Refinement & Reduction of Animals in Research](#)

(NC3Rs) co-funded with Cancer Research UK which commenced in July 2021 for £75,381. In her work on 'Replacing in vivo models with the Quasi vivo system to investigate metastatic site priming by tumour cells', Hannah will take up and adapt an in vitro method from her collaborators at the University of Pisa to investigate signalling events that prime secondary tumour formation during metastasis. She will co-culture breast cancer cells with other cell types from major sites of breast cancer metastasis, including bone, liver and lung cells, which are cultured in separate

chambers with media flowing constantly through the whole system.

This method will replace some in vivo experiments in Hannah's research where mice are injected with cancer cells to study metastasis by determining where secondary tumours develop in the animal. This year, NC3Rs awarded the largest number of Skills and Knowledge Transfer grants to date, including one award co-funded with Cancer Research UK, which was awarded to Hannah. The NC3Rs' Skills and Knowledge Transfer grants aim to tackle the lag in uptake of 3Rs methods by enabling their exchange between research groups.



Research Group: Adaptive Radiotherapy

Dr Andrew Green, Postdoctoral Research Fellow Edward Henderson, Postgraduate Researcher Donal McSweeney, Postgraduate Researcher

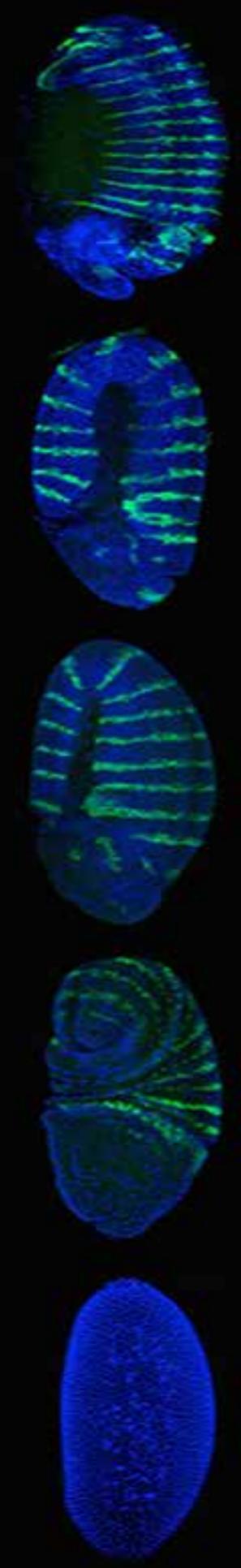
Andrew Green, Edward Henderson and Donal McSweeney submitted a solution to The Medical Image Computing and Computer Assisted Intervention Society's (MICCA's) challenge to build a model to automatically segment organs in the abdomen. The challenge had several assessment criteria and they came in the top five out of approximately one hundred entries. They were invited to present their solution at the MICCA Conference, October 2021, where they placed fourth overall. They are now co-authors on the challenge paper which is currently under review with *Nature Communications*.

Research Group: Breast Biology

Dr Angélica Santiago-Gómez, Postdoctoral Researcher

Angélica Santiago-Gómez was guest editor for a *Frontiers in Oncology* issue comprising nine papers focusing on 'Revisiting Seed and Soil: A New Approach to Target Hibernating Dormant Tumor Cells'.





Research Group: Cancer Prevention and Early Detection

Dr Nicola Flaum,
Clinical Research Training Fellow

PhD Title: Assessment of inherited predisposition to non-mucinous epithelial ovarian cancer

PhD Supervisors: Prof. Gareth Evans, Prof. Emma Crosbie, Prof. Richard Edmondson, Dr Miriam Smith

In July 2021, Nicola Flaum won the Division of Evolution, Infection and Genomic Science's best presentation prize. Her presentation was a flashtalk entitled, 'A whirlwind tour of ovarian cancer genetics, risk prediction, and what we can do with it. She was praised for her presentation skills and presenting her entire PhD on one slide! Nicola's PhD investigates assessment of inherited predisposition to non-mucinous epithelial ovarian cancer.

Research Group: Diabetes and Cancer Research



Dr Corinna Slawinski, Clinical Research Training Fellow

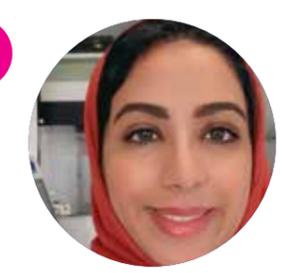
PhD Title: Dose reductions, toxicities and survival in patients with excess weight undergoing adjuvant chemo-radiotherapy for colon and rectal cancers: individual patient data (IPD) secondary analyses of consortium trials and causal inference modelling

PhD Supervisors: Prof. Andrew Renehan, Dr Jorge Barriuso, Dr Hui Guo

The Association of Coloproctology of Great Britain and Ireland's (ACPGBI's) Annual Meeting, July 2021

Corinna Slawinski was awarded a prize as part of the '12 presentations for the best posters' section at The Association of Coloproctology of Great Britain and Ireland's (ACPGBI's) annual meeting, July 2021. Her poster was titled 'Average cumulative relative dose (ACRD) of adjuvant chemotherapy is more important than average relative dose intensity (ARDI) for survival in colorectal cancer, with potential implications for treating patients with an elevated body mass index (BMI): an individual participant data (IPD) meta-analysis within the OCTOPUS consortium'.

Research Group: Diabetes and Cancer Research



Rekaya Shabbir, Postgraduate Researcher

PhD Title: Genomic profiling of hypoxia in bladder cancer cell lines and its treatment modification in vitro and in vivo using gold nanoparticles (AuNPs)

PhD Supervisors: Dr Tim Smith, Prof. Ananya Choudhury, Prof. Catharine West

Rekaya Shabbir was awarded a best presentation prize at the XV. International Conference on Radiation Oncology, Radiobiology and Medical Physics 2021 for her work titled 'Tumour Radionuclides Therapy: in vitro and in vivo Dose Distribution Study'.

She was also awarded and added to the Saudi Arabia Cultural Bureau's Honor Board in the UK 2021. The Cultural Attaché at the Embassy of the Kingdom of Saudi Arabia in London record and document the excellence of Saudi scholarship students and the Saudi Arabian Honor Board communicates with The Cultural Attaché to record student academic excellence, research achievement and creative contributions in their scientific specialisations.

Rekaya's name is listed in their Academic and Research Excellence, Conferences, and Prizes section available [here](#). Prior to joining the MCRC, Rekaya was awarded the Best 1st Year Talk on 'Overcoming A Research Challenge' at the University of Aberdeen's annual Postgraduate Research Conference.



Shabnam Thapa, Marie Curie ITN Early Stage Researcher

PhD Title: Value of benefit from a new cancer treatment: clinical complete response and avoidance of major surgery in rectal cancer (ValCoRe)

PhD Supervisors: Prof. Andrew Renehan, Prof. Katherine Payne

Division of Population Health, Health Services Research and Primary Care Postgraduate Researcher Showcase, September 2021

Shabnam Thapa won the judge's 1st year PhD student presentation prize at the Division of Population Health, Health Services Research and Primary Care postgraduate researcher showcase in September 2021. The judges commented that this was 'a very confidently delivered presentation that was timed perfectly' and that the 'research was succinctly and well-explained'. Overall this was deemed a 'really interesting presentation'.

A Day in the Life... Research Team Showcase

In each issue, we invite current postgraduate and postdoctoral researchers to introduce us to a day (or night!) in the life of their research group. Contributions can be written by multiple authors and are designed to introduce other trainees and staff to their research area.



Research Group: PRECISE

Jack Aylward, Postgraduate Researcher
PhD Title: Delivering and Measuring Flash Radiotherapy
PhD Supervisors: Prof. Karen Kirkby, Prof. Randal Mackay, Dr Michael Taylor

"On the night of 25th February members of the University of Manchester PRECISE group and The Christie Medical Physics and Engineering set out to deliver the first Ultra-High Dose Rate (UHDR) proton beams into the Stoller Research Room of the Proton Beam Therapy Centre. This was in preparation for FLASH experiments. With dose rates of up to 150 Gy/s being delivered radiation protection was the primary concern and so the objective of the night was to complete a radiation survey under the expert leadership of Mark Hardy (RPA). The group carry out work in the Proton Centre research room at night because the proton beam is used by The Christie to treat patients with radiotherapy during the daytime

The night started with setting up the room: A water tank was placed in the beam to be used as a beam stop, with the Bragg peak being deposited in the middle of the tank. Large



Borated polyethylene: The start of the night was quite boring while we were waiting for the beam

white, and extremely heavy, sheets of borated polyethylene were positioned in front of some of the electronic equipment inside the bunker and could be moved later to positions along the maze to determine their effects on the dose rate at the maze entrance.

After an initial radiation safety briefing from Mark we were all set and raring to go. He informed us that the main concern from a radiation protection point of view would be the activation of the water in the tank, and the high neutron flux down the maze while the beam was on. At that point, the group unanimously decided that Mark was to be the person to take the dose rate measurements at the maze entrance.



Extent of the controlled area on L1

We extended the controlled area to include the corridors surrounding the research room, as well as some rooms above and below the maze where the dose rate may exceed the legal limit. Once everything was in place we sat down at the control workstation and requested the first UHDR beam from the cyclotron. After a dramatic countdown the words "Ah ... interlock ..." were the only sound from the engineer's workstation. But following some quick troubleshooting from Andy and Richard we were ready for another attempt which was successful. We started 'gently' at a mere 30 Gy/s in the centre of the beam spot, and were able to deliver our first Ultra-High Dose Rate beam at 0:22 on Friday 26th February (245 MeV, 200 nA, ~3 seconds).



First UHDR proton beam

The first beam was recorded using EBT3 Gafchromic film placed at the entrance window of the water tank. The film needed removing before the survey began and the water in the tank became too activated. As I went to unstick the film my Electronic Portal Dosimeter – set to alarm at 7.5 $\mu\text{Sv/hr}$ (photons) – was merrily singing away which encouraged me to work calmly and quickly.

The night then progressed to measuring the photon and neutron dose rates around the research room bunker. The highest beam settings delivered during the night were 840 nA at 244 MeV, equating to an approximate dose rate of ~120 Gy/s in the centre of the beam.

The night went quickly – by 4:30 am we were packing up and handing the cyclotron back to the engineers to get ready for the clinical day. Overall it was a successful night and marked the start of an exciting period of radiotherapy research ahead."



The team still smiling at the end of a long night. Left to right: Jack Aylward, Mark Hardy, Richard Ling, Andrew Peel, Dr Michael Taylor

Congratulations Class of 2021

"You should be donning your gowns,
flinging your cap into the air right now.

Yet despite this crisis, you still did
what you do best.

Your work continued; your spirit
remained. You persisted.

These things make us Mancunians,
no matter where we're from."

Lemm Sissay, OBE

The Faculty of Biology, Medicine and Health's postgraduate research graduation ceremony was hosted virtually this summer on 5 August 2021.

The event featured a poem from The University of Manchester Chancellor, poet and playwright Lemm Sissay OBE. You can view the full video on [YouTube](#).

Congratulations to all graduands on graduating in challenging circumstances. We would welcome continuing to receive your alumni Newsletter contributions to alumni@manchester.ac.uk.



Alumni Achievements



Dr Lameck Mbangula Amugongo, Previous Postgraduate Researcher, Now Lecturer in Computer Sciences, Nambia University of Science and Technology

Research Group: Advanced Radiotherapy

PhD Title: Lung tumour changes during radiotherapy

PhD Supervisors: Dr Alan McWilliam, Prof. Marcel van Herk, Dr Eliana Vasquez osorio, Dr Andrew Green

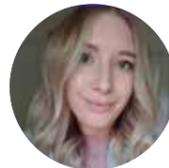
Dr Lameck Mbangula Amugongo completed his PhD in 2021 and has subsequently taken up a post as a Lecturer in Artificial Intelligence and Mobile Application Development at NUST: Namibia University of Science and Technology.

In the last year, he has produced two posters, including: PO-0932 Identification of modes of tumour changes in NSCLC during radiotherapy, ESMO L.M. Amugongo, E. Vasquez Osorio, A. Green, D. Cobben, V.H. Marcel, A.M. Alan.

Lameck has also been published as first author in *Physics in Medicine & Biology*.

Amugongo, L. M.; Osorio, E. V.; Green, A.; Cobben, D.; van Herk, M.; McWilliam, A. Identification of Patterns of Tumour Change Measured on CBCT Images in NSCLC Patients during Radiotherapy. *Physics in Medicine & Biology*, **2020**, 65 (21), 215001. <https://doi.org/10.1088/1361-6560/aba7d3>

Amugongo, L. M.; Vasquez Osorio, E.; Green, A. F.; Cobben, D.; van Herk, M.; McWilliam, A. Early Prediction of Tumour-Response to Radiotherapy in NSCLC Patients. *Physics in Medicine & Biology*, **2021**. <https://doi.org/10.1088/1361-6560/ac2f88>



Dr Sarah Pearsall, Previous Postgraduate Researcher, Forthcoming Postdoctoral Researcher with the Hannon Group at the Cancer Research

UK Cambridge Institute

Research Group: Cancer Research UK

Manchester Institute Cancer Biomarker Centre

PhD Title: Molecular Characterisation of Vasculogenic Mimicry in Pre-clinical Models of Small Cell Lung Cancer

PhD Supervisors: Prof. Caroline Dive, Prof. Fiona Blackhall

Dr Sarah Pearsall submitted her PhD with Prof. Caroline Dive in 2021 and recently passed her viva with flying colours. She has two publications under review (one as first author) and another publication she has contributed to that has been accepted. Having won three competitive travel awards from the British Association for Cancer Research (BACR), the European Association for Cancer Research (EACR) and Company of Biologists 2020, she has since secured a postdoctoral position with Prof. Greg Hannon's group at the CRUK Cambridge Institute to begin Q1 2022. Sarah was published as a first author in the *Journal of Thoracic Oncology* in 2020.

Pearsall, S. M.; Humphrey, S.; Revill, M.; Morgan, D.; Frese, K. K.; Galvin, M.; Kerr, A.; Carter, M.; Priest, L.; Blackhall, F.; Simpson, K. L.; Dive, C. The Rare YAP1 Subtype of SCLC Revisited in a Biobank of 39 Circulating Tumor Cell Patient Derived Explant Models: A Brief Report. *Journal of Thoracic Oncology*, **2020**, 15 (12), 1836–1843. <https://doi.org/10.1016/j.jtho.2020.07.008>



Dr Neil Ryan, Previous Clinical Research Training Fellow, Now Honorary Lecturer, University of Bristol and Obstetrics and Gynaecology SpR

Research Group: Endometrial Cancer (Team Womb)

PhD Title: Lynch syndrome-associated endometrial cancer: screening and novel biology

PhD Supervisors: Prof. Emma Crosbie, Prof. Gareth Evans

Dr Neil Ryan completed his PhD in 2019. His PhD research led to a change in NICE guidelines relating to the testing of womb cancer along with numerous publications, presentations, invited lectures and awards.

Neil was recently awarded the William Blair Bell Lecture by the Royal College of Obstetricians and Gynaecologists (RCOG). He has been invited to sit on several national and international committees including the RCOG's Genetics Task Force, The British Gynaecological Cancers Society's guideline subcommittee, The European Hereditary Cancer Group, Lynch Syndrome UK's Clinical Advisory group and the Royal Society of Medicine's Obstetrics and Gynaecological committee. Neil is currently pursuing a career in academic gynaecology oncology.

Ryan, N.; Snowsill, T.; McKenzie, E.; Monahan, K. J.; Nebgen, D. Should Women with Lynch Syndrome Be Offered Gynaecological Cancer Surveillance? *BMJ Clinical Research*, **2021**, 374, n2020. <https://doi.org/10.1136/bmj.n2020>



Dr Daniel Bronder, Previous Postgraduate Researcher, Now Postdoctoral Fellow, Memorial Sloan Kettering Cancer Center, New York

Research Group: Taylor Lab

PhD Title: Modelling chromosomal instability in high-grade serous ovarian cancer

PhD Supervisors: Prof. Stephen Taylor, Dr David Gilham

Dr Daniel Bronder completed his PhD on mitosis and cancer pharmacology with Prof. Stephen Taylor in 2021. He joined Memorial Sloan Kettering Cancer Center in New York City in April 2021 as a postdoctoral fellow. In his new position, Daniel continues to follow his interest in chromosomal instability and cancer. His project focuses on elucidating the link between chromosomal instability and anti-tumor immune responses.

Bronder, D.; Tighe, A.; Wangsa, D.; Zong, D.; Meyer, T. J.; Wardenaar, R.; Minshall, P.; Hirsch, D.; Heselmeyer-Haddad, K.; Nelson, L.; Spierings, D.; McGrail, J. C.; Cam, M.; Nussenzweig, A.; Fojjier, F.; Ried, T.; Taylor, S. S. TP53 Loss Initiates Chromosomal Instability in Fallopian Tube Epithelial Cells. *Disease Models and Mechanisms*, **2021**. <https://doi.org/10.1242/dmm.049001>



Alumni Profile



Research Group: Radiotherapy Related Research

Dr Ahmed Salem,

Previous Clinical Research Training Fellow, Now Senior Clinical Lecturer in Lung Cancer Research at The University of Manchester and Consultant in Clinical Oncology at The Christie NHS Foundation Trust, UK

PhD Title: Validating non-invasive therapeutic lung cancer biomarkers

PhD Supervisors: Prof. Corinne Faivre-Finn, Prof. James O'Connor, Prof. Alan Jackson, Dr Marie Claud Asselin



My PhD

I am originally from Jordan in the Middle East. After finishing my training in clinical oncology, I moved to the UK to take up a role as a Register in clinical oncology in London. I always intended on doing a PhD and in 2014, I secured a place on a PhD at The University of Manchester. The project that I applied for was lead supervised by Prof. Corinne Faivre-Finn amongst others who researched lung cancer, an area of unmet need.

My Clinical Research Training Fellowship was jointly funded by the Cancer Research UK Manchester Centre and the Engineering and Physical Sciences Research Council (EPSRC) as part of a grant held by The University of Manchester and The University of Cambridge. My research project looked at validating imaging biomarkers in lung cancer patients and had an overall aim of improving patient outcomes using different image-based biomarkers. One component of the project addressed hypoxia, which is associated with poor outcomes in patients with lung cancer. I produced a review paper on work in this area

that was published in the Journal of National Cancer Institute and was subsequently highly cited.

I carried out two clinical studies of hypoxia-based imaging biomarkers. One investigated a novel MRI biomarker quantified using oxygen enhanced MRI. This work led to landmark paper in Clinical Cancer Research. A separate study explored the validity of a different form of hypoxia imaging using a tracer called FAZA quantified on a PET scanner. In this study, I determined when the best time was to use this technique in lung cancer patients. This study confirmed that this technique was valid and that if you did the scan on different days, it had the same result.

I also looked at simpler image-based biomarkers within a trial context. I did a post hoc analysis of a large lung cancer trial that had recently completed recruitment and was led by my supervisor Prof. Faivre-Finn in Manchester. My work investigated whether the use of TNM staging quantified using routine cross-sectional imaging was prognostic in patients with small-cell lung cancer. From this, I was able to publish a high impact paper in JAMA Oncology. My research findings have now been integrated into radiotherapy guidelines and the American Society for Radiation Oncology (ASTRO) have adopted my findings to inform the optimal treatment for a subset of patients with early stage (TNM stage 1-2) small cell lung cancer.

Post-PhD

I finished my training in clinical oncology in Jordan before coming to the UK and subsequently received specialist equivalence by the General Medical Council in the UK. In 2018, I received the ESTRO Accuracy Award, which is awarded during the ESTRO Annual Congress to a radiotherapy professional for research. This award is extremely prestigious and helped with my subsequent applications.

After I finished my PhD, I applied to the MCRC Early Career Fellowship Scheme and received funding from them to work as a Clinical Fellow. By the time I applied for a Presidential Fellowship the next year, I had managed to produce two high impact papers based on my PhD which helped substantially with this application. I then went onto apply for a job in Manchester at a Senior Clinical Lecturer and Consultant level.

Why I Chose an Academic Clinician Pathway

In my current role, I have a 50/50 clinical and research split. I receive funding from Cancer Research UK RadNet Manchester and mainly focus on lung cancer radiotherapy, which feeds into my clinically based research on lung cancer patients. I was always interested in aspects of research that directly impact patients and are translatable in the clinic. What drew me to an academic clinician pathway is that, in combining work as a Senior Lecturer and Clinical Oncology Consultant, I am not pulled away from the clinic. I am always doing something that is beneficial and is complementing clinical practice.

It can be hard to prove yourself as a clinical academic, but clinical researchers should realise they're not alone. It's easy to be tempted to let go of your passions and seek stability, but if you follow your ambitions, you can achieve stability later – it may just take you slightly longer to get there!

Team Science

There can be an underappreciation of Team Science in cancer research. When you witness research that is predominantly carried out by clinical or basic science teams, you can find areas of unmet potential, where if things had been done in a slightly different way, the research could have had a much greater impact. Within my work, I've always enjoyed working with the full spectrum of researchers from clinical, to translational, to basic science. It's difficult to imagine a project being impactful without it having this Team Science involvement.

Teaching and PhD Supervision

I enjoy teaching that feeds into my research, such as supervising APEP students doing projects close to the clinic and MSc and MRes projects closely aligned to my research. I have gone from being a CRUK-funded PhD researcher to working as a co-supervisor on a

current CRUK Manchester Centre Non-Clinical Studentship. I was a PhD student in the not so distant past and that has provided me with an insight into the challenges and struggles faced by PhD researchers. I can recognise that things can sometimes feel like insurmountable challenges, with lots of different research threads involved.

Advice for Prospective PhD Candidates

Pick your project and supervisory team carefully. I would always look for projects that are multidisciplinary in nature, as this will enable you to develop skillsets that will serve you well in your future careers. Listen to your heart and identify what you are passionate about.

I'd also always advise people to get mentors outside of their immediate vicinity. Mentorship within your own institution is good but a mentor outside of your field can provide you with a different perspective. During my PhD and beyond, I've spoken to lots of people who I considered mentors and whose expertise I needed at the time. My style of working suits an on-demand mentorship approach, but the important thing regardless is to try and get a mentor's perspective during challenging times.

Advice for Current Clinical Training Fellows

Clinical academics will need to showcase lots of achievements across multiple work aspects. You'll have to prove yourself as a new consultant in a clinical team, but you'll also need to maintain research productivity and obtain grant funding. I have had my fair share of setbacks and it can be disheartening. However, it's possible to turn these negatives experiences into positive lessons. If you receive a rejection involving peer review and feedback from very experienced committee members, then these can be turned into a positive by highlighting shortcomings and areas for improvement.

You sometimes need a while to reflect on setbacks, but peer review is always helpful and can make you a stronger researcher going forwards.

Long-Term Career Aspirations

Long-term, I would like to be leading a portfolio of clinical research for lung cancer patients and hosting my own clinical trials. I hope to lead teams of clinical researchers, with nurses and multidisciplinary team members.

Funding Opportunities: Postgraduates

Multiple Deadlines - Faculty of Biology Medicine and Health, Doctoral Academy Conference Support Fund

The FBMH Doctoral Academy conference fund aims to support postgraduate researchers to attend a national or international academic conference to disseminate their findings. This competitive fund is available for Faculty of Biology, Medicine and Health PGRs to present (oral or poster presentation) at a national or international conference.

Funding is provisional until evidence is provided of acceptance of an oral or poster presentation at the stated conference. Payment of expenses is dependent on the completion of the Doctoral Academy Conference Support Fund Evaluation Form. Individual awards will be made, up to a maximum of £500. You can find instructions on how to apply for this fund on the [Doctoral Academy website](#).

There are three rounds per academic year. Please see below for the deadlines for this academic year.
Round 1 - Friday 5 November 2021
Round 2 - Friday 28 February 2022
Round 3 - Friday 29 July 2022



25 April 2022 - The Royal Society of Medicine Oncology Section: Sylvia Lawler Prize – Clinical

Prize: £250 to oral presenters
Submission deadline: Monday 25 April 2022
Meeting date: Monday 20 June 2022
Open to: All clinicians in training

Application guidelines: Abstracts of no more than 200 words are invited from clinicians in training, themed on a clinical research project. The top 3 abstracts will be selected for oral presentations; a panel of judges will determine the best oral presentation and 1 applicant will be awarded the Sylvia Lawler Prize for the best clinical paper. Clinical research includes but is not limited to audit data, imaging studies, outcomes of surgical procedures. Translational studies such as genomic studies of clinical samples should be submitted for the basic/translational science prize. If the applicant is unsure of the appropriate prize to specify they should highlight this at the time of submission.

Apply [here](#).

25 April 2022 - The Royal Society of Medicine Oncology Section: Sylvia Lawler Prize – Scientific

Prize: £250 to oral presenters
Submission deadline: Monday 25 April 2022
Meeting date: Monday 20 June 2022
Open to: All clinicians in training

Application guidelines: Abstracts of no more than 200 words are invited from scientists in training, themed on a basic scientific research project. The top 3 abstracts will be selected for oral presentations; a panel of judges will determine the best oral presentation and 1 applicant will be awarded the Sylvia Lawler Prize for the best scientific paper. If the applicant is unsure of the appropriate prize to specify they should highlight this at the time of submission.

Apply [here](#).

Funding Opportunities: Postdoctoral

24 March 2022 – Cancer Research UK Postdoctoral Research Bursary for Clinical Trainees

This award offers funding for clinical trainees to undertake a research project after completion of a PhD.

Eligibility

Applications are considered from any area of our funding remit, with the exception of clinical trials and drug discovery.

Applicant should have:

- obtained a higher degree (MD/PhD) in a cancer-relevant research area
- a national training number (NTN or NTN(A)) at the time of award
- secured protected time and salary for research

Applicants should not have held any previous postdoctoral fellowships. Fellowships must be hosted in a UK University or research institute. Periods of research experience away from the host institution may be requested and must be fully justified.

What is funded

Funding support is provided for:

- up to £35,000
- up to 2 years support
- research expenses and research services (e.g., statistical support, lab technician services, etc)
- travel related to the research project or collaborations

The award cannot be used to fund:

- the applicant's salary
- course or examination fees

Further information can be found on the [Cancer Research UK website](#).

Multiple Deadlines - University of Manchester Research Collaboration Fund for Research Staff and Research Dissemination Fund for Research Staff

University of Manchester Researcher Development Funding will now be managed by the University-level Research Development team. The Centre for Academic Research Development (CARD) will continue to advertise and manage calls for Translation Funding. Please visit their [webpages](#) and use The University of Manchester-level application forms.

The University has two funding streams aimed at research staff only with research staff defined as individuals whose primary responsibility is to conduct research and who are usually supported by grants which are of a fixed duration. This includes research assistants, research associates, postdoctoral research associates and research fellows including Presidential Fellows.

1. The Research Dissemination Fund aims to provide support to research staff to disseminate and communicate their research findings and share their research knowledge and material beyond their immediate peers. The fund is an opportunity for research staff to develop their presentation and communication skills, engage with both academic and non-academic audiences and establish networks for potential future collaborations. Maximum value £500.

2. The Research Collaboration Fund for Research Staff aims to provide support to research staff to establish a collaborative research project with a cross disciplinary partner. The fund is an opportunity for research staff to build their interdisciplinary research and develop a collaborative research grant or fellowship application. Maximum value £5,000.

For 2021-22, there are three application deadlines: 15 November 2021; 21 February 2022; 23 May 2022

Application forms and queries relating to both funds should be submitted to resdev@manchester.ac.uk.

Training Spotlight

2021-22 Strategic Training in Transdisciplinary Radiation Science for the 21st century (STARS21)



Earlier this year, the MCRC began a collaboration with the University of Toronto and Princess Margaret Hospital in radiation relation research via their Strategic Training in Transdisciplinary Radiation Science for the 21st century (STARS21) training programme. The programme has been running for over 15 years, and is designed to provide clinicians, PhD students and post-doctoral fellows with the skills essential to conducting innovative research in radiation medicine and with the leadership, management, collaboration and communication proficiencies necessary to define them as the future leaders in the field. The programme is run by Dr Anne Koch and Dr Shane Harding who are based at the University of Toronto and Princess Margaret, Toronto.

Following a competitive application scheme, several Manchester-based trainees were invited to attend the STARS21 2021-22 programme as invited scholars. The Manchester trainees appointed this year were Abigael Clough, Azadeh Abravan, Oluwasikemi (Dami) Onamusi, and Andrew Green, who presented their research at the STARS21 opening Welcome Event.



We were delighted this year to enrol these four Manchester scholars onto the programme, linked to our Cancer Research UK RadNet unit, providing them with a fantastic opportunity to not only learn from global experts, but to grow their network of trainees from across Canada and North America. Our scholars will access content virtually from the UK throughout the academic year, before heading to Toronto in Summer 2022 for the end of year research day and to meet their colleagues.

" This programme will provide me with a unique opportunity to develop my understanding of conducting groundbreaking research with a global reputation to solve real world problems. This programme will address important questions in radiation medicine and provide ways to deliver prompt and effective translation of scientific research into patient benefits"

Oluwasikemi (Dami) Onamusi, Postdoctoral Researcher

For more information about the MCRC-STARS21 collaboration and programme, please contact [Rachel Chown](#), Education and Development Lead.

Training Opportunities

2021-22 North West Biotech Initiative Events

North West Biotech Initiative aims to deliver key tips to trainees on building a career in the biotech and pharma industries. Their events provide a great chance to network with industry professionals, as well as participate in competitions. See their [events page](#) for more info on upcoming developmental opportunities.

North West Biotech Initiative Events 2021-22

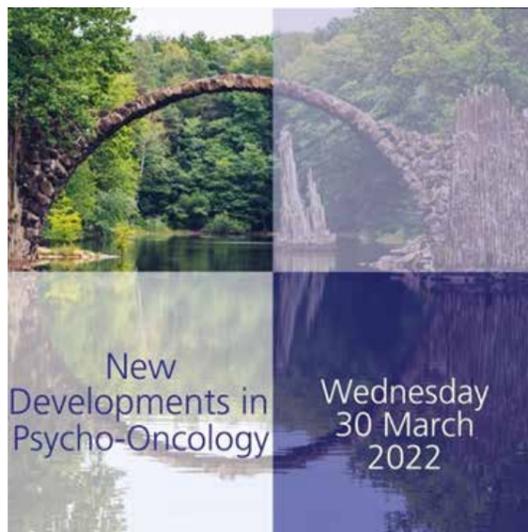
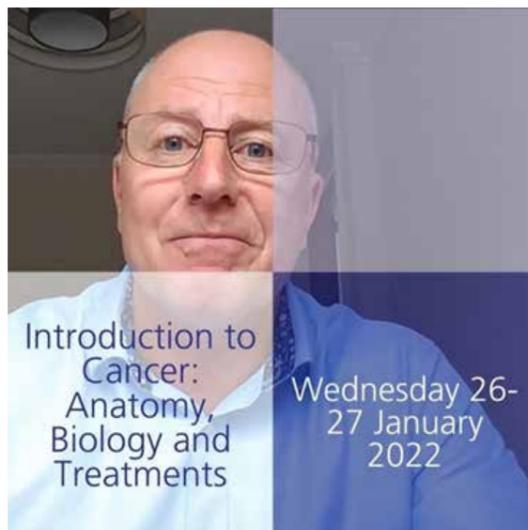
Jan Clinical Trials Explained	Apr Industry insights
Feb Women in STEM	May PhD to start-up 3.0
Mar Build a Biotech Competition	Jun Diversity in STEM Consulting case Competition

Who are we?
A student-lead committee who aims to link industry and academia

How do we do this?
By running events, competitions and seminars with our fantastic collaborators and sponsors

How to find us?
Search North West Biotech Initiative on LinkedIn Facebook, Instagram and Twitter

2021-22 Upcoming Christie Education Events



Can't find what you are looking for or want to organise an event? Get in touch via email: the-christie.educationevents@nhs.net or call us on 0161 918 7409

Ongoing - Prosper: Unlocking Postdoc Career Potential



About Prosper

A partnership between the Universities of Liverpool and Manchester and Lancaster University, [Prosper](#) is a new approach to career development that unlocks postdocs' potential to thrive in multiple career pathways. Built around 3 pillars of co-creation, democratisation of access and recognising the role of PIs in postdoc development, Prosper is funded by the UKRI RED fund. It will be ultimately opened up to universities across the UK in 2023.

Prosper at University of Manchester

2021 sees the launch of Prosper at The University of Manchester, with multiple opportunities for research staff to engage.

For postdocs

[The Prosper portal](#) hosts a suite of resources for both postdocs and PIs. First launched at the University of Liverpool in June 2020, the current iteration is the product of ongoing feedback and co-creation with postdocs, PIs and Prosper's employer partners. On the portal, postdocs can find tools to explore their skills, attributes and interests, information on how to translate these to multiple career pathways, plus former postdoc case studies and employer insights.

For Principal Investigators

[The Prosper portal](#) also contains resources dedicated to PIs and managers of researchers include PI case studies, guidance on having effective career conversations with postdocs, plus information from previous Prosper PI networks. The Prosper PI network is an opportunity to champion and drive change in postdoc career development. Benefits of attending meetings include:

- Influence, pilot and shape the development of a set of resources to be developed by Prosper to support you as a PI in the career development of your postdocs.
- Share knowledge and learn from colleagues across disciplinary boundaries, across both Lancaster University and the 2 other Prosper partner institutions, the Universities of Liverpool and Manchester.
- Share experiences and build relationships with employer partners.

For more information on all aspects of Prosper, visit the [webpages](#), get in touch with the [Prosper team](#) at The University of Manchester and follow their progress on [Twitter](#).

Conferences and Exhibitions

15 February 2022 - FBMHS6012 Introduction to Research Project Management

Postgraduate researchers and research staff in the Faculty of Biology, Medicine and Health interested in learning more about research project management as a career can attend free [University of Manchester training](#) on 'Introduction to Research Project Management', on 15th February 2022, 10:00 - 13:00, University Place, Room 2.220L

Cancer Research Project Managers' Network

The MCRC has a designated Cancer Research Project Managers' Network (CRPMN) led by Rebecca Elliott, Emma Thorpe, and Kate Vaughan, which was established to promote and support the work of PMs working in cancer research across Manchester.

Those with project management as a career aspiration who wish to discuss the cancer PM role further can use the contact details on the [MCRC website](#).

Cancer Research Project Managers' Network
A network of University of Manchester, The Christie, Manchester University NHS Foundation Trust and Cancer Research UK Manchester Institute Project Managers

Ranging from project assistants to operations directors

Over **50** members

Our Vision

- PMs will be recognised as having valued roles that are integral to research teams as part of the Team Science ethos that underpins Cancer Research delivery
- Research project management will be a recognised and valued profession that drives the delivery of exceptional scientific research
- Manchester will lead the way in defining and developing research project management as an independent and recognised profession

Our Mission

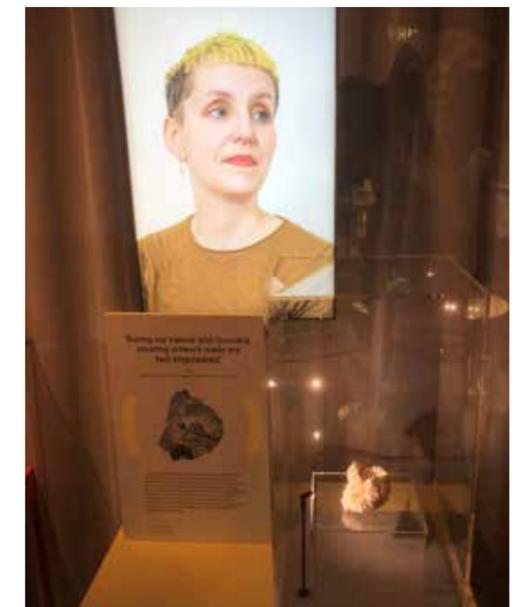
Utilising existing experience and influence within the Cancer RPMN to encourage and empower individuals to change perceptions and expectations of the PM role in order to enhance cancer research delivery

#ProjectManagementDay

Logos for Manchester Cancer Research Centre, Manchester NHS, NHS The Christie NHS Foundation Trust, Cancer Research UK, and Manchester Institute.

22 October 2021 – March 2022: Cancer Revolution: Science, Innovation and Hope: A Free Exhibition at the Science and Industry Museum in Manchester

On 22 October, 'Cancer Revolution: Science, innovation and hope' opened its doors at Manchester's Science and Industry Museum. The exhibition explores how, at a pivotal moment when one in two of us will be diagnosed with cancer in our lifetime, more of us than ever before are living longer, better with and beyond the disease – and how research is at the heart of this progress. The exhibition will be relocating to the Science Museum in London in Spring 2022, and there will be a range of digital and social media content available online if you are unable to visit the exhibition in person. The exhibition features many Manchester cancer researchers and is well worth a visit. Tickets to visit the temporary exhibition are available [here](#).



AACR Annual Meeting 2022: Register today – 8-13 April 2022, New Orleans, LA



[Register](#) for the AACR Meeting 2022 by 17 December 2021 take advantage of the lowest rates. Experts from around the world will present the latest discoveries from across the continuum of basic, translational, clinical, prevention, and population research, as well as regulatory science and public policy. This will be a comprehensive, cutting-edge scientific event that you will not want to miss!

The AACR is excited to return to an in-person Annual Meeting in New Orleans. A virtual meeting registration option is also available and will provide access to live and on-demand sessions. Both the in-person and virtual meeting registration will include access to the virtual meeting platform. Don't forget to add the Educational Program Pass to your registration to gain access to more than 65 educational sessions and methods workshops scheduled for Friday, April 8 and Saturday, April 9.

The health and safety of AACR Annual Meeting attendees, as well as the patients and communities they serve, remain the AACR's highest priorities. Therefore, the AACR will be requiring proof of COVID-19 vaccination for all attendees. Details of the vaccination verification process will be posted to the AACR website.

Beware of fraudulent vendors! The only way to secure housing and registration is to use our approved vendors: Convention Management Resources (CMR) is the official hotel management company and CompuSystems is the official registration provider for the AACR Annual Meeting 2022. Our vendors will not contact you directly. If you receive a call or e-mail from any vendor claiming to be an Annual Meeting housing or registration provider, do not respond or provide them with any personal information. See our website for more information.

The Cambridge Pancreatic Cancer Symposium, Cambridge, 6 May 2022

Tickets are now available for purchase [here](#) and the outline agenda is shown below. Poster abstracts can be submitted until 9 January 2022 should be submitted [here](#).



Outline agenda:

- 08:30 Registration and coffee
- 09:00 Symposium starts
 - Patient representatives' pre-recorded video
 - Early Detection Session: Pilar Acedo, Fiona Walter
 - Keynote Speaker: Robert Vonderheide
 - Lunch
 - Tumour Microenvironment Session: Vincenzo Corbo, Ruth Scherz-Shouval, Michael Schmid
 - Drug Discovery and Technology Session: Axel Behrens, Silvia Formenti, Rushika Perera
- 17:10 Symposium close
- 17:30 Drinks, buffet/BBQ

ESTRO 2022, 6-10 May 2022



ESTRO 2022 will take place from 6 to 10 May in Copenhagen, Denmark. The ambition of ESTRO to further reinforce radiation oncology as a core partner in multidisciplinary cancer care, and to guarantee accessible and high-value radiation therapy for all cancer patients who need it, is expressed in the society's vision statement for 2030: 'Radiation Oncology. Optimal Health for All, Together.'. After a difficult couple of years, this is more poignant than ever as, in 2022, ESTRO expect to again be able to freely get together and connect.

Important deadlines

- Abstract submission: 27 October 2022
- Late-breaking abstract submission: from 3 to 19 January 2022
- Early registration deadline: 8 February 2022
- Late registration deadline: 6 April 2022
- Desk registration: As of 7 April 2022

Find out more [here](#).

2022 ASCO Annual Meeting, 3-7 June 2022



Abstract Submission

Abstract submission for the [2022 ASCO Annual Meeting](#) is now open. Download their Call for Abstracts brochure to review guidelines, policies, and submission categories and submit your abstract by February 15, 2022.

Dates to Know

- | | |
|---|---|
| • 1 October 2021: ASCO Voices Auditions Open | • 15 February 2022: Abstract Submission Deadline |
| • 3 November 2021: Abstract Submission Opens - Submit Your Abstract | • 17 March 2022: Late-breaking Submission Deadline (Abstract placeholder is required by February 15 deadline) |
| • 15 November 2021: ASCO Voices Audition Deadline | • Early April 2022: Abstract Notifications sent to First Author |
| • Early December 2021: Member Registration and Hotel Reservations Opens | • 3-7 June 2022: ASCO Annual Meeting; Chicago, IL |
| • Mid-December 2021: Registration and Hotel Reservations Opens to All | |

Engagement Opportunities

CRUK Manchester Centre Seminar Series

Let's Talk About ... LGBTQ+ in Cancer Research

- 10th January 2022
- 12:00 – 13:00
- Register for the seminar via [Eventbrite](#)

Join the Cancer Research UK (CRUK) Manchester Centre and CRUK Barts Centre for the first in a new virtual inclusive cancer research seminar series aiming to promote research activities across a range of equality diversity and inclusivity topics.

Our first seminar will provide an introduction to the aims and Centres involved and focuses on LGBTQ+ in cancer research.

Agenda

- 12:00-12:15 - Introductions to the Seminar Series - Professor Nick Lemoine, Professor Caroline Dive, Professor Rob Bristow, and Professor Kairbaan Hodivala-Dilke
- 12:15-12:45 - Let's Talk About LGBTQ+ in Cancer Research - Professor Rob Bristow, Dr Dan Saunders
- 12:45-13:00 - Discussion

Division of Cancer Sciences Internal Seminar Series

Alongside hosting external speakers, the Division of Cancer Sciences also provide internal speakers with opportunities to present their work as part of their seminar series. This includes opportunities for Early Career and postdoctoral researchers and PhD candidates to present to colleagues. Please contact Dr Andrew Gilmore and the DCS Research Rep Team on dcs.research-rep@manchester.ac.uk for further details and/or to sign up to speak at future, collegial events.

DIVISION OF CANCER SCIENCES

Fostering a Divisional identity amongst our students and researchers

Internal seminars covering the entire gamut of our research, and opportunities for speakers at every career stage

<p>DIVISION OF CANCER SCIENCE INTERNAL SEMINAR SERIES Tuesday the 12th of October, 12:00 – 13:00</p> <p>STEPHEN TAYLOR Leech Professor of Pharmacology & Head of Division of Cancer Sciences</p> <p>Modelling chromosome instability in ovarian cancer</p> <p>After completing his Bachelor's degree at the University of Manchester, Stephen moved to the University of Oxford where he worked on mammalian chromosome instability in the mammalian spindle assembly checkpoint. In 1998, Stephen moved back to Manchester to take up a Wellcome Senior Research Fellowship. From 2004 to 2015 he was Professor of Cell Biology in 2009, in 2015 he was awarded the title of Leech Professor of Pharmacology. Stephen's research focuses on the mechanisms of chromosome instability in cancer, and how these are disrupted. Since moving his team down to Manchester, he has developed a strong emphasis on patient care, and is currently treating patients at the Christie Hospital with chromosome instability in ovarian cancer.</p>	<p>DIVISION OF CANCER SCIENCE INTERNAL SEMINAR SERIES Tuesday the 13th of July, 12:00 – 13:00</p> <p>ELEANOR CHEADLE Wellcome Fellow</p> <p>Combining radiotherapy with immunotherapy: from bench to bedside and back</p> <p>Radiotherapy (RT) is highly effective at killing tumour cells and has been shown to induce a number of changes in tumour cells and immune effector cells within the tumour microenvironment. These changes can be either immune suppressive or immunostimulatory. The impact of RT on the immune system is complex and involves a number of mechanisms including RT-induced immunomodulation, changes in the tumour microenvironment, and changes in the immune system. Eleanor's research focuses on understanding the mechanisms of RT-induced immunomodulation and how these can be exploited to enhance the effectiveness of immunotherapy. She is currently working on understanding the mechanisms of RT-induced immunomodulation and how these can be exploited to enhance the effectiveness of immunotherapy.</p>	<p>DIVISION OF CANCER SCIENCES INTERNAL SEMINAR SERIES: YR. 2 PHD STUDENT SESSION Tuesday the 26th of October, 12:00 – 13:00</p> <p>HADIYAT OGUNLAYI Cancer Research UK PhD Student</p> <p>Investigating the relationship between a stromal wound healing phenotype and breast density as a mechanism for breast cancer development</p> <p>Supervisors: Professor Cliona Owen, Professor Rob Clarke & Dr Anne Armstrong I am a medicine student and I am currently in my second year of an intercalated PhD degree in cancer sciences which is being funded by Cancer Research UK. I will be presenting the work I have done during the 1st year of my PhD as well as the future plans for my project.</p>
<p>KELECHI NIOKUI Christie Research Training Fellow</p> <p>Proteomic and metabolomic biomarkers in endometrial cancer</p> <p>Endometrial cancer is the most common gynaecological cancer and a major cause of cancer death in women. Early detection is key to the successful treatment of this disease. The first part of the presentation, is a biomarker discovery study in which we used a metabolite discovery approach to identify metabolites that are altered in endometrial cancer. We used a metabolite discovery approach to identify metabolites that are altered in endometrial cancer. We used a metabolite discovery approach to identify metabolites that are altered in endometrial cancer.</p>	<p>RHYS OWEN Wellcome Trust PhD Student</p> <p>Exploiting SUMOylation to target MYC-driven cancers</p> <p>My name is Rhys and I am a 2nd year PhD student in Stephen Taylor's lab at the OCRB. Previously, I completed an integrated masters in Biomedical Science at the University of Manchester during which time I developed a strong interest in cancer research. My PhD project is focused on investigating the relationship between MYC and the SUMOylation pathway. Cancers that overexpress MYC are susceptible to inhibition / depletion of key members of the SUMO pathway. Therefore my project aims to investigate the mechanisms behind this synthetic lethal relationship and determine whether it can be exploited to target MYC-driven cancers.</p>	<p>HELEN ADDERLEY 2nd year PhD Student</p> <p>RAS Pathway Mutations in Non-small Cell Lung Cancer</p> <p>I am currently a second year PhD student under the supervision of Dr Catherine Lindsey within the Division of Cancer Sciences. My research is focusing on RAS pathway mutations, primarily in NSCLC, looking at the genomic landscape of RAS and co-mutations using data from clinical sequencing, databases and whole genome sequencing from the Genomes England 100,000 genome programme. I plan to test functional and phenotypic effects of key RAS co-mutations and pre-clinically test novel therapeutic combinations.</p>

MCRC-CRUK MI Football Team, Tuesday Evening Football, William Hulme Grammar School, Whalley Range, Manchester

An MCRC-CRUK MI football game plays every Tuesday evening on the astroturf at William Hulme's Grammar School, Whalley Range. The games are played from 6-7pm with a warm-up from 5.30pm. Games cost £3 per person. If you would like to join the emailing mailing list, please contact john.castle@manchester.ac.uk, Manchester Cancer and Thrombosis (MCAT) Research Associate and football team captain. CRUK MI, The University of Manchester, MCRC, Christie staff and friends are all very welcome.

Worker Bee Café, Oglesby Cancer Research Building

Worker Bee Café has now opened at the Oglesby Cancer Research Building (OCRB) and is serving hot drinks and food from Monday-Friday at 8am-4pm. The café is open to staff and members of the public.



Cancer Postgraduate Researchers & Christie Fellows Virtual Coffee Catch-Up

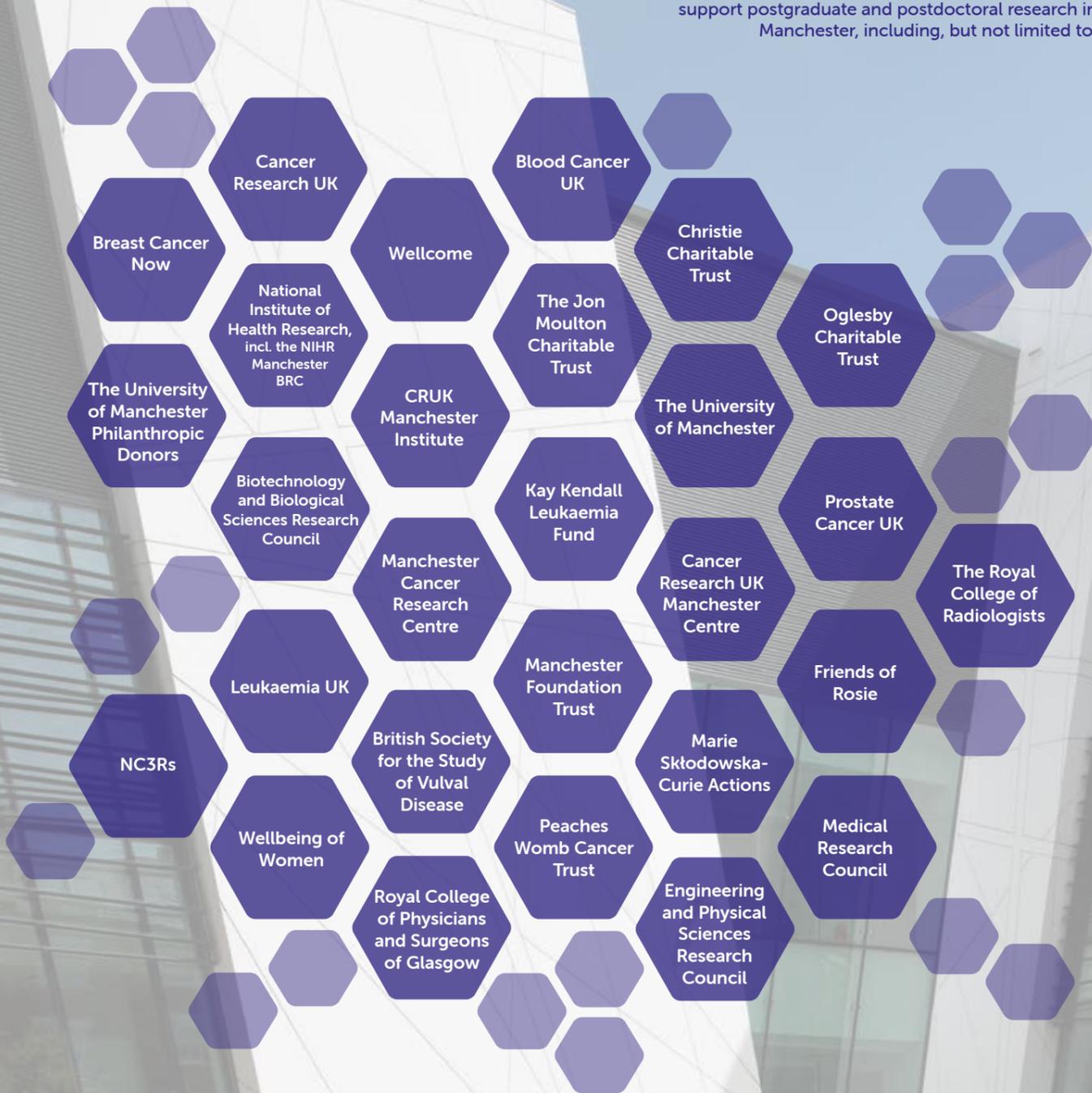
With the OCRB's new café now open, the MCRC-CRUK Manchester Centre and Christie Fellowship scheme hope to host an in-person coffee networking session for postgraduate and postdoctoral researchers in Q1 2022, COVID-19 regulations permitting.

Please contact MCRCTraining@manchester.ac.uk or the-Christie-Fellowships@nhs.net for details or keep an eye out for Coffee Catch-Up internal emails.



Thank You to Our Funders

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MCRCtraining@manchester.ac.uk



Manchester Cancer Research Centre
The Oglesby Cancer Research Building,
The University of Manchester
555 Wilmslow Road
Manchester
M20 4GJ
United Kingdom

Email: MCRCcomms@manchester.ac.uk

www.mcrc.manchester.ac.uk