Message from Professor Gilbert

The “new normal” seems to have stayed with us for longer than we hoped and as we head for a winter of discontent and the second wave let us hope the numbers of deaths are nowhere near as high as in the Spring. Cambridge has been relatively lucky with low numbers in the first wave and still low numbers after the students returned although the infection rate is creeping up. The University has been amazing in implementing a robust testing regime for symptomatic patients, staff and students as well as offering regular testing for asymptomatic students and hospital staff. The university remains committed to the safety of staff and students. The university is open for business with UG and PG students back in force. As an educational institution we are exempt from the working from home advice but at present it seems sensible to be only spending part of our week in the department.

At home many people have been coping brilliantly with old or borrowed equipment and poor internet. Please let Gavin know if you need to upgrade your computer or laptop although the university expect staff to be responsible for home internet. And indeed please let us know if there is anything we can do to ensure that working from home is as productive as being in the department. All the PIs and students are in the department 2-3 days each week and we are keen to see all our staff back in the department with us. We all benefit from human interaction and many issues can be rapidly solved with a socially distanced coffee or a quick chat in the corridor!

The REF return is almost complete and all eligible staff have been asked to nominate 12 publications. Compiling the REF report is a massive exercise and this has been brilliantly led in the clinical school by Richard Gilbertson. The university is undertaking various consultation exercises and are taking the temporary shut down and restart as an opportunity to review different processes. The clinical school has accepted various concerns raised about the research contracts office and are trying to address the very long time it can take to get contracts signed for grants and with commercial collaborations. Hopefully we will see some improvements soon.

As England enters a four week lockdown it is likely the University will be exempt as the government wishes students and research to continue. The clinical staff will certainly continue as it is important we deliver clinical services as well as the care required for Covid patients – quite a challenge! However as the situation evolves advice on office/home working may change. Please let me know if there is anything we can do to help! May I encourage you all to take any remaining leave carried forward this year over the Christmas period. It has been a stressful year for everyone and it is important to take time off to relax.

Stay safe and thank you!

Fiona.

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**FEEDBACK**

We are currently working hard to improve communication and development within the department, and a big part of that work requires feedback from you. We are open to hearing any feedback or suggestions you have. If you’d like to provide feedback on anything department related, in addition to coming to see us, you can now provide it through a feedback form located on the internal website via [http://radiology.medschl.cam.ac.uk/internal/feedback/](http://radiology.medschl.cam.ac.uk/internal/feedback/)

*We want to hear from all of you in relation to all achievements, updates, news and any information you would like to share with the Department.*
Using MRI to predict histopathological progression of prostate cancer in patients on active surveillance

Iztok Caglic, Nikita Sushentsev, Evis Sala, Nadeem Shaida, Brendan Koo, and Tristan Barrett

Prostate cancer (PCa) is the second commonest and the sixth deadliest male cancer worldwide. In the UK, 43% of men present with low and intermediate-risk localized disease, for which level 1 evidence suggests non-inferiority of active surveillance (AS) to radical treatment in terms of 10-year survival.

Multiparametric MRI (mpMRI) is critical for patient selection for AS, however, follow-up assessment typically involves a combination of prostate-specific antigen (PSA) tests, digital rectal examination, and restaging biopsies. The invasive nature of protocol-driven biopsies may limit patient uptake of AS, with MRI potentially offering a means to avoid or limit the number of interventions whilst providing a reliable tool to monitor the disease progression. In 2016, a multidisciplinary panel of experts developed the Prostate Cancer Radiological Estimation of Change in Sequential Evaluation (PRECISE) scoring system in order to standardize the language used to convey the likelihood of radiological progression of the disease and facilitate data collection regarding the natural history of MRI findings in men on active surveillance.

In this study, accepted for publication by European Radiology, we were the first to validate PRECISE against the true histopathological progression of the disease using real-life clinical data obtained at CUH between 2011-2018. Of 295 patients included, 41 (13.9%) showed true histopathological progression, which is below the global average, demonstrating the robustness of the local AS protocol. With a cut-off value of category ≥ 4, PRECISE showed sensitivity, specificity, PPV, and NPV for predicting progression on AS of 75.6%, 88.6%, 51.7%, and 95.7%, respectively. The AUC was 0.82 (95% CI: 0.74-0.90). PSA-density (PSA-D), Likert lesion score, and index lesion size were the only significant baseline predictors of progression (p<0.05). AUC of PRECISE was increased to 0.93 (95% CI: 0.89-0.96) when combined with baseline PSA-D > 0.20 and MRI Likert lesion probability score of ≥ 4.

Overall, PRECISE showed good performance in predicting histopathological progression on AS, which can be further improved by incorporating standard-of-care baseline clinical predictors. This work, therefore, provides a much-needed evidence for the continued expansion of the role of MRI in PCa management across the whole care continuum from the initial pre-biopsy assessment to long-term follow-up on AS programmes.

Lessons Learned: Mary Mclean and working from home

Following the university’s Lessons Learned staff survey, Mary Mclean was asked to film a video talking about her experiences of working from home during lockdown. The Radiology pub quiz team gets a mention. The full video can be found at: https://www.ourcambridge.admin.cam.ac.uk/news/more-staff-tell-their-lockdown-learnings-video-stories
The 2020 ISMRM & SMRT Conference & Exhibition was quite different compared to the previous years as it was completely virtual. Originally scheduled to be held in Sydney, Australia in April, the conference was relocated and rescheduled to Paris, France in August, as a consequence of the COVID-19 pandemic. However, due to continuing safety concerns and public health restrictions with respect to large gatherings during the pandemic, this year’s ISMRM annual meeting was transformed into a virtual conference & exhibition. Having a virtual conference has its benefits. Mostly all sessions were pre-recorded and could be viewed two weeks in advance of the live conference, allowing for personalised time- and viewing-management as well as the comfort of your own sofa. However, the advantages of presenting (digital) posters were sadly lost completely, as the valuable face-to-face discussions and networking opportunities during poster sessions were unavailable. Nevertheless, the ISMRM organisers did an amazing job by moving the entire conference to virtual with very limited time and hosting a brilliant event in a difficult period. A lot of amazing MR-related work going on in the world was showcased at this year’s meeting and Cambridge and our Department were no exception, contributing valuable, scientific research in bringing this field forward.

In total, the University of Cambridge contributed 46 abstracts, with 25 having co-authors from the Department of Radiology. From our Department, Hao Li and Gabrielle Baxter had oral presentations. Well done! Hao’s presentation was titled “Highly Accelerated Subtractive NCE-MRA using Advanced k-space Subtraction and Magnitude Subtraction Reconstruction Methods” (authors: H Li, MJ Graves, N Shaida, A Prashar, DJ Lomas, and AN Priest) and Gabrielle’s presentation title was “Predicting response to neoadjuvant chemotherapy in breast cancer: machine learning-based analysis of radiomics features from baseline DCE-MRI” (authors: G Baxter, AJ Patterson, L Rundo, R Woitek, R Bedair, J Carmona-Bozo, R Manavaki, MA McLean, SA Reid, MJ Graves, and FJ Gilbert).

Ferdia Gallagher gave an educational lecture on “Hyperpolarized 13C Imaging in 2030: A Clinician’s View”. Jamie MacKay and Josh Kaggie each moderated a scientific session during the live conference entitled “Musculoskeletal Emerging Methods” and “Simultaneous or Interleaved MRS & X-Nuclei”, respectively.

Many congratulations to Jamie MacKay, who has been elected an ISMRM Junior Fellow. A well-deserved recognition!

Dimitri Kessler’s abstract on “Distinguishing Exercise-Induced Compositional Changes in Knee Cartilage with Quantitative MR Relaxation Time Mapping” (authors: DA Kessler, JD Kaggie, JW MacKay, S McDonald, A Grainger, AR Roberts, RL Janiczek, MJ Graves, and FJ Gilbert) was mentioned as one of the ISMRM MSK highlights.

A post-conference editorial was written by Whitney Palmer on Gabrielle Baxter’s abstract (“A meta-analysis comparing the diagnostic performance of abbreviated MRI (ABB-MRI) and a full diagnostic protocol (FDP-MRI) in breast cancer” (authors: GC Baxter, A Selamoglu, JW Mackay, S Bond, E Gray, and FJ Gilbert)) and published on the ‘Diagnostic Imaging’ website (https://www.diagnosticimaging.com/view/faster-cheaper-breast-mri-performs-as-well-as-full-protocol-scans).

Martin Graves presented outstanding MR Masterclass sessions during the SMRT event which was very much appreciated by all attendees and even inspiring them to go to social media to praise Martin’s lectures.

Please see below for details on all the presentations our Department were involved in at this year’s ISMRM virtual meeting.

1. **Natural Abundance Deuterium (2H) MRI of the Brain.** J Kaggie, M McLean, R Schulte, D Kessler, F Henson, F Gilbert, M Graves, F Gallagher


10. The effect of hormone therapy on T1 mapping-related values obtained from MR fingerprinting-derived images of prostate cancer patients. N Sushentsev, J Kaggie, G Buonincontri, R Schulte, V Gnanapragasam, M Graves, T Barrett


15. Highly Accelerated Subtractive NCE-MRA using Advanced k-space Subtraction and Magnitude Subtraction Reconstruction Methods. H Li, M Graves, N Shaida, A Prashar, D Lomas, A Priest


17. Large field of view Sodium-23 and Carbon-13 imaging at 3T using a dedicated multinuclear birdcage body coil. J Kaggie, T Lanz, M McLean, F Riemer, R Schulte, M Graves, F Gallagher

18. Optimisation of Poisson-disk Sampling Pattern for Highly Accelerated Femoral NCE-MRA. H Li, M Graves, D Lomas, A Priest


Over lockdown Professor Gilbert and Dr Hickman developed a National Breast Imaging Academy session which is available on the e-Learning for Healthcare website (https://www.e-lfh.org.uk/programmes/national-breast-imaging-academy/). The sessions title is “Computer-Aided Detection (CAD) and Artificial Intelligence (AI)” and is one of 80 sessions now provided as part of the National Breast Imaging Academy e-LfH programme. This session will act as an educational and online CPD resource for healthcare professionals involved in breast imaging. Sections include the ‘Development of AI Mammography Tools’ and ‘Opportunities and Challenges’ in addition to self assessment questions which can be accessed at the end of the session.

“It was fantastic to be involved with such an enthusiastic and experienced team developing this session as well as to be part of the National Breast Imaging Academy programme to make such educational resources freely available and accessible to healthcare professionals” – Sarah Hickman


Dr Zhongzhao Teng elected president of Chinese Life Scientists Society in the UK

Dr Zhongzhao Teng has been elected as the president of Chinese Life Scientists Society in the UK. It was announced on the 26th Annual Conference held on 19 Sept 2020.

Chinese Life Scientists Society in the UK (CLSS-UK) is a non-profitable academic organisation, whose membership includes Chinese researchers across the life science field (http://www.clss.org.uk/). CLSS-UK aims at facilitating the communication and collaboration among Chinese life scientists in the UK and in the motherland China. It was founded in 1992 with the support of the Education Section, Chinese Embassy in the UK and support from the Chinese Students Scholars Association in the UK.
Department News

Jamie MacKay appointed a junior fellow of ISMRM

It is with great pleasure that we can let you know that Jamie MacKay was appointed a junior fellow of the ISMRM this year. Sadly Jamie could not collect his award on stage as it was a virtual conference, but you can see a copy of the slide on which it was announced above. Jamie has been promised a trip onto stage next year in April 2021 in Vancouver.

Comparing the diagnostic performance of abbreviated MRI (ABB-MRI) and a full diagnostic protocol (FDP-MRI) in breast cancer

A virtual poster from the breast imaging research group was recently featured in the media coverage round up from the International Society for Magnetic Resonance in Medicine annual meeting. This work outlines the results of a comparative meta-analysis that examined the sensitivity and specificity of an abbreviated MRI protocol that only used one pre-contrast and one post-contrast image compared to a full diagnostic protocol, finding a comparable diagnostic performance. This work has recently been accepted for publication in Clinical Radiology.

Read about the work here: https://www.diagnosticimaging.com/view/faster-cheaper-breast-mri-performs-as-well-as-full-protocol-scans

BIR Annual Congress 2020

Professor Evis Sala has been invited to give the BIR/Canon Memorial Lecture at the BIR Annual Congress this year - “Integrated radiogenomics for virtual biopsy and treatment monitoring in ovarian cancer” on Friday 6 November 15:20 (GMT). Further details: https://tinyurl.com/vjz8622
The University's Radiogenomics and Quantitative Imaging Group led by Professor Evis Sala is a multi-disciplinary team of radiologists, physicists, oncologists and computational scientists. One of the most active areas of our research is high-grade serous ovarian cancer (HGSOC), the most lethal gynaecologic malignancy and HGSOC is the fifth leading cause of cancer-related deaths in women.

**All in One cancer imaging optimisation using an integrated mathematical and deep learning approach**

Funded by Wellcome Innovator Award, led by Prof. Evis Sala and Prof. Carola Bibiane Schönlieb from Department of Applied Mathematics and Theoretical Physics

Recent developments in mathematical image analysis, in particular deep neural networks, have unravelled the potential of robust image quantification which is essential to cancer care. Despite these achievements, the high variability of image acquisition and reconstruction and the multiple individual optimisation steps of the imaging pipeline (acquisition, reconstruction, segmentation and classification) remain two major challenges. This leads to inherent biases in image quantification and to the development of suboptimal quantitative imaging biomarkers that lack reproducibility. As a consequence, the analysis of these biomarkers has limited use in the clinic which becomes even more challenging for multi-centre clinical trials. Our project therefore aims to:

- Apply novel deep learning algorithms, recently developed by our group, to reconstruct medical images in a fully unbiased manner.
- Perform the reconstruction, segmentation, and prediction steps jointly, thereby creating an end-to-end pipeline optimised for the task at hand.
- Develop robust evaluation metrics that will be used to analyse large heterogeneous retrospective imaging datasets.

**Manual segmentation**  
**Automated segmentation**

**Immuno-PET/MR imaging in immune checkpoint inhibition project**


The project aims to demonstrate and validate the use of PET/MR with a 89Zr-labelled anti-CD8 minibody, to serially visualize/track the presence of CD8 expressing T-lymphocytes in cancer patients undergoing treatment in a dedicated clinical trial with a novel Immune Checkpoint Inhibition agent. We aim to confirm safety of new immunotracers and to demonstrate their clinical utility in combination with anatomic imaging (MRI or CT) for patients with cancer. Clinical application of the novel immunotracers will focus on diagnostics and patient stratification based on immune status as well as prediction of response or long-term outcome of therapeutic interventions, early detection of immune system activation, target engagement within the
Department News

tissue of interest, both systemically and locally.

We are part of a multi-centre consortium in collaboration with Prof. Brindle’s lab in CRUK – CI. Prof. Sala and her team will bring to the consortium the required expertise to execute this research successfully. Prof. Sala will be working closely with Dr Luigi Aloj on this project.

Covid Related Research

Rapid and Secure AI imaging based diagnosis, stratification, follow-up, and preparedness for coronavirus pandemics (DRAGON study)

We are pleased to announce the start of the 3 year project Rapid and Secure AI Imaging based diagnosis, stratification, follow-up, and preparedness for coronavirus pandemics (DRAGON study), which has been funded by Innovative Medicines Initiative (IMI) supported through the European Commission’s Horizon 2020 Framework Programme for Research and Innovation (https://ec.europa.eu/programmes/horizon2020/what-horizon-2020). The DRAGON project led by OncoRadiomics is a multinational consortium of 21 enterprises, research institutes, and hospitals from 8 countries with the aim to achieve a multi-faceted diagnostic and prognostic platform and a precision medicine approach combating COVID-19 pandemic.

The goal of the research project is to apply artificial intelligence and machine learning to deliver a decision support system for precise coronavirus diagnosis and prognosis. Existing as well as new imaging and clinical data will be used to develop and validate new AI tools for diagnosis and prognosis and integrate them into clinical decision-making.

DRAGON will be one of the first to develop innovative machine learning, and clinical procedure improvement that will potentially make a huge socio-economic impact for the coronavirus outbreak.

Prof. Sala co-lead this project for University of Cambridge together with Prof. Carola Bibiane Schönlieb from Department of Applied Mathematics and Theoretical Physics and Dr Zhongzhao Teng from Department of Radiology. Here is the link to the Cambridge Consortium for more info: https://covid19ai.maths.cam.ac.uk/

Exam Study: Investigating machine learning imaging to predict COVID response

COVID research has been abundant through all of Addenbrooke’s. Within our department, both Fiona Gilbert and Evis Sala have been leading studies investigating machine learning imaging to predict COVID response. The EXAM study is one of these, led locally by Fiona Gilbert, with software produced by MGH, and international collaborations coordinated by Nvidia.

Significant work was performed by Sarah Hickman to coordinate ethical approvals, Josh Kaggie for programming code, and help with the images from Martin Graves, Andy Priest and Guy Williams. There has also been additional support from the High Performance Computing Group. This is the same Nvidia that has recently acquired ARM in Cambridge for $40 billion.

The EXAM study uses a machine learning method called federated learning. This trains data locally - so within the hospital networks - but sends model weights to a server so that multiple sites can use a collaborative or federated model. This enables machine learning models to cross boundaries to generalise the models to more global patient population needs. There were 20 sites involved overall.
Department News

EXAM predicts the future oxygen-device needs of patients, such as whether they will require a ventilator within 24 or 72 hours. This could be useful in the future for planning hospital resources. Our local results, before federated learning, were already high - at 0.80 for an AUC! After federated learning, that is, using combined models from other institutions, our results still increased, showing the value of federated learning. Some sites increased from even as low as 0.4 AUC to 0.9!

The team expects papers to come from EXAM, but for now, you can see more information at these links!

- [https://blogs.nvidia.com/blog/2020/10/05/federated-learning-covid-oxygen-needs/](https://blogs.nvidia.com/blog/2020/10/05/federated-learning-covid-oxygen-needs/)

NCITA Annual National Conference and Webinar Series

The NCITA Annual National Conference planned for 5th May at KCL was unfortunately cancelled due to the COVID19 pandemic. However, the Conference was hosted instead as a virtual, 3-part Webinar series on Zoom.

The first 'live' webinar on 'Optimising Imaging in the 'Omics Era' was held on Friday 12th June 2020. The event, chaired by Professor Evis Sala, and hosted on Zoom by Ms Amanda Mathieson, included over 80 participants as well as our excellent panel of speakers: Professor Eric Aboagye, Professor Evis Sala and Dr Simon Doran.

NCITA's second 'live' webinar was held on Friday 26th June on 'Optimising Image Quality'. This event, chaired by Professor James O'Connor, included 60 participants, with talks from 2 external speakers Dr Lucy Pike (PET Core Lab, KCL), and Professor John Waterton (University of Manchester) as well as an excellent presentation by Dr Maite Jauregui-Osoro, NCITA QA/QC Unit Manager.

NCITA's third 'live' webinar was held on Friday 31st July 2020 on 'Optimising Applications of Imaging in Trials'. Professor Sue Mallett from the Centre for Medical Imaging at UCL discussed the importance of getting the biostatistics right when designing imaging biomarker studies, identifying and assessing risk of bias and plans for collaboration with the NCITA statistical collaborative team. Professor Hashim Ahmed from Imperial College London discussed ‘Clinical Trials and the Impact of Clinical Advances in Prostate Cancer’. Professor Shonit Punwani focused on the challenges of imaging techniques such as mpMRI in particular experiences from the VERDICT MRI study (Vascular Extracellular and Restricted Diffusion for Cytometry in Tumors). Professor Punwani also discussed the successes and opportunities of novel imaging techniques such as 13C Hyperpolarised MRI.

Recordings of the full webinar series are available [https://tinyurl.com/y5577qnv](https://tinyurl.com/y5577qnv) to watch again or to listen to if you missed the 'live' session.

Recent Publications (from June 2020 onwards)


Department News

Jin Zheng - Image analysis and computational modelling of the anomalous aortic origin of a coronary artery

Jin ZHENG have just started his PhD supervised by Dr. Zhongzhao Teng. His current research focuses on the image analysis and computational modelling of the anomalous aortic origin of a coronary artery (AAOCA), a subgroup of congenital coronary artery anomalies (CAAs). Figure 1 shows some examples of AAOCA.

The AAOCA is a leading cause of sudden cardiac death (SCD) of athletes. Malignant AAOCA carriers may experience SCD at a young age after extreme exertion, and symptoms at an old age.

Coronary arteries supply oxygenated blood to the heart which pumps oxygenated blood to the rest of the body [2]. Normal coronary arteries originate from ostia at upper midsection of the left and right sinus of Valsalva with 45 to 90 degrees orientation to the aortic wall [3], [4]. This configuration maximises the coronary filling when the left ventricle diastoles [3]. For normal coronary arteries, there should be helpful interaction or synchronisation among the coronary arteries and the rest of the heart, such as heart chambers, aorta, pulmonary arteries, etc. As a result, oxygenated blood should flow to all heart territories with little resistance during each cardiac cycle.

Malignant AAOCA's, however, show interference among coronary arteries and the rest of the heart components. Such interference may limit the blood flow to the myocardium and even causing ischemia. For example, the interarterial AAOCA's which pass between the aortic and pulmonary arteries are malignant [4]. The “scissors-like mechanism” is hypothesised acting between aortic and pulmonary arteries and compresses the interarterial coronary during exertion [4]. The blood supply to the heart is, therefore, limited or reduced.

A further understanding in the malignant AAOCA mechanisms, development and relation with symptoms will help to determine treatment options and improve the accuracy in AAOCA risk stratification. Jin’s research project is consequently proposed to address above concerns.

The overall aims of the research project are to:

- Improve the malignant AAOCA understanding with computational modelling.
- Correlate symptoms with AAOCA image and modelling analysis results.
- Correlate symptoms with the interaction among coronary artery and different heart components during a cardiac cycle.

A few other publications you may be interested in...

1. Magnetic Resonance Fingerprinting of the Pancreas at 1.5 T and 3.0 T. E Serrao, D Kessler, B Carmo, L Beer, K Brindle, G Buonincontri, ... Nature Publishing Group 2020 (https://www.repository.cam.ac.uk/handle/1810/310966)

2. The Optimisation of Deep Neural Networks for Segmenting Multiple Knee Joint Tissues from MRIs. DA Kessler, JW MacKay, V Crowe, F Henson, MJ Graves, FJ Gilbert, ... Computerized Medical Imaging and Graphics, 101793 2020 (https://www.repository.cam.ac.uk/handle/1810/310866)


And an article written about one of our articles!

Please welcome

Dr. David Hulse, Clinical Research Associate, working with Prof. Sala and Dr. Luigi Aloj on “Immuno-PET/MR imaging in immune checkpoint inhibition study”.

Dr. Ian Selby, Clinical Research Associate, working with Prof. Sala on DRAGON project.

Dr. Vlad Bura, Clinical Research Associate in Cancer Imaging, working with Prof. Sala on Advanced cancer Imaging Programme.

Dr. Amandine Crombe, Honorary Clinical Research Fellow, working with Prof. Sala on Artificial intelligence and radiogenomics for precision oncology in advanced ovarian cancer

Ali Khan under the supervision of Prof Ferdia Gallagher.

Dr. Ines Horvat Menih whose project focuses on the hyperpolarised 13C-pyruvate MRI in renal cancer as a part of the Advanced Medical Imaging group under the supervision of Prof Ferdia Gallagher.

Jin Zheng under the supervision of Dr Zhongzhao Teng.

Iris Allajbeu has now taken up the role of Clinical Senior Research Associate / Honorary Consultant working in the Breast Unit.

Kirsten Morris has now returned to take up the post working in the Breast Unit

Gabrielle Baxter has now taken up a post as a new Research Assistant

And a sad farewell and good luck to...

Announcements


Jude Hopkin announced the birth of their daughter, Eleanor Grace Hopkin, born on 16th September weighing 6lb8oz. They are both doing well and enjoying family time at home.
Please Welcome the new 2020 Registrars

Alex Sawer
I am originally from Boston in Lincolnshire, and went to medical school here in Cambridge. I was delighted to be able to return after a short venture up North, having done my foundation training in Stockport and spending the last year as a clinical fellow in ICU at St James' Hospital in Leeds. I'm keeping an open mind with regards to my interests within radiology, and in my spare time I enjoy keeping active by running, walking and playing football.

Danni Kostic
I grew up in Loughborough and went to UCL to study Medicine. I did my Foundation Training at Worthing Hospital, where I stayed to do an 'F3' year. My F3 involved working on the geriatric ward 3 days a week, and spending the rest of my time enjoying life and travelling! I then went to Tunbridge Wells Hospital for Core Medical Training. After this I spent a year a Darent Valley Hospital in Dartford as an Education Fellow, which was a non-clinical role and involved teaching medical students, nurses and junior doctors, and in particular doing lots of simulation training.

My interests include long-distance hiking (I've hiked the Laugavegur Trail in Iceland, South Downs Way and West Highland Way, and done parts of other long-distance walks), skiing, running and baking!

Jade Scott-Blagrove
Prior to starting radiology, I completed my F2 at Chelsea and Westminster Hospital (Care of the Elderly and A&E). I graduated from the University of Manchester with an intercalated BSc in neuroscience. I founded 'Widening Participation Medics Network' (WPMN) to support current and prospective medical students from underrepresented groups and I work on this in most of my spare time. I'm interested in paediatric radiology however I am keeping an open mind to all sub-specialties.

Ken Okonkwo
I'm Ekene Kenneth Okonkwo. I'm Nigerian and I finished medical school back home before going to the Caribbean to work for a few years mostly in Internal Medicine. I finished the MRCP in 2013 and I came to the UK in 2017 to do a 2 year fellowship in Cardiology and got my MSc in Preventative Cardiovascular Medicine in 2017. I've worked in Cardiology and Acute Medicine up until now. My interests are mainly cardiac for now but I'm open to learning other aspects of imaging.

Michael Morgan
I’ve just finished Fy2 in North West London. I had rotations in Urology, gastroenterology, acute medicine, geriatrics, GP and A&E. I completed medical school at Kings but started medical school in South Africa.

During medical school I intercalated in Anatomy.

I have a research interest in learning curves, simulators and the utility of different modalities for teaching. I’m recently married, and have a cat and a naughty Labrador puppy. We all enjoy cooking.

Priya Rogers
My name is Priya and I trained at Guy's King's and St Thomas' medical school in London before moving to Brighton for my AFP. I worked in anaesthetics & ITU, cardiology, palliative care, A&E and acute medicine, and did a lot of educational work with the medical school which led to a PG Cert in medical education. I took an FY3 year as a research fellow at the Centre for Brain Repair in Cambridge and started an MPhil in translational research that year too. Due to COVID I was also privileged enough to have worked on the wards in Cambridge prior to starting ST1 (which helped enormously in navigating through EPIC!). The areas of radiology I have found most interesting so far are IR, oncology imaging and neuroimaging, although I am keen to learn and find it all very interesting!
Department Events

Upcoming Events
Wednesday Forums 5 pm—6pm

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<tr>
<th>DATE</th>
<th>CHAIR</th>
<th>SPEAKER</th>
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<tbody>
<tr>
<td>11th Nov</td>
<td>FJG</td>
<td>Professor Evis Sala – Integrated radio genomics for virtual biopsy and treatment monitoring in ovarian cancer</td>
<td>NONE</td>
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<tr>
<td>18th Nov</td>
<td>LA</td>
<td>Molecular Imaging Club - Professor. Geoffrey Higgins - &quot;Clinical trials with the mitochondrial inhibitor atovaquone - use of hypoxia imaging to assess efficacy&quot;.</td>
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<tr>
<td>25th Nov</td>
<td>AP</td>
<td>MRI Safety – Andrew Priest</td>
<td>NONE</td>
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<tr>
<td>2nd Dec</td>
<td>FJG</td>
<td>Dr Sarah Upponi - “on call imaging – abdominal solid organ transplant “</td>
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<tr>
<td>9th Dec</td>
<td>FJG</td>
<td>James Grist /Mitch Chen/Fergus Gleeson - ‘Initial experience in imaging post-COVID patients with hyperpolarised Xenon’.</td>
<td>NONE</td>
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<tr>
<td>16th Dec</td>
<td>FJG</td>
<td>Christmas Quiz</td>
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Although not all our forums are available to view online, you can find those that are on our “Forum and Seminar Recordings” page at [https://tinyurl.com/ybv3qtp3](https://tinyurl.com/ybv3qtp3)

Invites to forums will be sent out the previous week to the forum mailing list and will be published on the Radiology Teams Channel on the day.

To receive your CPD certificate, please remember to sign the attendance register. If you are attending via Zoom, please remember to use your full name.

Radiology Physics Tutorials
Mondays 1 pm – 2 pm

Invites to Tutorials will be sent out the previous week to the Tutorial mailing list and will be published on the Radiology Teams Channel on the day

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>Nov 9</td>
<td>Physics of DWI</td>
<td>Gabrielle Baxter</td>
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<tr>
<td>Nov 16</td>
<td>Introduction to the FMRIB Software Library</td>
<td>Mary McLean</td>
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<tr>
<td>Nov 23</td>
<td>Ultra-high field MR imaging and spectroscopy</td>
<td>Chris Rodgers</td>
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<tr>
<td>Nov 30</td>
<td>Medical image registration</td>
<td>Roie Manavaki</td>
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<tr>
<td>Dec 7</td>
<td>Introduction to compressed sensing in MRI</td>
<td>Arnold Benjamin</td>
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<tr>
<td>Dec 14</td>
<td>Introduction to the physics of $^{13}$C MR imaging</td>
<td>Mary McLean</td>
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</table>

You can now find us on our new Twitter account [@Radiology_UOC](https://twitter.com/Radiology_UOC) as well as [https://radiology.medschl.cam.ac.uk](https://radiology.medschl.cam.ac.uk), where we will be publishing our latest news and upcoming events and any last minute changes that might occur.
Update your Information

In every newsletter, we will be requesting that all department members – **including students** - update three specific tasks for us:

1. Please ensure that your **Symplectic account** is up to date. We pull publication data for the website using this database, so to make sure your publications are up to date on the website.
2. The website pages on research teams and projects are out of date. Any material available for public consumption would be a great help!
3. Please send us any news or information about the projects you’re working on! We want to publicise the department’s achievements as much as possible, and get your names out there. The following are points of contact for research groups:

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Research Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramona Woitek</td>
<td><a href="mailto:rw585@cam.ac.uk">rw585@cam.ac.uk</a></td>
<td>Breast imaging and oncologic imaging</td>
</tr>
<tr>
<td>Kelly Holmes</td>
<td><a href="mailto:Kelly.Holmes@cruk.cam.ac.uk">Kelly.Holmes@cruk.cam.ac.uk</a></td>
<td>Advanced Cancer Imaging Programme Manager CRUK</td>
</tr>
<tr>
<td>Tristan Barrett</td>
<td><a href="mailto:tb507@medschl.cam.ac.uk">tb507@medschl.cam.ac.uk</a></td>
<td>Multi-parametric MRI techniques for identifying and characterising prostate tumours</td>
</tr>
<tr>
<td>Joshua Kaggie</td>
<td><a href="mailto:jk636@cam.ac.uk">jk636@cam.ac.uk</a></td>
<td>Stem cell research for joint repair</td>
</tr>
<tr>
<td>Zhongzhao Teng</td>
<td><a href="mailto:zt215@cam.ac.uk">zt215@cam.ac.uk</a></td>
<td>The translational application of combination of in vivo medical imaging and mechanical analysis to assess the vulnerability of atherosclerotic lesions.</td>
</tr>
<tr>
<td>Tomasz Matys</td>
<td><a href="mailto:tm418@cam.ac.uk">tm418@cam.ac.uk</a></td>
<td>MRI and PET for characterization of the extent of primary and secondary brain tumours.</td>
</tr>
<tr>
<td>Yuan Huang</td>
<td><a href="mailto:yh288@cam.ac.uk">yh288@cam.ac.uk</a></td>
<td>Clinical-oriented risk assessment of CVD</td>
</tr>
<tr>
<td>Miranda Townsend</td>
<td><a href="mailto:mjt205@medschl.cam.ac.uk">mjt205@medschl.cam.ac.uk</a></td>
<td>Oncology and haematology trials</td>
</tr>
</tbody>
</table>

Open Access Reminder

As you all know, since HEFCE’s policy change, in order for any publications to be eligible for the REF they must be made Open Access. We must make sure our department is 100% compliant.

The university has a team in place dedicated to making sure this process is as simple as possible and has now linked Open Access with Symplectic Elements so that publication data will be filled automatically from databases.

**When a journal accepts your paper for publication, upload it through Symplectic before you sign any copyright or Open Access agreements.**

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You can also contact the open access team directly at: [info@openaccess.cam.ac.uk](mailto:info@openaccess.cam.ac.uk)