Radcliffe Department of Medicine

Annual Symposium

Tuesday 23 March 2021

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UNIVERSITY OF OXFORD

RDM Annual Symposium

Tuesday 23 March 2021
Hosted on Zoom.

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In vivo dynamics of transcription, chromatin and genome organization during mouse erythroid differentiation

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Professor Amanda Adler

Drugs for type 2 diabetes - searching for (even) more

OCDEM

Biography

Amanda Adler, MD, PhD, FRCP is Professor of Diabetic Medicine and Health Policy at Oxford University, and director of the Diabetes Trials Unit within the Oxford Centre for Diabetes, Endocrinology and Metabolism (OCDEM). She trained in economics, medicine, and epidemiology in the US, and pharmacoepidemiology and pharmacovigilance in the UK.

She chairs a Technology Appraisal Committee at the National Institute for Health and Care Excellence (NICE) evaluating drugs and devices across disease areas which she has done since 2009. Also with NICE, she chaired the Clinical Guidelines for Newer Agents for Type 2 Diabetes and the Quality Standard for Diabetes, advises the Connect Project, and chaired decisions for the Cancer Drug Fund. In 2019, Amanda received an award for Distinguished Contribution to NICE at the Parliamentary ceremony celebrating NICE's 20th anniversary.

She advises the UK National Screening Committee and the World Health Organisation as a technical expert. She serves on an Expert Advisory Group for the UK Commission on Human Medicines, and chaired the Expert Group on the Safety of Insulin for the UK's Medicines and Health Products Regulatory Agency. She is a Fellow of the Royal Statistical Society.

Professor Adler supports projects that set priorities under universal health coverage working in collaboration with the UK government, NICE Scientific Advice, NICE International, the International Decision Support Initiative (iDSI), the World Bank, and the Organisation for Economic Co-operation and Development.

Dr Alba Rodriguez-Meira (RDM Graduate Prize winner)

Disentangling myeloid neoplasms one cell at a time

MRC Molecular Haematology Unit (MHU)/WIMM/NDCLS

Abstract

Myeloproliferative neoplasms arise in haematopoietic stem cells that acquire activating mutations in the JAK/STAT signalling pathway. In about 20% of patients, further acquisition of *TP53* point mutations leads to transformation to an aggressive and largely untreatable form of Acute Myeloid Leukaemia (secondary AML, or sAML). Disease progression is associated with increased genetic, molecular and functional heterogeneity, which likely under underlies the mostly universal treatment failure in sAML.

To resolve these multiple layers of intratumoral heterogeneity, Alba recently developed TARGET-seq (Rodriguez-Meira *et al*, 2019, Rodriguez-Meira *et al*, 2020), a single-cell multi-omic method that correlates genetic, transcriptional and cell-surface proteomic readouts from the same single cell with extremely high resolution.

TARGET-seq analysis of 20,000 cells from patients with secondary AML identified genetic subclones with markedly distinct molecular and functional properties. Acquisition of multi-hit *TP53* mutations was invariably associated with highly complex copy number alterations, aberrant myelo-erythroid differentiation and dysregulation of key stem cell regulators. Interestingly, preleukemic subclones from patients undergoing transformation were enriched in inflammatory signatures and depleted of *TP53* transcriptional activity years before diagnosis, as compared to non-transformed MPN patients. This suggests that preleukemic clones could be primed for transformation and could potentially be targeted to prevent disease progression.

Ultimately, single-cell multi-omic analysis identified key molecular regulators of *TP53* mediated transformation, providing unique insights into the evolution of these tumors and how they might be therapeutically targeted.

Biography

Alba completed her DPhil under the supervision of Professors Adam Mead and Sten Eirik Jacobsen at the Molecular Haematology Unit in the MRC WIMM, where she characterized the genetic and molecular heterogeneity of leukemic stem cells, which give rise to blood cancer.

Alba pioneered the development of a new single-cell sequencing method that correlates mutations, cell surface proteomics and whole transcriptome analysis from the same cell (TARGET-seq). This uniquely allowed her to resolve the molecular signatures of genetically-distinct leukaemic stem cells in patients with myelofibrosis, a bone marrow malignancy. Ultimately, this led to the identification of therapeutic vulnerabilities specifically affecting mutant cells, which could help develop better therapeutic strategies for patients with blood cancer. The technique has been widely adopted in many laboratories in the world, and has resulted in many collaborations both at the MRC WIMM and internationally. In addition to her academic work, Alba is also an active member of Spanish Researchers in the UK, where she organizes scientific and outreach events, and is a member of the International Society of Experimental Hematology Publications Committee.

Dr Ioannis Akoumianakis (RDM Graduate Prize winner)

Regulation of vascular redox state in obesity and insulin resistance

CVM

Abstract
Insulin resistance and obesity affect vascular biology in more complex ways than previously thought, warranting intense investigation towards cardiometabolic risk reduction. This talk focuses on two novel aspects of this cardiometabolic interplay: a) the direct vascular effects of insulin signalling in atherosclerosis, and b) the endocrine and paracrine role of adipose tissue in vascular disease via secretion of Wnt5a, an emerging metabolic mediator.

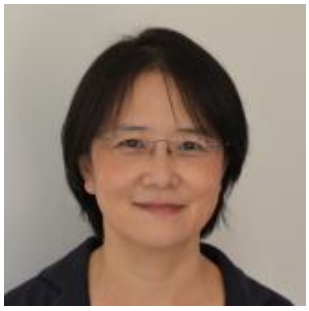
Aggressive glucose lowering with insulin does not improve cardiovascular outcome in diabetes, implying an effect of insulin beyond glucose lowering. The work presented here demonstrates that atherosclerosis is associated with vascular insulin resistance which directs abnormal insulin signalling towards oxidative stress and endothelial dysfunction. Crucially, dipeptidyl peptidase 4 inhibitors, a glucose-lowering drug class, are revealed as vascular insulin sensitizers via regulation of insulin receptor substrate 1 phosphorylation, restoring vasoprotective insulin responses. These findings dictate the need for vascular sensitisation and may change the way we treat diabetic patients.

Wnt5a is an adipokine which is upregulated in obesity, and has been implicated in vascular disease, the underlying mechanisms remaining unclear. In this work, Wnt5a is demonstrated as a major Wnt ligand secreted by various human adipose tissue depots, the bioavailability of which is increased in the circulation and perivascular adipose tissue in obesity. Wnt5a is also shown to predict atherosclerosis presence and progression. Mechanistically, it stimulates oxidative stress, downstream redox signalling and smooth muscle cell migration via a first-described non-canonical pathway involving USP17. These identify Wnt5a as a novel, targetable link between obesity and vascular disease.

Biography
After completing his medical degree, Ioannis joined RDM in 2014 to undertake a DPhil in Cardiovascular Medicine with Professor Antoniades. As part of the Oxford Translational Cardiovascular Research Group, he has contributed extensively to various projects exploring the crosstalk between adipose tissue (AT) and the vascular wall.

Ioannis's particular interest focuses on the vascular effects of insulin in atherosclerosis and how these are influenced by AT-secreted molecules. His DPhil work has resulted in novel findings regarding the presence of vascular insulin resistance, regulation of vascular insulin signalling in atherosclerosis and description of novel vascular pathways triggered by AT-derived Wnt5a, an emerging cardiometabolic regulator.

He has contributed to the Oxford cohort for Heart, Vessels and Fat (OxHVF), one of the largest biobanks of patients undergoing cardiac surgery. He has also published several high impact publications and presented his work at esteemed conferences such as the European Society Cardiology Congress, the American Heart Association Scientific Sessions, and others. He has also received several distinctions such as a European Society Cardiology Congress Young Investigator's Award and a British Atherosclerosis Society Congress Early Career Award.



Professor Tao Dong

The role of antigen-specific T cell responses in SARS-CoV-2 infection

MRC Human Immunology Unit (HIU)/WIMM/IMD

Abstract
Since the start of the COVID-19 pandemic, Tao's lab has been working with colleagues in Oxford and China testing samples taken from SARS-CoV-2 positive patients to understand why some patients with a COVID-19 infection are able to fight it off successfully, while others become severely ill. In particular, they are focused on the role of SARS-CoV-2 specific T cell responses in the pathogenesis of COVID-19. They have recently demonstrated broad and strong T cell responses induced in COVID-19 recovered patients. Relatively greater M and NP-specific CD8+ T cell responses were found in patients with mild disease. They also identified six immunodominant epitope clusters and optimized CD8 dominant epitopes (Peng et al, Nature Immunology 2020). They are currently focusing on characterising immunodominant T cell responses in detail at the single cell level, with the aim to understand the key factors which might contribute to immune protection or pathogenesis of the disease, such as T cell receptor usage, antigen sensitivity, cytotoxic potential, antiviral activity, migration capacity, and ability to contain potential mutations within the epitopes. These findings will inform our understanding of COVID-19 and future approaches to vaccination and treatment.

Biography
Tao became Professor of Immunology in the MRC Human Immunology Unit at Oxford University in 2014, and is a Senior Fellow at University College, Oxford. She is founding director of Chinese Academy of Medical Sciences (CAMS) Oxford joint international Centre for Translational Immunology since 2013, and founding director (Oxford) of CAMS Oxford Institute, Oxford University since 2019. Tao originally gained a BSc degree in Physiology from Fudan University, Shanghai, China in 1987. She moved to Oxford University in 1993 where she received a DPhil degree in Immunology in 1998 under the supervision of Professors Sarah Rowland-Jones and Sir Andrew McMichael on qualitative changes in HIV-specific cytotoxic T cells associated with HIV disease progression. During her postdoctoral training, she continued to study immune responses to HIV and expanded her research interests to include work on influenza virus infection, which led her to start her own independent research group. In 2010, she became the Head of the human anti-viral and anti-cancer cytotoxic T cell laboratory and a Program Leader in the MRC Human Immunology Unit at Oxford University. Since 2013, the main focus of her research has expanded to cancer, with a central goal being to identify determinants of the ability of tumour-specific cytotoxic T cells to control human tumour development and metastasis.

Dr Adam Lewandowski

Acute and chronic cardiac adaptations in adults born preterm

CVM

Abstract

Preterm birth (<37 weeks' gestation) affects more than 10% of live births worldwide and associates with significant cardiovascular risk in later life, including early heart failure, ischaemic heart disease, hypertension, and early cardiovascular-related mortality. Cardiac phenotypic alterations that may underlie their increased cardiovascular disease risk have been reported during different developmental stages in nearly 40 unique observational studies over the past 10 years, which we have recently analysed as part of a meta-analysis. Animal models of preterm birth, particularly in sheep and rats, have provided insights into potential underlying mechanisms for these changes, displaying a similar phenotype to human studies including greater myocardial hypertrophy, as well as lower systolic and diastolic function. Furthermore, they display elevated interstitial fibrosis and are less able to cope with drug-induced hemodynamic stress.

Our current work in humans has shown that young adults born preterm have a lower capacity to increase left ventricular systolic function at moderate to high intensity exercise levels. This functional systolic impairment predicts their known limitations in maximal exercise capacity and recovery. Furthermore, we have shown that there is a 2.5-fold greater rise in left ventricular mass index per 1mmHg elevation in systolic blood pressure in very and extremely preterm-born adults (<32 weeks' gestation) and a 1.6-fold greater rise in left ventricular mass index per 1mmHg elevation in systolic blood pressure increase in moderately preterm-born adults (32-36 weeks' gestation). Finally, we have demonstrated evidence of greater diffuse myocardial fibrosis in the left ventricle in preterm-born young adults that relates to the degree of prematurity as well as impairments in diastolic function. This talk will provide an overview of this recent work and ongoing longitudinal and intervention studies using rest and stress imaging to better understand these cardiac changes.

Biography

Adam is currently a University Research Lecturer and British Heart Foundation Intermediate Research Fellow. He is also a Research Fellow and College Lecturer in Systems Physiology at St Peter's College, Oxford and the Deputy Director of the Oxford Cardiovascular Clinical Research Facility. Previously, Adam studied biological and biomedical sciences in Canada before pursuing his DPhil in the Division of Cardiovascular Medicine funded by a Commonwealth Scholarship.

One of the primary areas of research conducted by his team is investigating the immediate and long-term impact of preterm birth on cardiovascular and systems physiology. His observational and interventional research studies in people born preterm involve a combination of multi-modality imaging, physiological stress testing, as well as blood sample collection to study potential cellular pathways.

Dr Robert Beagrie

In vivo dynamics of transcription, chromatin and genome organization during mouse erythroid differentiation

MHU/WIMM/NDCLS

Abstract
The activation of terminal erythroid genes, in particular the two globin loci, has long been a key model for understanding the general principles of mammalian gene expression regulation. Work from many labs has shown that such developmental genes are often controlled by regulatory elements, which interact within Topologically Associating Domains (TADs). However, the relationship between activation of regulatory elements, formation of structural chromatin interactions and gene expression during development is unclear. We use *in vivo* mouse erythroid differentiation to study the early chromatin reorganization events that erythroid gene loci undergo prior to their transcriptional activation in terminal erythropoiesis.

Integrated analysis of chromatin accessibility and single-cell expression data shows that regulatory elements gradually become accessible within pre-existing TADs during early differentiation. We use Tiled-C, a new low-input Chromosome Conformation Capture (3C) technique, to examine the subsequent structural re-organization within these TADs and formation of specific contacts between enhancers and promoters. Our high-resolution data show that these enhancer-promoter interactions are not established prior to gene expression, but formed gradually during differentiation, concomitant with progressive upregulation of gene activity. Together, these results provide new insight into the close, interdependent relationship between chromatin architecture and gene regulation during erythropoiesis.

Biography
Robert is a Sir Henry Wellcome Postdoctoral Fellow working with Professor Doug Higgs in the MRC Weatherall Institute of Molecular Medicine on regulatory regions of DNA called enhancers and how they function to regulate gene expression.

Robert studied Biochemistry as an undergraduate at Cambridge University and completed his PhD at Imperial College supervised by Professor Ana Pombo, who subsequently moved to the Max Delbruck Centre in Berlin. For his doctoral project, he developed Genome Architecture Mapping (GAM), a new technology for measuring the complex folding of DNA in the 3D space of the nucleus, which works by isolating hundreds of thin slices from individual nuclei and sequencing their DNA content.

Whilst working on GAM, Robert developed a passion for enhancer biology and a keen interest in the mechanism by which enhancers activate expression of their target genes. His Sir Henry Wellcome Postdoctoral Fellowship aims to dissect the mechanisms driving gene activation by enhancers during red blood cell differentiation. The project began in April 2018 and is a collaboration with Professor Merav Socolovsky (UMass Medical School).

Associate Professor Svetlana Reilly

Towards 'hormonal therapeutics' in atrial fibrillation: novel role of calcitonin signaling in atrial fibrogenesis and arrhythmia

CVM

Abstract

Rationale - Atrial fibrillation (AF), the most common cardiac arrhythmia, is a major contributor to population mortality and morbidity, particularly stroke-risk. Atrial-tissue fibrosis is a central pathophysiological feature and hampers AF-treatment; the underlying molecular mechanisms are poorly understood and present therapies are inadequate.

Results - Here, we show that calcitonin (CT), a well-recognized hormone product of the thyroid gland involved in bone metabolism, is produced in significant quantities by atrial cardiomyocytes and acts in a paracrine fashion on neighbouring collagen-producing fibroblasts to control their proliferation and secretion of extracellular matrix proteins. Global disruption of CT-receptor signalling in mice causes atrial fibrosis and increases AF susceptibility. Atrial-specific knockdown (KD) of CT in atrial-targeted liver-kinase B1 (LKB1)-KD mice promotes atrial fibrosis and prolongs/increases the number of spontaneous AF-episodes, while atrial-specific CT overexpression prevents fibrosis and AF in LKB1-KD mice. Patients with persistent AF are characterised by six-fold reduction in myocardial CT levels and by loss of fibroblast membrane CT receptors. Transcriptome analysis of human atrial fibroblasts exposed to CT show little change, whereas proteomic analysis indicates extensive alterations in extracellular-matrix proteins and pathways related to fibrogenesis, infection/immune responses and transcriptional regulation.

Conclusions - Strategies to restore disrupted myocardial CT signalling may offer new therapeutic avenues for patients with AF.

The talk will be based on the article published in journal Nature, 4th November, 2020, DOI: 10.1038/s41586-020-2890-8; PMID: 33149301.

Biography

Svetlana graduated in medicine in 1998 in Russia and worked as a general physician until moving to the UK in 2005. At that time she was offered a DPhil program in basic science with Professor Barbara Casadei at the University of Oxford (the Queens' College). The work carried out during the following years led to the award of the Transitional Fellowship by the British Heart Foundation (BHF) Oxford Centre of Excellence (2013) and a BHF Intermediate Fellowship in basic science in 2016. She is currently an Associate Professor in Cardiovascular Science and PI in RDM.

Her research group in RDM aims to understand the microRNA-mediated mechanisms fundamental to cardiac fibrosis and electrical remodelling that are associated with atrial fibrillation (a very common rhythm disorder). They are particularly interested in functional cross-talk between two major cell types in the heart – myocytes and fibroblasts.

Professor Jeremy Tomlinson

Combatting the adverse effects of steroids

OCDEM

Abstract

Steroids are commonly prescribed for a variety of medical conditions, but their use is associated with significant adverse metabolic and bone effects. Currently, 1-2% of the population of the UK are taking prescribed steroid medication. Based upon clinical observations in patients with circulating steroid excess (Cushing's syndrome), we proposed that '*pre-receptor'* metabolism of steroid hormones was a critical step in regulating clinical phenotype. Through the development of animal models which led directly to translational clinical studies, we have shown that the enzyme 11β-hydroxysteroid dehydrogenase type 1 (11β-HSD1) regenerates active steroid within metabolically active tissues and regulates exogenous steroid exposure. The targeting of 11β-HSD1 activity using highly potent selective inhibitors prevented the development of a classical 'Cushing's phenotype' of steroid excess. Taken together, these studies suggest that 11β-HSD1 inhibitors may represent an entirely novel approach to limit the adverse effects of steroid hormone excess.

Biography

Jeremy graduated from the University of Oxford Medical School in 1995, having previously completed his undergraduate degree at the University of Cambridge. He embarked upon a career in Diabetes and Endocrinology and secured an MRC Clinical Training Fellowship and obtained his PhD from University of Birmingham studying steroid metabolism and human obesity in 2003. Subsequently he obtained fellowships from the Wellcome Trust and MRC and is now Professor of Metabolic Endocrinology and consultant endocrinologist based in the Oxford Centre for Diabetes, Endocrinology and Metabolism (OCDEM), University of Oxford. His research investigates the pathogenesis of metabolic disease and has a specific focus on the role of endogenous and exogenous steroids and their metabolism.

Professor Ronjon Chakraverty

The transition from acute to chronic graft-versus-host disease

MHU/WIMM/NDCLS

Abstract
Allogeneic haematopoietic transplantation is an important therapy for patients with blood cancers, but is frequently complicated by immune-related adverse events. Acute graft-versus-host disease (GVHD) is initially triggered by alloreactive T cells, which damage peripheral tissues and lymphoid organs. Subsequent transition to chronic GVHD involves the emergence of autoimmunity, although the underlying mechanisms driving this process are unclear. Previous work has shown that acute GVHD targets the thymus and disrupts central tolerance, the process by which T cells reactive against self-antigens are eliminated from the repertoire. We have tested the hypothesis that acute GVHD also blocks peripheral tolerance of autoreactive T cells by impairing lymph node display of peripheral tissue–restricted antigens (PTAs). At the initiation of GVHD, LN fibroblastic reticular cells (FRCs) rapidly reduced expression of genes regulated by DEAF1, an autoimmune regulator-like transcription factor required for intranodal expression of PTAs. Subsequently, GVHD led to the selective elimination of the FRC population, and blocked the repair pathways required for its regeneration. We used a transgenic mouse model to show that the loss of presentation of an intestinal PTA by FRCs during GVHD resulted in the activation of autoaggressive T cells and gut injury. We found that FRCs normally expressed a unique PTA gene signature that was highly enriched for genes expressed in the target organs affected by chronic GVHD. Thus, repair of stromal populations in lymphoid organs and restoration of PTA display may be essential to prevent the transition from acute to chronic GVHD.

Biography
Ronjon obtained his medical degree from the University of Birmingham before training in internal medicine and haematology in Cambridge and Oxford. He joined Professor Ian Hickson's DNA repair laboratory at the WIMM as an MRC Clinical Training Fellow for his PhD studies. In 2000, he was awarded a LRF Bennett Senior Fellowship in Experimental Haematology and joined Professor Megan Sykes' laboratory at the Transplant Biology Research Center, Harvard Medical School; here, his post-doctoral research focussed upon the mechanisms that regulate immune tolerance following reduced haematopoietic transplantation. He joined UCL in 2005, where he led several innovations to improve the therapeutic index of transplantation including optimization of methods for T cell depletion, graft engineering and addback of selected T cell populations. In 2020, he joined the University of Oxford as Professor of Haematology, where he is now leading efforts to create infrastructure required for delivery of first-in-human trials in advanced cell and gene therapy. His research is centred on exploring mechanisms that dictate the success or failure of T cell immunotherapies for cancer, using pre-clinical models and patient samples to inform the design of new strategies that can be translated into early phase clinical trials. He is the Medical Director of IMPACT, one of the first trial acceleration programs for transplantation and cellular therapy worldwide, and oversees the delivery of the national portfolio of prospective intervention trials across over 20 centres in the UK.

RDM Working Groups and Committees

RDM Career Development Committee

The RDM Career Development Committee (CDC) exists to support the career development of all staff and students across RDM.

The CDC plays a key role in raising awareness of career opportunities across the department, in providing training and support at key career transitions and in championing career development. It is responsible for delivering a number of actions in the Athena Swan Silver Action Plan. The committee is balanced across the RDM divisions and staff groups, and is chaired by Professor Leanne Hodson.

In addition to all the courses available via the University the CDC puts on workshops and courses specifically for RDM staff and students. These are run throughout the year and are advertised via the RDM Weekly Bulletin. So far in 2021 the CDC has arranged 'So you want to be a PI? (January 2021)' and 'How to Network Effectively (March 2021)'. Please read the Bulletin for future events and workshops. The next course will take place on 20 April and is entitled "*Success in progressing your discoveries from curiosity-driven research into translational opportunities*". Please email cdc@rdm.ox.ac.uk to register to attend.

If you have any questions or suggestions for training and development, please contact cdc@rdm.ox.ac.uk

RDM Researcher Association

The RDM Researcher Association is a community that serves to enrich the researcher experience through social events, career development and advice. It is open to anyone involved in research within the department.

The Researcher Association liaise directly with the RDM Career Development Committee (CDC) to address any concerns and suggestions expressed by RDM researchers. While we have been unable to host events this year we have been working behind the scenes to improve our webpage on the internal RDM website, generating new content and ideas to help you with career progression, mental health support and skills training. Keep your eyes peeled for the launch of the new website pages which will be advertised in the RDM Weekly Bulletin. If you have any suggestions for events or initiatives please contact researcherassociation@rdm.ox.ac.uk.

As a committee we meet on the last Thursday of every month to discuss ideas and assign jobs for the month. We are always looking for new committee members so if you would like to get involved please contact researcherassociation@rdm.ox.ac.uk or any committee member.

Current committee members:

- Chair: Dannielle Wellington (Postdoc, WIMM)
- Treasurer: Jessica Forbester (Postdoc, WIMM)
- Communications: Naveed Akbar (Postdoc, CVM)
- Academic Events: Matt Baxter (Postdoc, OCDEM)
- Social Events: Sion Parry (Postdoc, OCDEM)
- Other members: Shilpa Nagarajan (Postdoc, OCDEM) and Daan Paget (DPhil, CVM)

RDM Education Group

The RDM Education Group was established to enhance faculty development for those with teaching responsibilities, to widen access to teaching opportunities, and to undertake research in medical education.

New initiatives for 2021 include the RDM Science Education Prize (Deadline May 10th! See details on the RDM website), showcasing RDM research to our undergraduate students while also providing teaching opportunities for scientists and clinicians across the department, and honorary clinical teaching fellowships which recognise non-consultant NHS staff who make a sustained contribution to teaching in RDM.

The group has also launched a new Tutorial Teaching Mentoring Programme in Hilary term. This course imparts first notions on how to motivate students and implement inclusive teaching and provides first-hand experience on how to prepare and run a tutorial by participating in a practical session and creating your own sessions with the help and feedback of RDM senior tutors.

Join the RDM Education Working group

The group is currently recruiting up to three new members with special interest in post graduate students and post docs. If you are interested in developing new initiatives or being involved in the running of the RDM teaching prize or tutorial teaching mentoring scheme, please get in touch ug.teaching@rdm.ox.ac.uk

Graduate Studies

The Graduate Studies Team provide support for all DPhil students across RDM.

Professor Marella de Bruijn, RDM Director of Graduate Studies, is supported by a team of Graduate Advisors in each of RDM's Divisions and a dedicated Graduate Studies Manager, Jill Walker, who can offer support and advice on all procedural and administrative issues affecting RDM students.

The Graduate Studies Committee meets regularly through the year to make decisions about graduate studies matters. Professor de Bruijn also chairs the Student Forum which comprises student representatives from across RDM and allows students to feedback on their DPhil experiences.

If you have any questions please email them to graduate.enquiries@rdm.ox.ac.uk

Environment and Culture Working Group

The Environment and Culture Working Group (EACWG) draws down from the experiences of staff and student to formulate events, initiatives and activities to develop positive cultural change.

Aim

Actions and initiatives that support, encourage and augment a positive cultural change to ensure that staff are effective, happy and supported with their working lives across RDM. Actions and initiatives that support, encourage and develop integration across the RDM Divisions.

Rationale
A positive culture change is best achieved through collecting, developing and implementing ideas from a range of viewpoints and priorities. Working together the RDM Divisions can achieve much more than if they work in isolation.

Actions
Identifying the issues and barriers that stand in the way of positive cultural change, and developing and implementing initiatives to address these.

The group will draw on the experiences of its staff, and formulate events, initiatives and activities that either develop further understanding of the challenges preventing positive cultural change, or are designed to encourage such change. The group will also seek and utilise expert advice from people internal and external to the University.

Over the last year the EACWG have: published the Respectful Behaviours Framework; run and published the COVID Response Survey; supported staff to attend Mental Health First Aid Training; run a Wikipedia Editathon (with NDCN); supported the Medical Sciences Divisional Office with the #100WomenOfOxfordMedSci campaign, and put together the "Career stories, meet the Women of RDM" for International Women's Day 2021.

RDM Mentoring Scheme

Mentoring is a powerful personal development tool that has been available to all staff and students in RDM since 2014 and is supported by the RDM Mentoring Committee

The benefits of mentoring include:

For mentees:

- ✓ *Learn from the experience of others*
- ✓ *Gain practical advice, encouragement and support*
- ✓ *Become empowered to make decisions*
- ✓ *Develop communication skills*
- ✓ *Identify goals*
- ✓ *Help to navigate a new organisation*

For mentors:

- ✓ *Opportunity to give something back*
- ✓ *Improve communication and personal skills*
- ✓ *Enhance your CV*
- ✓ *Develop leadership and management qualities*
- ✓ *Engage in a volunteering opportunity - valued by employers*

We encourage all staff/student groups and grades to become a mentor and/or mentee. If you have any questions, please visit the RDM website, where you can also register to be a part of the mentoring scheme.

Student opportunity

The RDM Mentoring Committee is currently looking to recruit a student to give valuable input into the running of the mentoring scheme. If you have any questions about this opportunity, please get in touch via mentoring@rdm.ox.ac.uk.

Previous student representative feedback: *"Sitting on the RDM Mentoring committee has been an excellent experience, providing the opportunity to contribute to a hugely successful scheme with a great positive impact. It has been a pleasure to be part of a committee that is so enthused and committed to sustaining its success and development, as well as implementing new concepts to achieve emerging objectives. Sitting on the committee is also a great way to gain insight into department structure and the wider organisation."*

Support with Funding

Within RDM we offer a range of support when applying for funding. All of the below can be found in the Find Funding section of the RDM website.

1. **Funding Database**
   A detailed database of available funding opportunities.

2. **Funding Bulletin**
   This is produced termly and contains information on upcoming internal and some external funding opportunities, particularly fellowships. This bulletin is also where we disseminate information about any RDM internal deadlines. It is emailed to all staff and students and can be found on the Find Funding section of the RDM website.

3. **Coordination of Fellowship Applications**
   RDM provides support with all applications for external fellowships, from identifying suitable funders through to providing mock interviews.

4. **Support with applying for internal University funding**
   One on one advice and guidance is available to researchers applying for internal University funding. All applications for internal funding are peer reviewed within the department prior to submission, to ensure the strongest applications are submitted. Below are upcoming internal funding opportunities:

Internal Funding Opportunities	Deadline
John Fell Fund (JFF)	RDM internal deadline 7 April 2021 (noon)
Oxford-Bristol Myers Squibb (BMS) Fellowships	Full application: 14 April 2021 (5pm)
Oxfordshire Health Services Research Committee (OHSRC) Research Grants	15 April 2021
Returning Carers' Fund	RDM internal deadline 26 May 2021 (noon)
Lab282 Awards	5 June 2021
The University Challenge Seed Fund	Rolling deadline

5. **One on one meetings**
   We provide one on one support for researchers who are thinking about applying for funding but are unsure about where to begin. If you have any funding related questions, please drop us an email at funding@rdm.ox.ac.uk.

Key contacts for funding support

RDM Research Strategy and Funding team

	Position	Contact me for…
Dr Ruth McCaffrey	Research Strategy Coordinator	One-on-one meetings, career development, letters of support from the Head of Department, Research Excellence Framework (REF)
Dr Serena Briant	Research Facilitator and Programme Manager for the Novo Nordisk-Oxford Fellowship Programme	One-on-one meetings, fellowship applications, internal funding, letters of support from the Head of Department if you are based in the WIMM, NDCLS or IMD; and the Novo Nordisk-Oxford Fellowship Programme (nn.fellowships@rdm.ox.ac.uk)
Dr Kathleen Dolan	Research Facilitator and Operations Manager for the Novo Nordisk-Oxford Fellowship Programme	One-on-one meetings, fellowship applications, internal funding, letters of support from the Head of Department if you are based in CVM or OCDEM; and the Novo Nordisk-Oxford Fellowship Programme (nn.fellowships@rdm.ox.ac.uk)

RDM divisional finance contacts

Each RDM divisional admin team is responsible for creating an X5 costing for all funding applications. They should be involved in your application from the earliest opportunity and will submit your application to Research Services at least five days before the funder deadline. Please contact the following for assistance:

	Email address	RDM division
Emma Burke-Smith	cvm_grants@cardiov.ox.ac.uk	CVM
James Dean	james.dean@ndm.ox.ac.uk	HIU WIMM and IMD
Mark Evans	finance@ndcls.ox.ac.uk	NDCLS
Noëlle Obers	grants@imm.ox.ac.uk	WIMM NDCLS and WIMM Core
Lynne Whay	grants@ocdem.ox.ac.uk	OCDEM

Communications

Want to get the word out about your work? Are you organising an event or initiative that you think RDM staff and students should know about? Contact the RDM Communications and Engagement Manager Dr Charvy Narain (charvy.narain@rdm.ox.ac.uk). She can help with:

External communications, including:

- Press releases and media management: Get in touch when your paper is in the final round of review, for help writing and releasing a press release.
- News stories on the RDM website: Got a new paper you're especially proud of? Won an award? We're always looking for news stories to publicise on the RDM website.
- RDM twitter feed: We've got nearly 3,000 followers from an engaged research community, and from discussing papers to doing 'Twitter takeovers' where you tweet about a day/week in the life or your lab, we're always looking for material.

Internal communications, including:
RDM Weekly Bulletin: the weekly bulletin is emailed out to all RDM staff and students, and aims to provide a short summary of relevant information.

Public Engagement

Public engagement with research is a fantastic way to inspire audiences about your work, work with new communities to further your research, and acquire communication skills which will stand you in good stead whatever you go on to do. The call for ideas for the following event is now open: get in touch if you have an idea for hands-on activities, a talk, panel discussion, or an event, for the festival below or at another event or venue (including school visits). Don't worry if your idea still needs development: we can offer lots of help and support, including limited funding to pay for materials etc. Contact Dr Charvy Narain at charvy.narain@rdm.ox.ac.uk.

Ideas Festival 9-25 October 2021

Call for expressions of interest now open, and closes Friday 30 April. Get in touch well before the deadline.

Mental Health Support in RDM

RDM Mental Health First Aid

We have a number of RDM staff who are accredited mental health first-aiders (MHFA). They all completed the course run by the Oxford based mental health charity Restore and accredited by Mental Health England.

MHFA teaches people to spot the signs of mental health issues and guide a person towards support. It does not teach people to be therapists, but does teach people how to respond in a crisis.

Our Mental Health First Aiders aim to have:

- an in-depth understanding of mental health and the factors that can affect well-being;
- practical skills to spot the triggers and signs of a range of mental health issues;
- confidence to step in, reassure and support a person in distress using the Mental Health First Aid action plan;
- enhanced interpersonal skills such as non-judgemental listening;
- knowledge to help someone recover their health by guiding them to further support - whether through self-help resources, internal support, or external sources such as their GP; and
- an understanding of how to keep themselves safe while performing their duties.

If you would like to talk, please feel free to get in touch with any of the mental health first aiders, and we also encourage you to pass on this information to anyone in RDM who you think might value having a chat.

If you would like to speak to any of the MHFA, please see the information on the RDM website.

University Mental Health Support

The University provides health and counselling information for both staff and students, including the TogetherAll website (select "I'm from a University or College") and the staff counselling services. These services are there for you: please don't hesitate to use them. Links to a more extensive list is available on the front page of the RDM website.

The University Student Wellbeing and Mental Health Strategy adopts a holistic approach to mental health and wellbeing – covering all aspects of students' university experience – from learning and life skills to community, inclusion, and support.

External Mental Health Support

There are a number of external websites below which you may useful:

- MIND: provide advice and support to empower anyone experiencing a mental health problem. They campaign to improve services, raise awareness and promote understanding.
- Restore: Restore is an Oxfordshire-based mental health charity that supports people to take control of their recovery, develop skills and lead meaningful lives. They offer recovery groups, training and employment coaching to make this possible.
- NHS: Mental health and wellbeing, if you're feeling stressed, anxious or depressed, or just want to feel happier, they're there to help.

Have you completed your mandatory training?

RDM wish to foster an inclusive culture in the department that promotes equality, values diversity and maintains a working, learning and social environment in which the rights and dignity of all staff and students are respected. To help us meet this goal, we have made the following training courses mandatory for all staff in RDM:

- Equality and Diversity Briefing (online provided by People and Organisational Development)
- Challenging Behaviour (online provided by People and Organisational Development)
- Implicit Bias in the Workplace (online provided by People and Organisational Development)
- Display Screen Equipment (DSE) self-assessment (online provided by the Safety Office)
- Information Security Training (online provided by Information Security Office)

The following courses are also mandatory by role:

- Research Integrity (for all University research staff)
- Recruitment and Selection (for anyone involved in recruitment, online provided by People and Organisational Development)
- Line management training (for line managers only, online provided by People and Organisational Development)
- DPhil supervision at Oxford (Sciences) PLEASE ENSURE YOU CHOOSE THE **SCIENCES** OPTION (for all DPhil supervisors, online provided by Centre for Teaching and Learning)

Anti-Bullying and Harassment

RDM is committed to eliminating bullying and harassment. All staff and students are requested to undertake the University Challenging Behaviours courses. There are also a number of videos covering the Impact of micro-behaviours in the workplace.

RDM has a large number of Harassment Advisors who are there to help, enabling staff and students find the support they need. Harassment Advisor details can be found at on the RDM website and if you are interested in becoming a harassment advisor, you are welcomed to sign up on the University Equality and Diversity unit pages.

Bullying is a form of harassment. A person subjects another to harassment where they engage in unwanted and unwarranted conduct which has the purpose or effect of: *violating another person's dignity, or creating an intimidating, hostile, degrading, humiliating or offensive environment for another person.*

- The University's definition of harassment and bullying can be found in the University's policy and procedure on harassment and bullying.
- Complaints of harassment and bullying can be dealt with formally or informally. Information on how to make complaints can be found in the University's policy and procedure on harassment and bullying. Information can also be found in the Harassment Procedure Flowchart for Staff and the Harassment Procedure Flowchart for Students.
- It is part of the University's policy that all complaints are dealt with in the strictest of confidence.
- Anti-bullying and harassment training is mandated for all staff within RDM and should be completed on-line. Training is valid for three years.

Oxford Against Sexual Violence is a joint campaign between the University and Oxford University's student union (Oxford SU) sending a clear message that sexual harassment and violence of any form is unacceptable.

RDM Respectful Behaviours Framework

The Respectful Behaviours Framework was initiated in response to earlier staff and student survey results; conversations across RDM; work from the Environment and Culture Working Group; and discussions with RDM Harassment Advisors. This information was combined with desk research which looked at how other organisations have been tackling behavioural questions. Using this material, we put together the framework below, which we have primarily focussed as a guide of good behaviours. In December 2020 the framework was opened to all within RDM for additional comments via the internal RDM website. In January 2021 it was confirmed and made available to all.

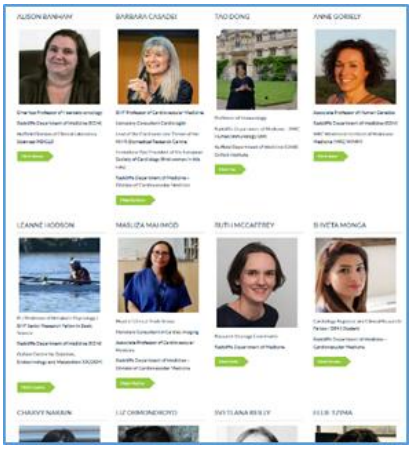
This framework supplements the University policy on anti-bullying and harassment and will be included with further particulars for jobs, inductions, used in PDR conversations, it is accessible on the RDM website for all to read and act upon.

	Effective behaviours – do you…?	**Ineffective behaviours – do you…?**
Communication	• Communicate regularly with colleagues at all levels. • Proactively share appropriate information and encourage others to do so. • Use communication styles appropriate to your audience. • Encourage two way communication. • Use inclusive and appropriate language. • Present information to promote understanding. • Listen and ask questions in order to understand. • Consider the communications systems and methods you use to be accessible. • Ensure that individuals who are remote working have effective and responsive communication channels.	• React defensively to feedback. • Use jargon inappropriate to the audience. • Interrupt. • Talk or write at inappropriate length. • 'Guard' information. • Not credit others for their work. • Refuse to acknowledge the point of view of others.
Embracing change	• Create an environment that encourages innovation and is receptive to change. • Articulate the rationale for change and keep others informed. • Plan and monitor change initiatives. • Respond to change in an objective manner. • Recognise that there can be an emotional reaction to change and manage this thoughtfully.	• Not involve stakeholders. • Focus on the barriers to change. • Find negative reactions excessively limiting. • Consistently dismiss and disrupt drivers for change. • Fail to build on others' ideas for change. • Complain and don't act to make change.

	Effective behaviours – do you…?	Ineffective behaviours – do you…?
Personal & Professional development	• Show commitment to your own personal and professional development and actively encourage others to do the same. • Ensure equal access to development opportunities. • Reflect on your own performance. • Seek and learn from feedback. • Foster an open environment in which new ways of working are encouraged.	• Limit development of self or others. • Do not engage with development opportunities. • Think training without support will 'fix' development issues. • Not transfer learning to work.
Valuing diversity	• Treat individuals with dignity, respect, courtesy and consideration. • Are aware of, and respect, cultural and social differences. • Recognise and value the contributions of different viewpoints. • Display integrity and ethical behaviour. • Challenge actions and words which do not support diversity and equality. • Role-model high standards of behaviour.	• Unfairly criticise colleagues. • Avoid responsibilities. • Not recognise own potential for bias.
Leadership	• Build commitment, engagement and a shared sense of purpose with those around you. • Articulate clear objectives. • Provide, and request regular and effective feedback. • Plan and organise workloads to meet deadlines within resource constraints. • Be mindful of other's priorities when organising tasks. • Be resilient and support those around you. • Differentiate between important and urgent tasks, prioritising effectively. • Give credit to, and celebrate the achievements of others. • When appropriate, involve others in decision making. • Identify reasons for disquiet or conflict and take measures to resolve them.	• Blame the system or others. • Not take responsibility for actions. • Not listen. • Ignore criticisms. • Use emotional instability as a method of control. • Not share information. • Avoid unpopular issues and decisions. • Inappropriately put personal agenda ahead of wider considerations. • Exert an oppressive level of control (micro-manage).

Equality, Diversity and Inclusion (EDI)

Since 2015 RDM has held a Silver Athena SWAN award in recognition of the gender equality work being done across the department. This silver award was renewed in 2019 where the application provided an evidence based evaluation of where we have made progress, and where we still have work to do. The application is based upon a substantial amount of data, and includes information from the 2016 and 2018 staff and student surveys. You can see the data; survey information; read our application and the action plan, on our website. Delivering the Athena SWAN action plan requires input from a large number of people across RDM and we are thankful for the commitment shown at every level.



For International Women's Day in 2021 we expanded on the Medical Sciences Division project '100 Women of Oxford Medical Sciences' to highlight some of the incredible women in RDM.

The University has a growing network of LGBT+ Role Models and Allies. Role Model training provides LGBT+ staff an opportunity, in a safe and supportive space, to explore what it means to be an LGBT+ role model, to identify potential barriers and ways to overcome them. Ally training aims to give non-LGBT+ staff an opportunity to explore what it means to be an ally, time to ask questions and practical advice on how they can be an effective ally. RDM already have some staff who have completed the workshops and become LGBT+ Role Models or Allies. LGBT+ support is made visible through RDM rainbow lanyards and pens, and RDM social media channels recognise awareness days and months. RDM staff have attended Gendered Intelligence and Stonewall workshops and fully support the University transgender policy.

RDM staff are members of the BME Staff Network and we support and encourage involvement with the newly formed Race Equality Task Force and BIPOC STEM (@BIPOC_STEM_NET on Twitter). Events are published in the Bulletin and shared on the RDM Twitter account (@RDMOxford).

If you would like to be know more about any of the EDI information above and if you have any thoughts about what more we can do, please contact charlotte.smith@rdm.ox.ac.uk.

Survey results: Reconciling work, private and family life during the COVID-19 pandemic at RDM

We thank all who took part in this survey, the openness and honesty in the responses are helping us understand how all in RDM are coping with the pandemic.

355 members of RDM (128 non clinical research; 89 clinical research; 85 administrative; 34 students) took part in the survey and answered open, and demographic, questions between 18th September and 9th October 2020. Response to all questions was optional.

The results from the survey have already been used by the Head of Department during the All RDM meeting in February 2021. A summary overview has been shared with Heads of Divisions and Lead Administrators.

Whilst some of the results may seem intuitive, it is helpful to know that these responses are from our colleagues who are showing us the complexities of their situations, and the results provide a relevant reminder about how different everyone's experiences are.

Key points

- Respondents whose work requires access to laboratories or involves clinical research reported major impacts of COVID 19 restrictions on work.
- Staff and students whose contracts are time-limited reported anxieties about the future.
- Some reported their workload has increased due to the pandemic.
- Respondents with young children, and those new to the Department have experienced particular challenges.
- Many have missed the professional and social aspects of interactions with colleagues while working offsite.
- Many have made adaptations, such as re-prioritising work and using remote meetings.
- Half of responses referred to a negative impact on work/life balance; developing a routine was considered key to maintaining a satisfactory work/life balance.
- Depending upon role, some respondents found that their productivity was the same, or increased whilst working remotely: reduced commuting time; fewer distractions and having more flexibility within their households.
- Respondents have a very positive attitude towards flexible working options, envisaging future work patterns involving a blend of on and off-site working, and online and in-person meetings.

This survey was undertaken by the RDM Environment and Culture Working Group.