

Experts in Women's Health



Established in 1937, we have been innovating, teaching, pioneering and evolving women's health for more than 80 years. The Nuffield Department of Women's & Reproductive Health is one of the largest and most successful academic departments in the world in its field. Led by Prof Krina Zondervan, we have over 160 members including senior academic staff, clinicians, research support staff, professional staff and graduate students carrying out research towards a higher degree.

What we do



Our department encompasses multi-disciplinary research across the full spectrum of women's health.

Our work has four overarching themes; Cancer, Global Health, Maternal & Fetal Health and Reproductive Medicine & Genetics.

We focus on genetic studies, the dissection of molecular, biochemical and cellular mechanisms underlying normal and aberrant reproductive tissue function, clinical studies in women's health and pregnancy and growth and development across the first 1000 days of life.

Where we work

Our clinical and laboratory-based research programmes are based in the Women's Centre, the Weatherall Institute of Molecular Medicine (both at the John Radcliffe Hospital, Oxford) and the Institute of Reproductive Sciences (IRS) and the Big Data Institute.

The department's main offices are on level 3 of the Women's Centre (John Radcliffe Hospital, Oxford) which is responsible for the care of over 7,000 pregnant women and over 7,500 new gynaecology patients per year.



Skills training in NDWRH

Learning and Development

Personal Development is a key part of your graduate career. In your first term, you will complete a compulsory training needs analysis with your supervisor to monitor your progress throughout your postgraduate degree. In your first term, you will upload it with your G

The Researcher Development Framework (RDF) is a helpful model for you to use. It describes the knowledge, behaviours and attitudes for you to think about areas in which you need to develop, and to identify what areas you're interested in developing (or are

Click on the links below for further learning and development resources.

Student Development Resources

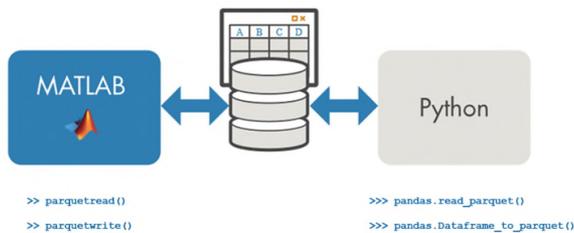


UNIVERSITY OF OXFORD **GoSy** POWERED BY ACCESSPLANT
 SHARED TRAINING MANAGEMENT SOLUTION

WELCOME KARL MORTEN

Resume Course Search

The Hub



MATLAB training

Online training at the University

Medical Sciences Division Skills Training Programme

The Medical Sciences Division seeks to equip all graduate research students with a comprehensive set of transferable and research skills. The aim is to maximise each researcher's potential, enabling participants to see beyond the day-to-day demands of their own research. Students build the foundation for a successful career through communication, networking and team-building as well as through excelling in their own research area. As a guide, the Research Councils recommend that graduate students spend 10 days a year on additional skills training.

The Division's programme consists of over 60 short courses, ranging in length from half a day to 30 days, as well as luncheon seminars run on the Division's three sites (John Radcliffe Hospital, Churchill Hospital and South Parks Road). The programme supplements departmental training and provides additional networking opportunities across the Division and promoting interdisciplinary collaborations.

Students and their supervisors are strongly encouraged during their first term and throughout the course of their studies to spend time revisiting their individual training requirements, planning a training timetable and developing their CV. In addition both supervisors and students are encouraged to use the facility within GSR to record training requirements which are then fed back to the Training Officer to follow up and offer advice regarding the availability of courses and events which would fulfil their training requirements.

There are a wide range of courses offered by the MSD Skills Training Programme which cover both professional skills and personal development. Courses under Research and Study Skills cover research techniques, ethics, data analysis and statistics. The most appropriate timing for you to attend these courses will depend on the nature of your research.

There are a number of courses to assist postgraduate researchers in developing effective communication skills, including a range of Writing and Presentation Skills courses and English language courses for researchers whose first language is not English. The Division also encourages postgraduate students to be proactive in considering their career options, and runs careers workshops and seminars to provide support in this area.

Below is a suggestion for some of the courses that you should think about over the course of your graduate career:

First year	Second year	Third year
<ul style="list-style-type: none"> Academic Plagiarism Ethics: Introduction to Research Ethics How To Plan Your PhD Managing Your Supervisor Writing Skills for PhD Students: Reports Presentation Skills 	<ul style="list-style-type: none"> GRAD Challenge 7 secrets of highly successful research students Writing Skills Papers and Theses 	<ul style="list-style-type: none"> Organising Your Research for Publication Viva Preparation Preparation for Academic Practice Get that Job

MSD Skills Training Programme



The Oxford Centre for Fetal Monitoring Technologies

Group Leader: Assoc. Prof. Antoniya Georgieva



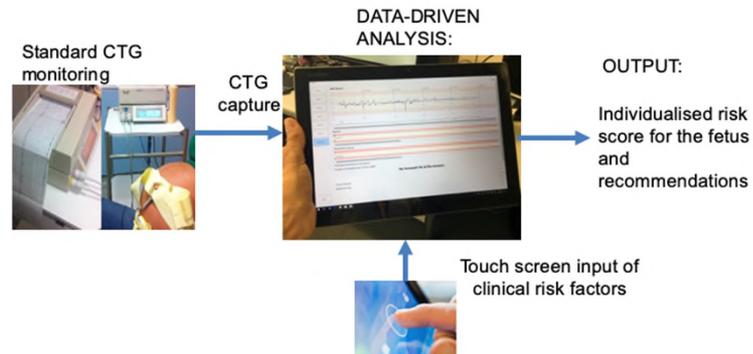
Concept & data

Routine maternity data
since 1993: 100,000
labours at term

Individual risk factors & characteristics

Data-driven risk assessment of the fetus

First research prototype



Multidisciplinary Team & Methods

Obstetrics, Midwifery &
Neonatology

Artificial Intelligence & Prognostic
models

Signal Processing

IT & Healthcare App development

Leading internationally



Mission: To improve endometriosis diagnosis & treatment
 >20 PIs, postdocs, research staff, students

Computational (gen)omic studies

- Genomic discovery
- Molecular phenotyping to identify disease subtypes
- Shared genetics with comorbid traits, e.g. auto-immunity, pain, fat distribution, 'behavioural' traits

Many Oxford collaborators, e.g.:
 Big Data Institute, Wellcome Centre Human Genetics,
 NDORMS, Target Discovery Institute, Dept of Sociology



Clinical studies

- Data/sample collection
- Deep clinical phenotyping
- Pain characterisation
- Pain sensitivity and 'vulnerability'
- Functional MRI of the brain

Tissue/cellular studies

- Endometrium: functional studies
- Immune cells (macrophages) & fat tissue
- Bulk and 'single-cell' genomics
- Biomarkers

Translation: collaborations with Pharma & Diagnostics companies

e.g. Bayer-Oxford Alliance, Roche Diagnostics, MDNA, Volition

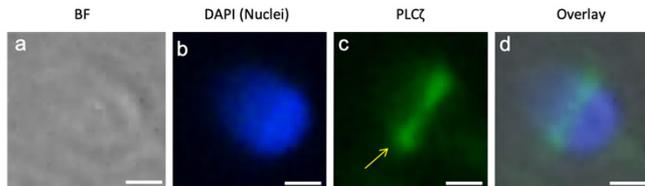
Assisted Reproductive Technology (ART) at the Institute for Reproductive Sciences



Coward Group [kevin.coward@wrh.ox.ac.uk]

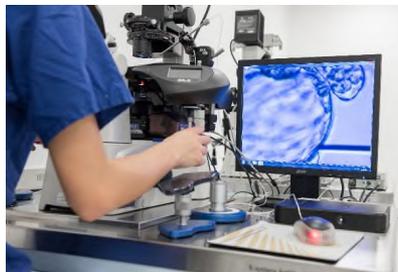
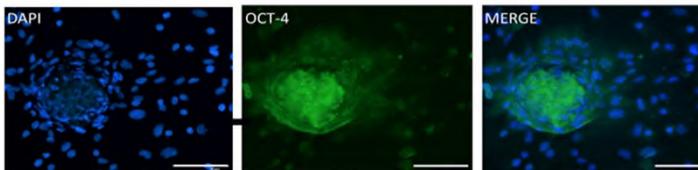
Spermatogenesis, male infertility, oocyte activation deficiency and phospholipase C zeta

Diagnostic assays/recombinant protein synthesis/patient screening/gene expression and the effects of genetic mutation

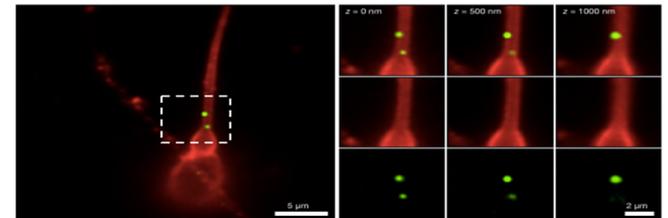


Fertility preservation in prepubertal boys with cancer

Developing optimized protocols for the cryopreservation of immature testicular tissue, investigating the effect of transport time between tissue acquisition and laboratory processing, evaluating the effect of cryopreservation/thawing on tissue viability and the development of three-dimensional bioreactors for *in vivo* spermatogenesis

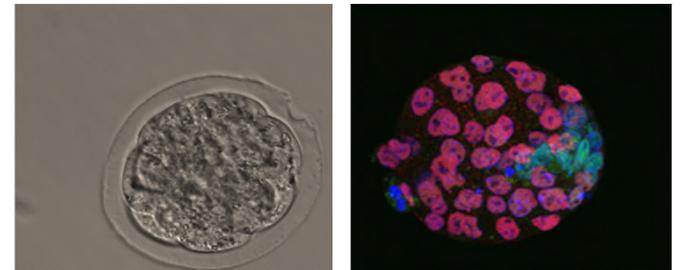


Development of nanoparticle- and exosome-mediated delivery systems for eggs, sperm and embryos as research tools and the development of novel diagnostics and therapeutics



The application of infra-red lasers in ART

Investigating the effects of infra-red laser systems on viability and gene expression during embryogenesis and implantation





Williams Lab

Developing ovary-focused fertility preservation techniques

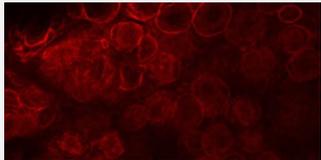


Cancer Patients

Aim: Grow human eggs from ovarian tissue in culture



Ovarian cortical strips



Developing novel imaging techniques to improve accuracy and speed

Fertoprotect

Aim: Protect the ovary from chemotherapy



Human and mouse in vitro and in vivo

Dysfunctional ovaries

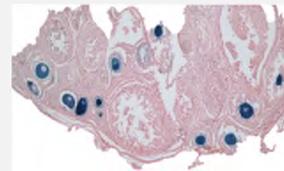
Primary Ovarian Insufficiency (POI)

Ovarian Cancer

Aim: Isolate and grow immature eggs from dysfunctional ovarian tissue



Mouse models of POI and ovarian cancer



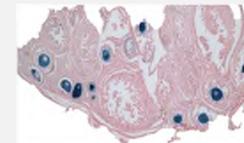
Reaggregated ovaries: blue oocytes from one mouse, somatic cells from another

Age

Aim: Determine how age affects ovarian function



Single cell RNAseq



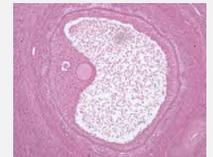
Reaggregated ovaries

Rhino Fertility Project

Aim: Grow rhino eggs from rhino ovaries



Rhino ovary



Rhino ovarian follicle

In vitro and in vivo



Transcriptomics