

WHRI Open Meeting

28 February 2018



CHIAROSCURO from War Trials to Clinical Trials

July 2017



Event at the St Bartholomew's Hospital commemorates the Holocaust's lasting influence on medical research

Former Nuremberg librarian Ralph Koltai CBE in conversation with actor Simon Callow and Dr David Collier from the WHRI Clinical Research Centre.

Trials of Nazi High Command by the Nuremberg Military Tribunal were followed by the 'Doctors' Trial — prosecution of Nazi doctors for illegal medical experiments in the death camps. It is 70 years since their trial drew to a close in July 1947. From that the judges promulgated a set of ethical principles for medical research on humans, known as the Nuremberg Code, that underpins today's medical research and has led to new international legal standards.



Barts and The London
School of Medicine and Dentistry

Duchess of York visits William Harvey Heart Centre

September 2017



WHRI Work Experience Programme

October 2017



Twice yearly event July/October

1 week work experience

Students must apply

Open to students from all school sectors, local and distant, state and independent

Rayomand Khambata and Ade Alele



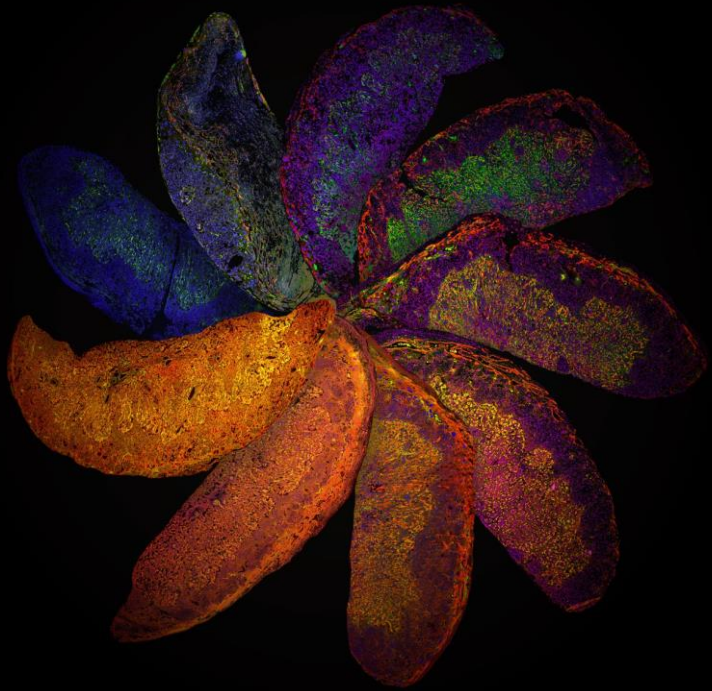
Barts and The London
School of Medicine and Dentistry

New Year Celebration / PhD Symposium January 2018



Winner of 2017 Wellcome Image Awards featured in National Geographic

March 2018



'The Placenta Rainbow'

Dr Suchita Nadkarni, Research Fellow
British Heart Foundation
William Harvey Research Institute

- WHRI Key Metrics
- REF 2021
- Research Themes: Success highlights, future strategy
- Centre highlights
- Key core facility updates
 - Cryopreservation facility
 - Imaging: Confocal, 2-photon application
 - Flow cytometry
- Education: update and future
- JVSC Renovation plans

WHRI-2016-17 Key metrics

WHRI now numbers 510 staff across our 3 main themes including 150 PGR and additionally approximately 100 Honoraries

WHRI overall income in 2015-16 was £33.1 million and in 2016-17 was £34.9 million

Education

The WHRI overall income from tuition fees increased year on year

£3.8m in 2014-15

£4.8m in 2015-16

£6.2m in 2016-17.

Research

£25,418,859 in 2015-16

£29,489,213 in 2016-17

REF 2021

- In REF 2014 QMUL and SMD did very well.
- QMUL was ranked 11th overall, and 9th if specialist institutions are removed.
- School of Medicine came 7th overall in UoA1
- WHRI returned 46 faculty with 143 research outputs, in 2008 we returned 28 faculty.
- REF 2021 change in emphasis with greater focus upon impact
 - Outputs 60%
 - Impact 25%
 - Environment 15%

REF 2021

- Category A eligible staff-substantive academic staff 0.2 FTE or greater.
- Category C staff not returned but their contributions recognised in environment statement
- 100% of eligible staff must be submitted
- The census date is 31 July 2020. Eligible individuals will be independently verified with HESA.
- Recommendation of ORCID ID as an identifier
- Assessment period for outputs 1 January 2014 to 31 December 2020.
- The average number of outputs required per FTE will be 2.5
- A minimum of one output will be required for each member
- A maximum of five outputs may be attributed to individual members
- Only papers that are within the open access regulations can be returned

REF 2021-Outputs

- We are looking good-done 2nd dry run-WHRI very strong within Medicine

Institute	Staff No.	Outputs required	Outputs assessed	Nature Journals	Science Journals	Lancet Journals	NEJM
WHRI	62 (27%)	155	197 (28%)	22 (42%)	2 (50%)	7 (23%)	2 (25%)
TOTAL	229	473	680	53	4	30	8

33 papers in the highest impact journals
92 papers high impact journals

REF2021-Impact

In REF 2014 we contributed 3 impact statements-Caulfield, Korbonits, Timmis

For REF 2021 impact statements collated by Leads Marta Korbonits, Cos Pitzalis, Amrita Ahluwalia

Impact Team-David Steynor, Reetika Suri, Prof Steph Taylor (Deputy Dean for Research Impact)-
Centre for Primary Care & Public Health

Date	No. developed	Assessors
Dec-16	15 impacts	WHRI
Feb-17	11 impacts	Impact Team
Apr-17	9 impacts	Impact Team
Jan-18	7 uploaded to elements	WHRI
Feb-18	4	External review

Cardiovascular Strategy: With BHC become the place to go for CV education, research and care

Current Key Awards/Achievements:

- **NIHR Barts BRC & NIHR National BioResource: £7m (2017-2022)** Mark Caulfield (Director), Brown , Ahluwalia (Deputies)
 - 2 Research Themes: CV Inherited Disorders (PI - Panos Deloukas), and CV Devices & Innovative Trials (PI - John Deanfield)
 - 2 Cross-cutting Themes: **Stratified Healthcare (PI - Morris Brown)** and the Barts & NIHR National BioResources - incorporating Bio-informatics & Advanced CV Imaging (CI - Steffen Petersen)
- **Barts Charity: £10.3m (2015-2023)**
 - Currently 12 live projects across 5 Thematic Areas (CV CTU, PROMS & 3-Boroughs, Devices, Pharmacotherapeutics, Genomic Medicine) and a 'Web/Comms Development' project.
 - Programme has supported 26 associated staff appointments including Chair recruitments in Genomics and Heart Failure underway/under-review
- **CV Devices Hub: £3.75m: (2018-2020)** Anthony Mathur (PI), Profs Baumbach/Caulfield/Lansky (Co-PIs)
 - ERDF (EU) £3m (match-funded by Barts Charity) + Charles Wolfson Charitable Trust £750k (towards capital costs)
 - Faculty ~£1.625m, Revenue/Consumable costs ~£875k, Capital Refurb ~£1.25m (part of 1st Floor Robin Brook Centre & 2nd Floor Paul Garrod Lecture Theatre)
- **BHF MRes/PhD scheme: (2017-2022)** Federica Marelli-Berg, Amrita Ahluwalia (Leads)
 - Continuation of a further 5 years funding

Prospective Major Bids:

- **BHF Research Excellence Award: ~£3-6m (2019-2024)**
 - Federica Marelli-Berg (Lead)
 - Proposed Theme: Centre of Heart Inflammation
 - Submission due: April 2018; Outcome expected: November 2018
 - If successful, start date: April 2019



Recruitment

- Two chairs appointed in 2017
 - Prof Antal Rot - Arthritis Research UK Chair in Inflammation Sciences
 - Prof Alberto Mantovani - CiTI Chair in Inflammation and Therapeutic Innovation
- Currently recruiting for an Arthritis Research UK clinical lectureship



Training

- UCLPartners UCB Joint PhD programme in its second year
- Support for 2 PhD studentships starting March 2018 – currently recruiting
- Exploring joint doctoral programme with Humanitas University (Milan)

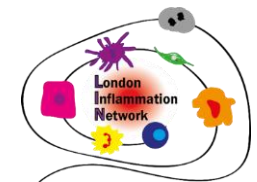


Funding

- Seeking further supporting partnerships with Pharma and UK charities

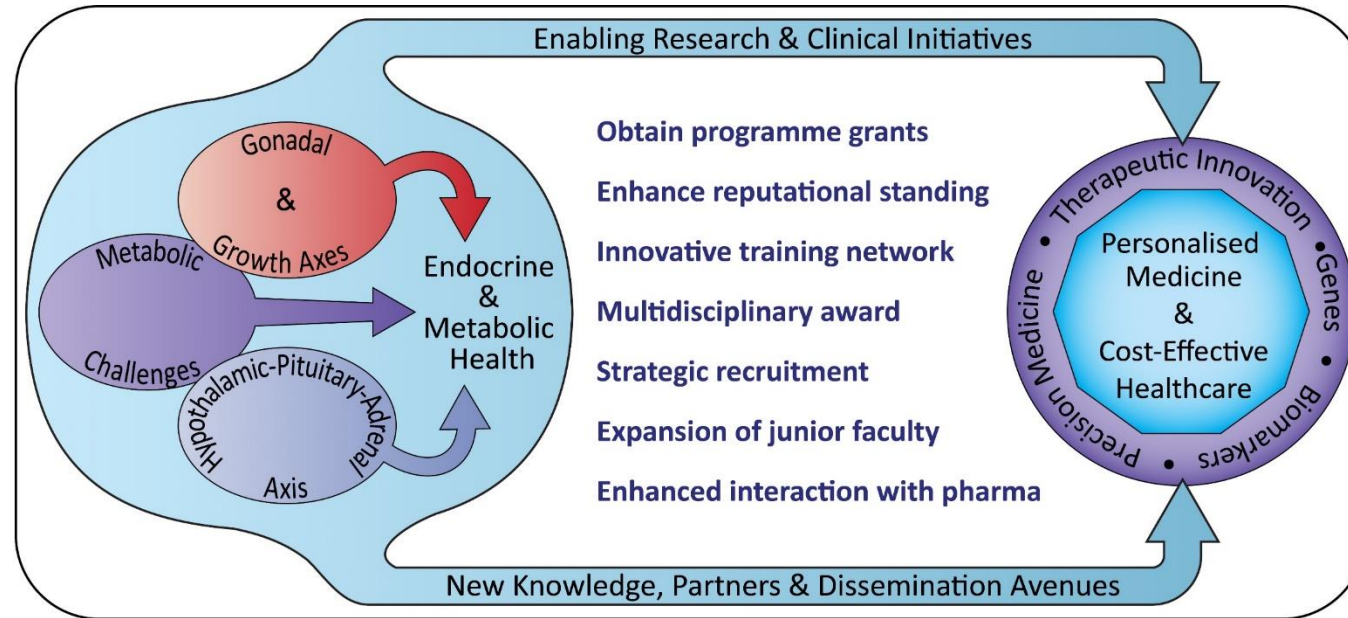
Collaborations and Outreach

- Research into Arthritis Summer BBQ, July 2017. Family / outreach day planned for summer 2018
- CiTI launch Symposium 1st November 2017
- Two RVC/ QMUL workshops held in 2017. Target small molecules meeting scheduled in March 2018
- Sponsorship of QM innovations prize
- Support of the London Inflammation Network (LIN) – 2 well attended meetings a year



Endocrinology

Strategy: To integrate basic and translational research to deliver more effective outcomes for patients with endocrine disorders over their life-course



- **Funding:** BBSRC, NIHR, Rosetrees
- **Teaching excellence:** MSc/PgDip Endocrinology and Diabetes (distance learning) **28 students**, MSc/PgDip Clinical Endocrinology (in-house) **13 students** (Druce), Excellent feedback on SBCS's Endocrine Physiology Module (King)
- **Significant publications:** **Cell Reports** (Guasti), **PNAS** (Korbonits), **JCEM** (Storr, Korbonits, Dunkel)

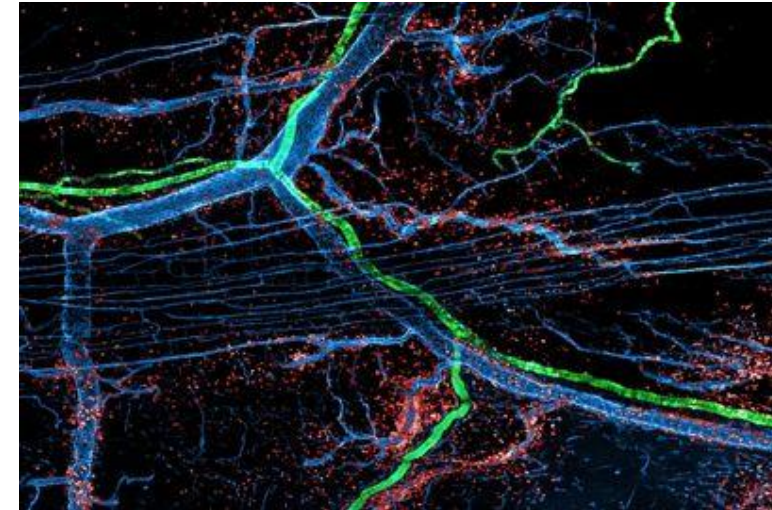
Centre for Microvascular Research

Key Recent Achievements

❑ Prizes, Awards & Accolades:

- Sussan Nourshargh (SN):
 - ❖ Dr Tamara Girbl: Prize winning image (e.g. BHF, QMUL, numerous on-line magazines)
 - ❖ Anna Barkaway: Best talk @ WHRI Winter Research Meeting
 - ❖ BHF Project Grant (SN, Regis Joulia & Mathieu Voisin), ~£240,000
 - ❖ Dr Regis Joulia: EU COFUND Fellowship & multiple other EU grants, ~£85,000
- Ken Suzuki:
 - ❖ Mihai Podaru: Best Poster Prize, William Harvey Day
 - ❖ Company Co-development Fund ~£50,000
- Fiona Lewis:
 - ❖ Barts Charity Project Grant & WHRF Project Seed Grant, ~£60,000
- Mathieu-Benoit Voisin:
 - ❖ WHRF Project Seed Grant, £10,000

Prize winning image captured by
Dr Tamara Girbl



'Lightning and Thunder –
The development of an Inflammatory Storm'

❑ New Recruits & Former Colleagues:

- ❖ New PhD Students: Tom Mitchell and Mohsin Ali Hussain
- ❖ Former colleagues: Drs Abigail Woodfin and Ross King join BHF as Scientific Officers; Rob Beal passes PhD
- ❖ New post-docs: Drs Kazuya Kobayashi and Masafumi Fukumitsu

❑ Papers Published:

- ❖ J Cell Sci., JACC Basic Trans Sci, Biochem J., Sci Reports, Biomaterials

Translational Medicine & Therapeutics

News

- Gareth appointed as Editor, BJA – Thiemermann appointed Associate Editor - Frontiers Immunology
- Sian appointed to the BBSRC & Dunhill Medical Trust Grant Advisory Committees

Clinical trials

- Completion of the COMPARE trial evaluating the racecadotril in pulmonary arterial hypertension (Hobbs)
- TOP-ART (phase II RCT artesunate in trauma) recruiting (25 pts to date) (Thiemermann & Brohi)

Grants

- Professor Magdi Yaqoob - \$4.4 million grant by AZ which will fund a cohort study on biopsy proven diabetic nephropathy patients (start date June 2018)
- Adrian Hobbs, in partnership with colleagues at UCL - £3.7M by Apollo Therapeutics to pursue development of novel small molecule NPR-C agonists for heart failure.
- Sian Henson - £18,000 from Rosetrees Trust
- Chris Thiemermann - £99,000 (WHRF-PhD-Studentship)

Prizes, Awards & Accolades

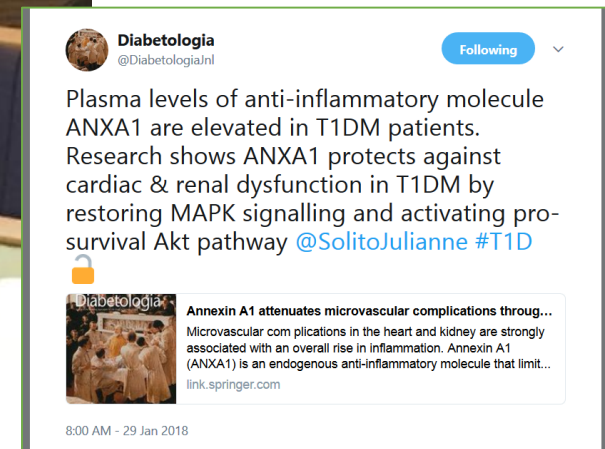
- Madeeha Hamid Sheik won 2 travel grants to attend CVB 2017 in Melbourne (AU)
- Egle Solito invited speaker at the CVB 2017 in Melbourne (AU)
- Diabetologia paper has received 500 Twitter & synopsis published in Science Trends
- Thiemermann invited Plenary lecture Leadership Congress German Society of Anaesthetists

Papers & Publications

- *Lancet*. 2018 [Pearse et al], *Br J Anaesth* (Top Specialist Journal) x 9 papers [Pearse/Ackland]
- *Nat Comm* [Ackland], *Diabetologia* [Solito, Thiemermann], *AJPathol* [Solito]
- *Aging Cell* [Henson], 2 x *Ann Surgery* [Thiemermann]

New Recruits - MRes & PhD Students

- Madeeha Sheik, Caroline O’Riordan, Shireen Mohammad, Joshua Dignam, Jack Pickard



Biochemical Pharmacology

Public Engagement

- **Nadkarni/Marelli-Berg:** Duchess of York visits laboratories in her new role as BHF celebrity ambassador.
- **Montero-Melendez/Perretti:** article “The Biochemist” dedicated to the public and students

Prizes

- **Montero-Melendez:** Winner of QMI POST DOCTORAL INNOVATION COMPETITION
- **Dalli** – Eicosanoid Research Foundation Young Investigator Award; **Walker** – Oral presentation prize, Pharmacology 2017; Runner up poster prize, William Harvey Day; **Marques** – Travel Award, Eicosanoid Research Foundation

Education

- **Dalli, Nissim:** Fellowship of the higher education academy.

Networks

- **Cooper/Norling/Perretti:** Special Research Topic at Frontiers (Title: Resolution Pharmacology- Innovative therapeutic approaches based on the biology of resolution to control chronic diseases of western societies) <https://www.frontiersin.org/research-topics/7350/resolution-pharmacology--innovative-therapeutic-approaches-based-on-the-biology-of-resolution-to-con#overview>
- **Montero-Melendez/Perretti** Organisers: Keystone Symposium on Inflammation and Resolution

Grants

- **Montero-Melendez/Perretti:** Palatin Technologies ~150K; **Dalli:** Metagenics Inc ~£300K; **Marelli-Berg:** BHF ~£250K; **Cooper/Norling:** ARUK Studentship ~140K; **Nissim:** JDRF ~500K

Papers

- **Dalli:** *Circ Research* (*in press*); *JEM* (PMID: 29191914); *PLoS One.* (PMID: 29073216); *Nat Biomed Eng.* (PMID: 29057147) *Sci Rep.* (PMID: 28887458); *Clin Gastroenterol Hepatol* (PMID: 28859868); *FASEB J* (PMID: 28465323); *Org Biomol Chem* (PMID: 28980694); *Curr Opin Immunol.* (PMID: 29154174); *Front Immunol.* PMID: 29163481; *Mol Aspects Med* (PMID: 28365269; PMID: 28802833); *Prostaglandins Other Lipid Mediat.* (PMID: 28602942); *Methods Mol Biol.* (PMID: 29363065)
- **Perretti:** *Cellular and Molecular Life Sciences* (PMID:27853832); *Journal Immunology* (PMID:28242648)
- **Marelli-Berg:** *Am J Transplant.* (PMID: 28027623) *Cell Metab.* (PMID: 28190771) *Methods Mol Biol.* (PMID: 28349485) *Immunity* (PMID: 29166588) *Atherosclerosis* x2 (PMID: 29365474, 29366245), *J Leuk Biol*, in press
- **Longhi:** *Cell Metab*, in press
- **Nissim:** *Diabetologia* (PMID: 28526919)

Highlights from Clinical Pharmacology

- Damian Smedley: Publication in Nature Genetics of identification of 360 new animal models of human disease from analysis of the IMPC.
- Qingzhong Xiao: Publication in Circulation - miRNA-22 is a Novel Mediator of Vascular Smooth Muscle Cell Phenotypic Modulation and Neointima Formation.
- Panos Deloukas: Publication in Nature Genetics - Association analyses based on false discovery rate implicate new loci for coronary artery disease.
- Julia Ramirez awarded Marie Curie Fellowship
- Helen Warren public engagement with a video and written interview published on the International Society of Hypertension (ISH) website
- Andrew Tinker (with Yung-Yao Lin) industrial Collaboration with Pfizer CRISPR/Cas9 engineered human iPSC models for muscular dystrophy research. £490,000
- Ahluwalia: HRUK Grant £149k with Dan Jones
- Dan Jones: NIHR RfPB (collaboration with LSE) £350k

Centre for Endocrinology

Key achievements Jun 2017-Jan 2018

Prizes & Awards:

- **Dr Nikolina Kyprianou** – Society For Endocrinology Early Career Award
- **Valeria Scagliotti**: Society For Endocrinology Early Career Award
- **Professor Márta Korbonits** - Lady Estelle Wolfson lectureship for 2018, Royal College of Physicians; Hadden Lecture Prize 2017, Irish Endocrine Society; Harrison Lecture Prize 2017, Endocrine Society of Australia

Fellowships:

- **Dr James Pittaway** - Barts and The London Charity Academic Clinical Fellowship
- **Dr Sasha Howard** – NIHR fellowship

Awarded PhDs:

- **Dr Ida Pernicova** (Korbonits)

New PhD students:

- **Dr Chung Lim** - St. Bartholomew's Hospital Medical College Trust Clinical Fellowship
- **Dr Tansit Sangkaew** – Prince Songkla University, Thailand

Publications:

- **Cell Reports, PNAS, J Allergy and Clinical Immunology, J Med Genetics, JCEM 3x, EJE 4x**

Joining Us:

- **Dr Peter McCormick** Senior lecturer interested in GPCRs in Health and Disease

Centre for Experimental Medicine & Rheumatology 2017/18

Publications: 30 papers (source Pub Med) including

- Ann Rheum Disease (Top Specialist Journal) x 7
- Arthritis Rheumatol (Top second Specialist Journal) x 2
- Arthritis Res Therapy, Sci Rep, J Immunol Cover Page Int J Mol Sci,
- Nature Rev Rheumatol x 2, Frontiers in Immunology x 2

Competitive Funding: Over £4 M research income including:

- ARUK Fellowship: £187,002 (2018-20) Elena Pontarini
- Marie Curie Fellowship: £146,591 (2017-18) Maggie Flak
- MRC project grants (x1) Agrin, £475K, Dell'Accio
- MRC IMIDBio-UK Consortium IMIDBio-UK Consortium £ 1720674 (EMR/QMUL £248,705)
- Arthritis Research UK Clinical lecturer in EMR £565,973
- AR-UK Project Grants (x1), AR-UK PhD Studentship (x1), Small Charities Grants, Industry Pre-Clinical & Clinical R&D (x2) Totaling > £2.M
- EPSRC £1.5m PAMBAYeSIAN N. Fenton (PI) F. Humby & D. Morrissey (Co-Is)
- Horizon2020 HarmonicSS project € 10M (€ 283,000 to QMUL Co-Is: Bombardieri, Pitzalis).

New Staff 13 new staff appointed:

- 3 PhD Student, 4 Post-Docs; 2 Clinical Research Fellows

Teaching & Training:

- Teaching & Training Undergraduate Modules, BSc & MSc in SEM,
- 12 PhD Students (4 Clinical)

Clinical Trials:

- Trials Completed: R4RA
- Public Engagement (MATURA-PAG).



Cardiovascular Clinical Trials Unit

The Unit is supported by:

Barts CTU
CECM • CPTU • EMRCTC • NFORC •



 Barts and The London
School of Medicine and Dentistry

b+tlc BARTS
CHARITY
Funding extraordinary
healthcare

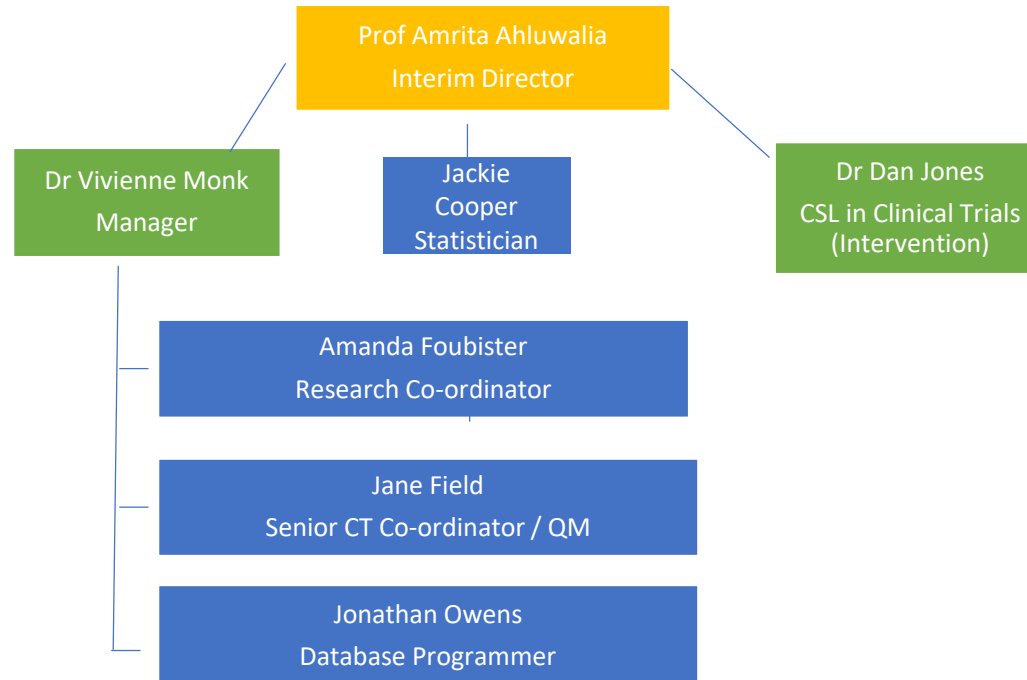


Barts Heart Centre



Barts and The London
School of Medicine and Dentistry

Barts Cardiovascular Clinical Trials Unit (CV CTU)



Aims:

- to support the development of research within the Barts Heart Centre
- to provide cardiovascular trials expertise internal to Barts
- to enable us to increase our clinical research funding
- to support all areas of cardiovascular research

Provides expertise and advice in the following areas:

- Trial design, sample size and statistics
- Developing proposals and funding applications
- Project management
- Regulations and governance
- Patient and Public Involvement
- Quality management
- Database development
- Recruitment of patients (and staff)
- Trial oversight and day to day management



Current Portfolio:

6 studies in set-up

6 studies submitted for funding

Income to Barts:

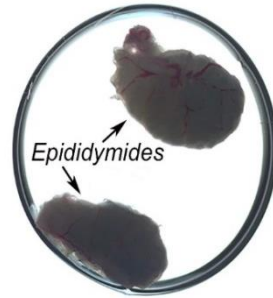
From studies in set-up: £1,548,295

From studies submitted for funding: £2,725,928

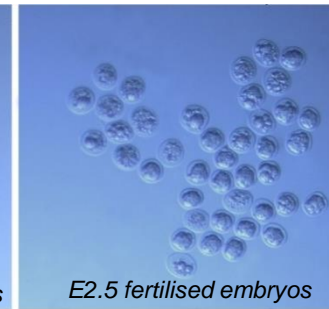
Cryopreservation Facility:

The Mouse Cryopreservation Facility at Charterhouse Square offers:

- Cryopreservation of sperm

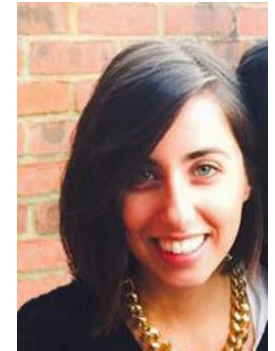
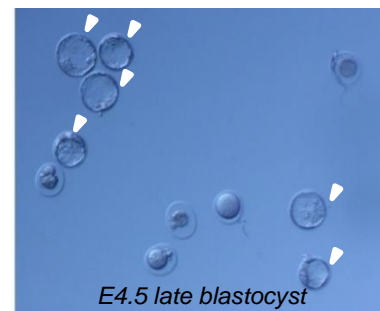


- Cryopreservation of morula stage embryos



- Recovery of the cryopreserved lines through Non-Surgical Embryo Transfer or IVF

- Transfer of transgenic lines between BSUs



Angelica
Gualtieri

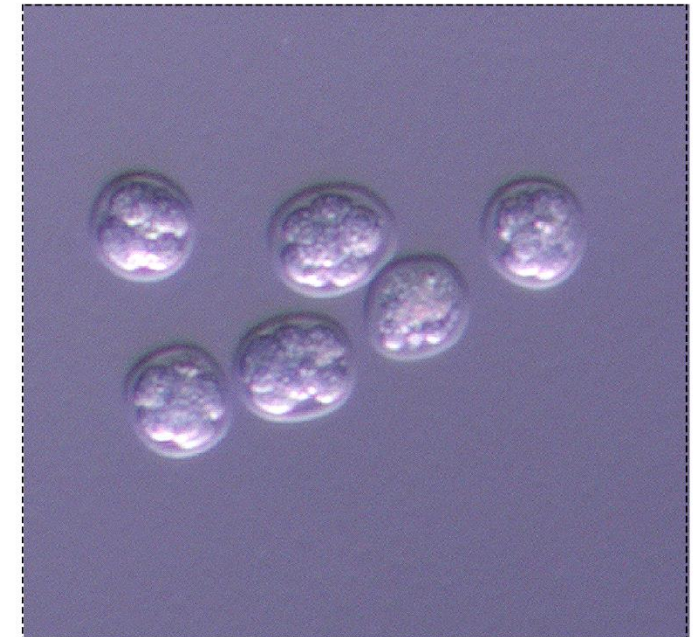
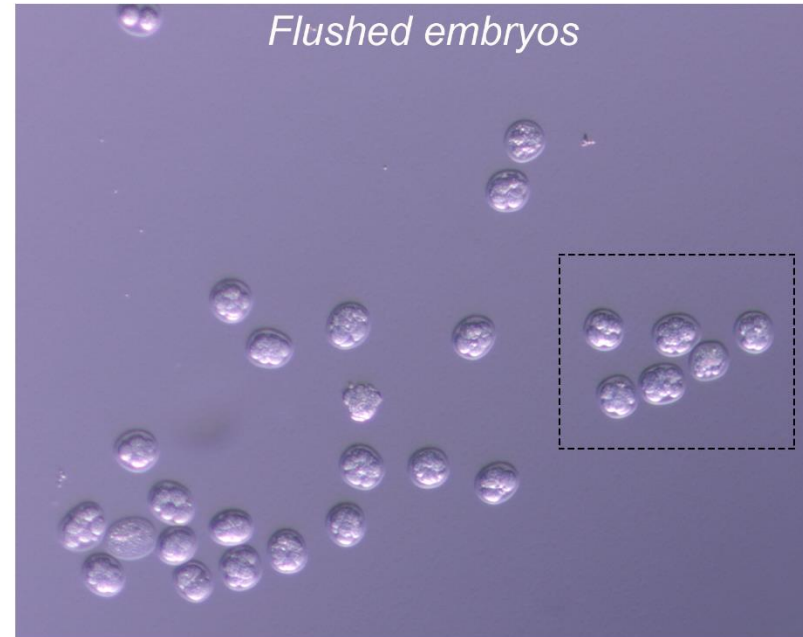
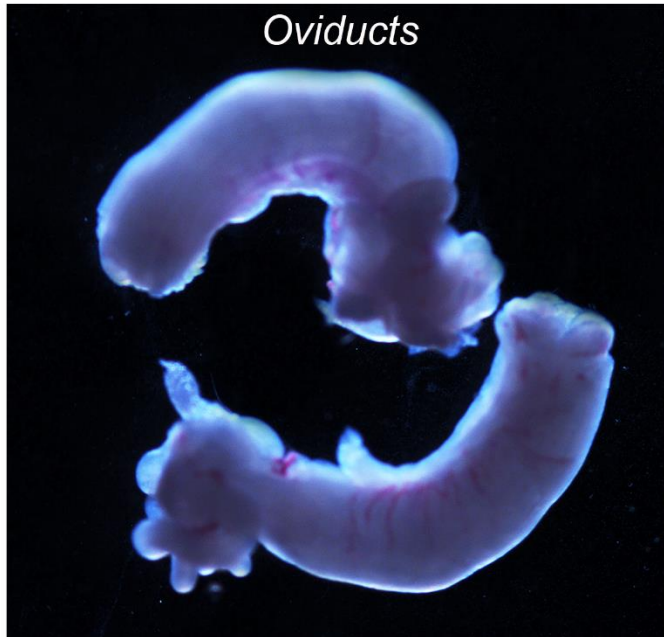
a.gualtieri@qmul.ac.uk

c.gaston-massuet@qmul.ac.uk



Barts and The London
School of Medicine and Dentistry

Mouse Embryo Cryopreservation



Mouse embryos flushed from oviducts and collected in M2 media for selection between 8cell-stage and not developed embryos/

Mouse Embryo Cryopreservation

20 C57BL/6 female

Voice	Cost per reagent	Cost per experiment	Currency
PMSG injection	175	28	GBP
hCG injection	40	30	GBP
Medium for embryo collection	25.36	25.36	GBP
Cryoprotectant solutions and reagents	95	47.5	GBP
Straws	140	10	GBP
Glass filaments	40	10	GBP
Hours required to perform the procedure	10 hours x 30 GBP/ hour	300	GBP
Hours required to perform additional procedures (straws labelling, injections, matings, plugs check)	5 hours x 30 GBP/ hour	150	GBP
Liquid nitrogen storage	650/year	100	GBP
General consumables		50	GBP
TOTAL		750.86	GBP

TOTAL PER EXPERIMENT (females supplied by user)

750.00 GBP

Please consider that the cost of purchasing 20C57BL/6 is not included in the price

UCL and Harwell Transgene Service costs for Mouse embryo cryopreservation: 1,500 GBP

The Jackson Laboratory costs for Mouse sperm cryopreservation: not specified

Mouse Sperm Cryopreservation



Mouse sperm collected from epididymides and equilibrated in gCPA prior to proceed with cryopreservation.

Mouse Sperm Cryopreservation

5 male

Voice	Cost per reagent	Cost per experiment	Currency
Straws	140	30	GBP
Medium and cryoprotectant solutions	262	16	GBP
Hours required to perform the procedure	8 hours x 30 GBP/ hour	240	GBP
Hours required to perform additional procedures (media preparation and straws labelling...)	2 hours x 30 GBP/ hour	60	GBP
Liquid nitrogen storage	650/year	100	GBP
General consumables		50	GBP
TOTAL		496	GBP

TOTAL PER EXPERIMENT

500.00 GBP

OPTIONAL IVF TEST (females supplied by user)

150.00 GBP

Please consider that the cost of purchasing 3C57BL/6 is not included in the price

UCL Transgene Service costs for Mouse sperm cryopreservation: **1,500GBP**

The Jackson Laboratory costs for Mouse sperm cryopreservation: **1,455GBP** for most strains

Projects completed

	Date	Name	Procedure	Line
	March	Dr Li Chan	Embryo + Sperm	
	April	Prof Perretti	Sperm	
	June	Prof Tim Warner	Embryo (X2) + Sperm	
	June	Prof Perretti	Sperm	
	June	Dr Chiara Berlato	Sperm	
	July	Prof Kairbaan Hodivala-Dilke	Sperm	
	July	Prof Perretti	Sperm	
	July	Prof Perretti	Sperm	
	October	Prof David Baker	Sperm	
	October	Prof Tim Warner	Embryos	
	November	Dr Li Chan	Embryos	
	November	Dr Li Chan	Sperm	
	October	Prof Tim Warner	Sperm	
	December	Dr Li Chan	IVF test	
	December	Prof Perretti	IVF test	
	December	Prof Perretti	IVF test	
	December	Prof Tim Warner	IVF test	
	December	Prof Kairbaan Hodivala-Dilke	Sperm	
	February	Prof Kairbaan Hodivala-Dilke	Sperm	
	February	Prof Kairbaan Hodivala-Dilke	Sperm	



Final Storage Cryo Facility at Charterhouse



Angelica
Gualtieri

a.gualtieri@qmul.ac.uk

c.gaston-massuet@qmul.ac.uk



Barts and The London
School of Medicine and Dentistry

WHRI Core Confocal Facility: @ Centre for Microvascular Research

Mic-LIS (Microvascular Live cell/tissue Imaging Suite)

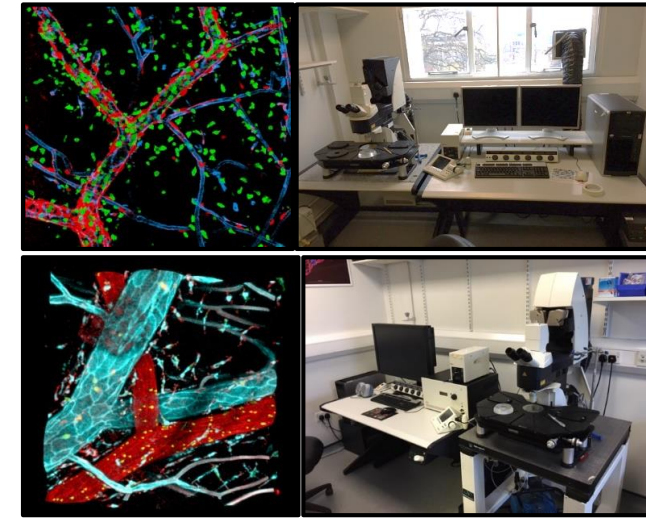
For fast *in vivo* imaging (upright)

- **Leica TCS SP8 DIVE Multi-Photon Confocal Microscope *NEW!*** (available from March 2018)
 - MP Laser with tuneable Ti:Sapphire Oscillator (Tuning range 680-1300 nm) & fixed laser (1040nm) associated with 4 detectors (including high sensitive HyD detectors)
 - SP Laser (488 + 552 + 638nm) with ***FLIM/FRET module***
- **Leica Single-Photon confocal microscopes *x2!***
 - **Leica TCS SP5**: 7 fixed laser lines (458, 476, 488, 496, 514, 561, 633 nm) + 3 detectors
 - **Leica TCS SP8**: 8 laser tuneable lines (470 – 670 nm) white light laser + 4 detectors (including 2 high sensitive HyD detectors)
- **Confocal Image analysis Platforms**: *IMARIS™* (x3) and *ZEN Blue™* (x1) software

- Brightfield/epifluorescent microscopes (x2) for intravital microscopy

For fast live cell *in vitro* imaging (inverted)

- **Zeiss 800 Single-Photon Laser Scanning Confocal Microscope** (inverted)
 - 4 laser lines (405, 488, 561 and 640nm), **Heat + CO₂ environmental control + Piezo stage**
- Time-lapse epi-fluorescent Microscope for *in vitro* live cell imaging



Location: John Vane Science Centre, 4th floor, Microvascular Research, Charterhouse Square, London EC1M 6BQ.

Contact for details:

- Dr Mathieu-Benoit Voisin (m.b.voisin@qmul.ac.uk)
- Dr Tom Nightingale (t.nightingale@qmul.ac.uk)

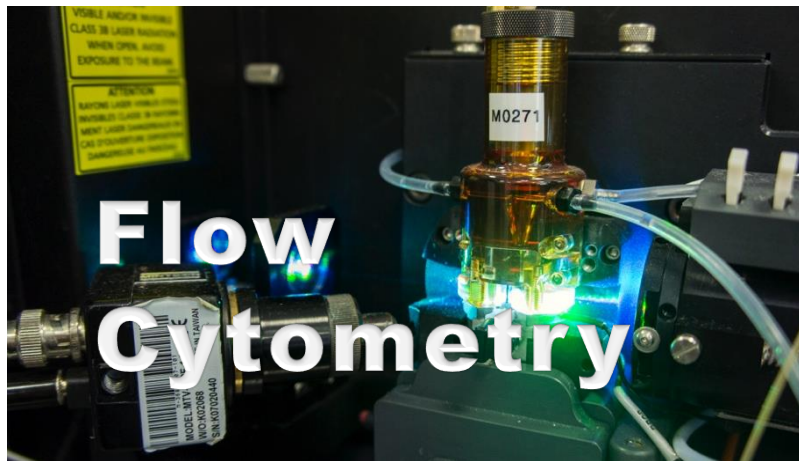
Booking:

Faces (<https://faces.crcr.uga.edu/>)



Barts and The London
School of Medicine and Dentistry

Available to all members of the WHRI, QMUL & external collaborators Training available upon request, collaborations welcome!



Flow Cytometry

The Flow Cytometry Facility at Charterhouse Square provides a state of the art facility to support the important research being carried out at the Institute.

Contact Details

Facility Manager: Julfa Begum E-Mail:

julfa.begum@qmul.ac.uk

Facility Staff Shared E-mail:

flowcytometry@qmul.ac.uk

Cell Sorting

We have two BD Aria Cell Sorters with the ability to measure up to 14 fluorescent parameters. Both have capacity for up to 4-way cell sorting, as well as single cell sorting into 96- and 384-well plates. Cell sorting is run as a service for researchers by Core Staff. Please contact them directly using the contact details above.



Analysers

The facility contains three BD LSRFortessa instruments (up to 16 fluorescent parameters) and a BD FACSCalibur (4 fluorescent parameters). All are available for independent use, 24 hours a day, after relevant training has been completed.

ImageStream X Mk II - Imaging Cytometer

As well as conventional flow cytometry data, the Imagestream provides brightfield and fluorescence microscopy images of each cell. This is a 3 laser instrument for measuring up to 10 different fluorescent parameters, and is ideal for investigating co-localisation, internalisation, immunological synapse, mitosis, small particle analysis and much more.

CyTOF2 – Mass Cytometer

CyTOF2 provides next generation single cell analysis, with the ability to investigate up to 50 parameters at once. Cells are labeled with heavy metal probes in the place of fluorochromes, enabling you to investigate many more parameters per single sample tube than flow cytometry. This makes it the perfect tool for gaining a large amount of information where sampling material is limited.

Analysis

FlowJo, DIVA 7.0 and CellQuest Pro 5.11 license dongles and computers are available for off line data analysis. Core staff can also provide training and assistance with analysis.

WHRI Academic Development Update

QMUL Teaching Recognition Project 2016 – 2018

All QMUL academic staff are expected to hold a HEA-recognized teaching qualification by the end of 2018

Current status:

WHRI academic staff who:

Hold a recognised qualification	39
Are currently registered on a PGCAP / CILT programme	4
Are currently engaged with the ADEPT Fellowship programme	28
Have not engaged with the ADEPT	19

WHRI UG MBBS Contribution

WHRI contribution to MBBS

includes:

- SSC's
- PBL
- OSCE
- Prescribing course
- BMedSci (Molecular Therapeutics and Molecular Medicine) BSc (Sports & Exercise Medicine)

WHRI staff in key MBBS leadership roles include:

- Curriculum
- Assessment
- Student support
- Governance
- GEP

New initiatives

2017/18:

iMSC's- Intercalated Masters Degrees from 2017

- Clinical Endocrinology
- Clinical Drug Development
- Forensic Medical Science
- Healthcare Research Methods
- Critical Care
- Genomic Medicine

Other School of Medicine opportunities around:

- Development of Malta programme
- Physicians Assistant programme (MSc)

Rankings

2nd in the UK for Medicine – The Guardian University Guide 2017

National Student Survey (NSS) results

– 2017

92% overall student satisfaction



WHRI UG SBCS Contribution

WHRI contribution to SBCS Programmes

Contribution to SBCS Modules

Infection, Immunology and Inflammation
Essential Biochemistry for Human Life
Project skills in the life sciences

2017: Increased contribution to Molecular Genetics, Chromosomes and Gene Function, Basic Immunology, Essential Skills for Biomedical Sciences, Endocrinology Physiology & Biochemistry, project skills, including new module leadership responsibilities

Year 3 Biomedical Sciences option modules

- Receptor and mechanisms of cell signalling
- Clinical Trials and Regulatory Affairs
- Clinical Pharmacology
- Genetics

UG Programme

BSc (Pharmacology & Innovative Therapeutics)

Income

UG Income from BSc programmes (iBSc and BSc) **2017/18 £366K**

Income from SBCS Contributions to modules etc

2015/16:	£316 716
2016/17:	£844 000
2017/18:	over 1.3M



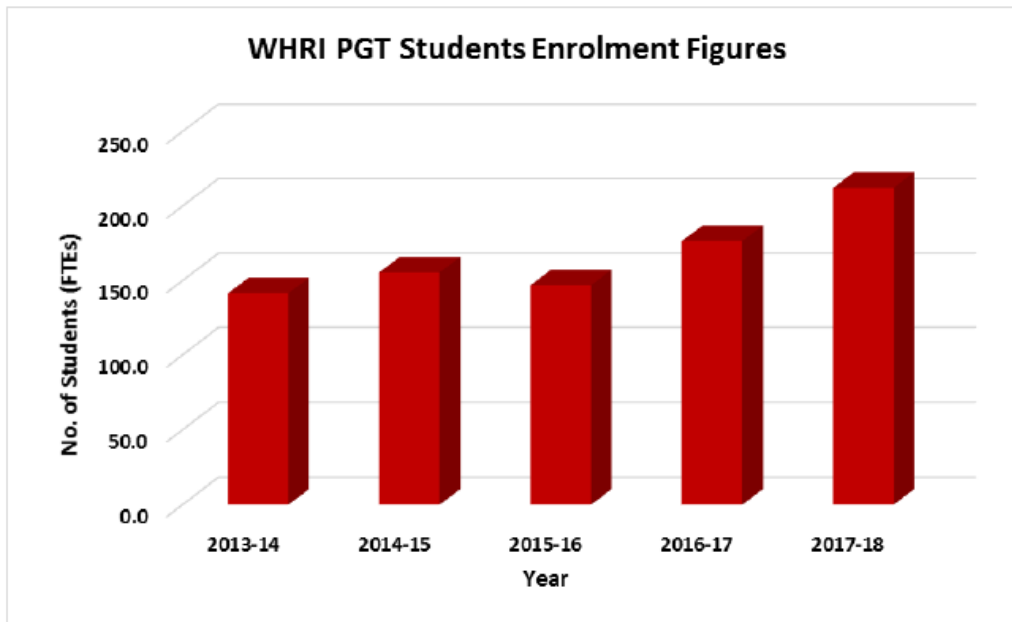
WHRI PGT Programmes

PGT enrolment 2017/18: 215 new students

Income 2017/18: **over 2M**

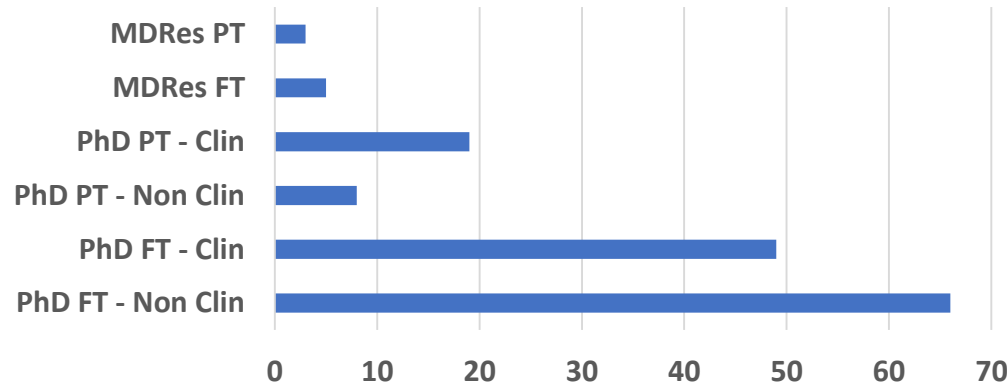
New initiatives 2017/18:

- iMSC-s- Intercalated Masters Degrees
- Summer School in Genomic Medicine (HEE funded)
- Further 5 years of funding from HEE secured for Genomic Medicine MSc
- Two year Double Degree Masters with Universitas Padjadjaran (Indonesia) in MSc Sports and Exercise Medicine
- Collaboration with NATIONAL UNIVERSITY OF MEDICAL SCIENCES- Pakistan
- Periodic Review of Programmes March 2018



WHRI Postgraduate Research

Currently **150** PGR students (includes student in write up)



29 new students have registered so far for **2017/18** academic year

- **Completion:** 2012-13 cohort **91.6%** submission within 4 years
- **PRES 2017:** Overall satisfaction rate for WHRI students is **75.7%**
 - Down ~10% from PRES 2015, so room for improvement!
 - We have identified a need for more local administrative support, this is being put in place
 - New PGR student handbook and local WHRI PGR student inductions
 - Positives include that 97.3% of our PGR students are confident that they will complete their PhDs on time
- **MySiS:** 9/ 18 / 30 month progression, transfer to writing up and exam entry are all now through MySiS
- **PGR Student committee:** Representation from each WHRI research center
- **BHF DTP:** 4 year MRes/PhD programme renewed 2018-2021 (5 students per year)

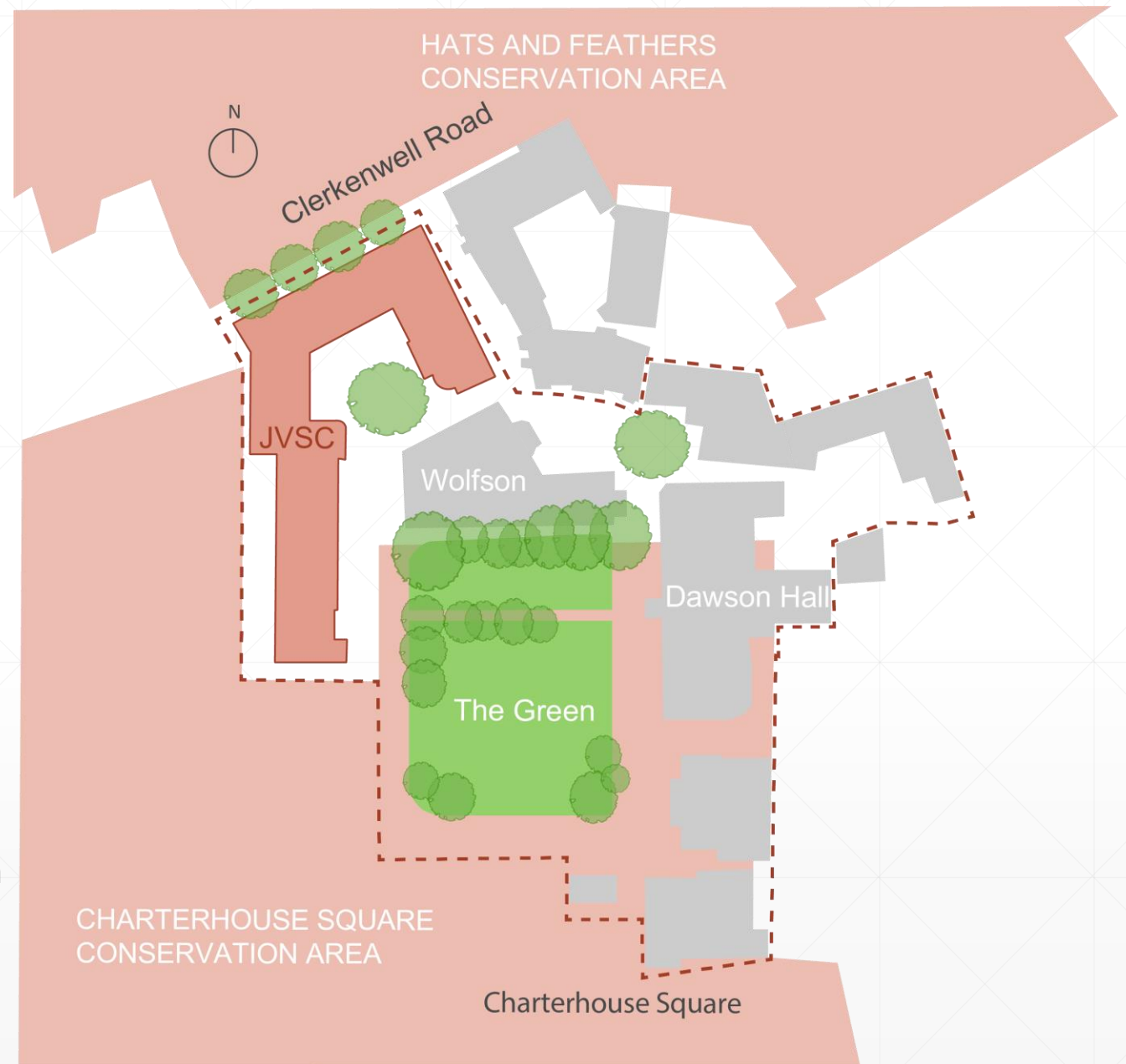
John Vane Science Centre

Presentation to the Queen Mary University of London Estates Strategy Board

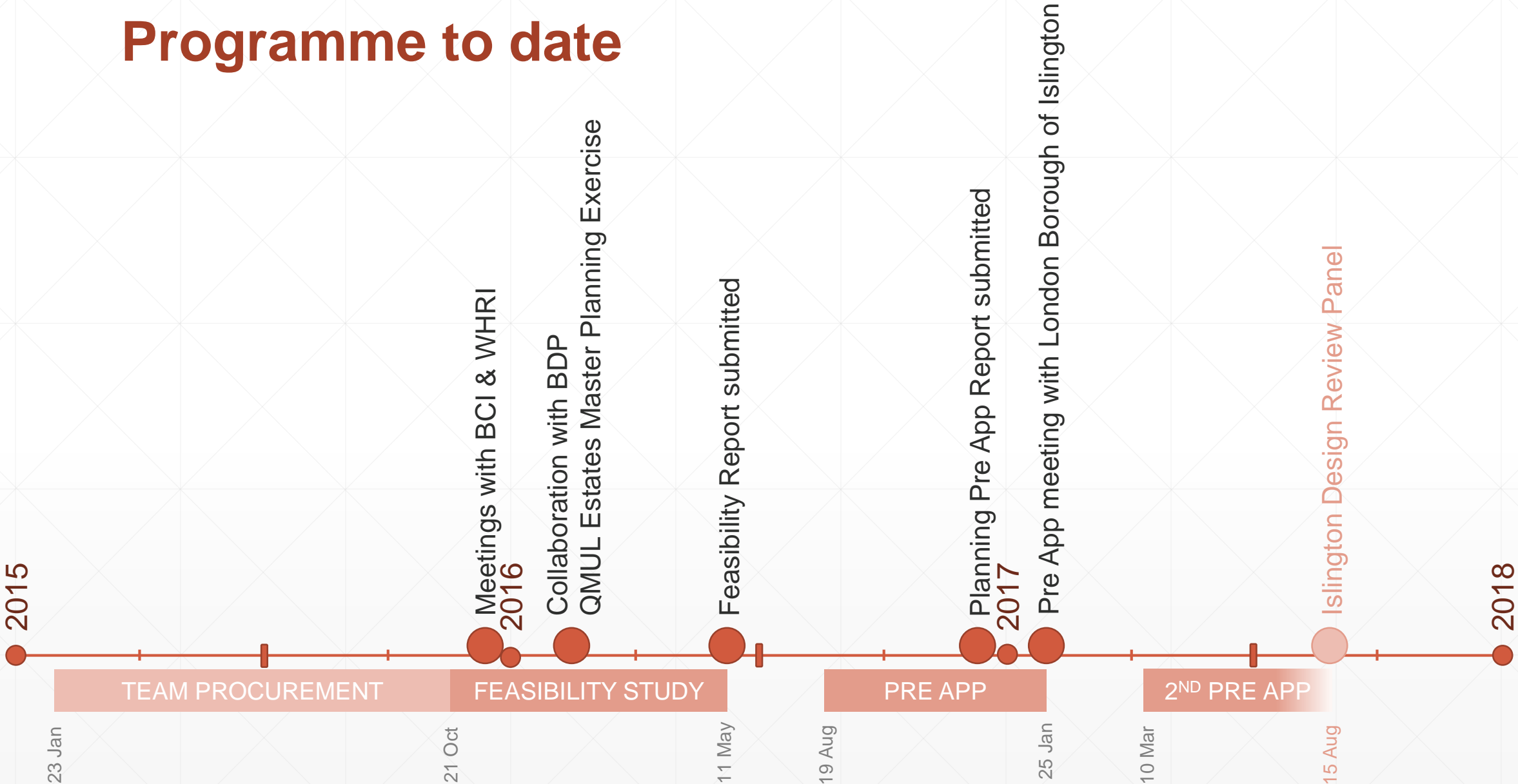
Presented by desM Architects

JVSC at CHSQ

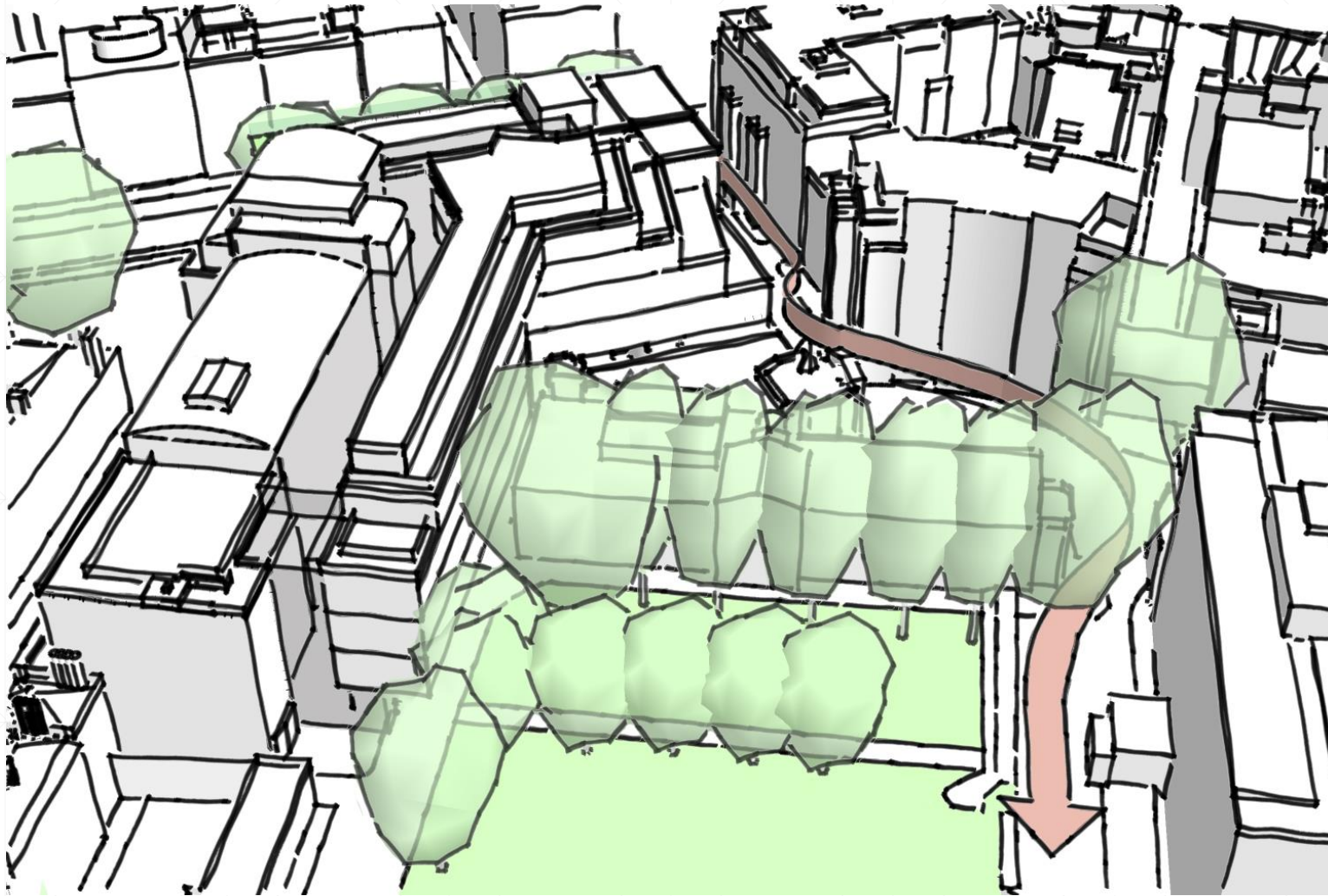
- Campus lease restricts the uses to medical education and research or supporting accommodation
- Strong historic and ongoing links with St Bartholemew's Hospital
- JVSC houses 25% of QMUL's research capacity
- Charterhouse Square Conservation Area
- Hat and Feather Conservation Area
- Future opening of the Elizabeth Line at Farringdon



Programme to date



Preferred Option



Block B

Future John Vane Science Centre

Charterhouse Square Campus

**Campus Boundary
Block A
The Green
Atrium**

**John Vane Science Centre
Dawson Hall**

**Wolfson Building
Proposed Space Allocation**

Clerkenwell Road

North South Pedestrian Route

Existing Space Allocation

Green Roofs and Roof Terraces



Future of the JVSC

- + Collaborative shared spaces to instigate **cross-fertilisation**
- + Building services and internal layouts optimised to **improve space planning** and future **flexibility**
- + Outstanding internal and external design providing a **modernised, reliable, safe** and **compliant** building
- + **Ability to attract the best and the brightest** to complement the **state of the art, world class facilities**
- + Improved efficiency of the building services is pivotal to the overall **improvements in Carbon Footprint**
- + Future **expansion space** to support the growth of the BCI and WHRI
- + Providing the JVSC with a further **60 year lifespan**
- + **Single move decanting** direct to future laboratories limiting downtime during research programmes
- Major disruption over 2 years of disruptive construction works

