University of Birmingham

# Dr Jackson.C Kirkman-Brown MBE PhD

Reader in Human Reproductive Science
Science Lead at Birmingham Women's Fertility Centre
Healthcare Scientist of the Year (2014)

Reproduction, Genes and Development

## Contact details

**Telephone** 0121 627 2739 (tel:+44 121 627 2739)

**Email** j.kirkmanbrown@bham.ac.uk (mailto:j.kirkmanbrown@bham.ac.uk)

**Twitter** @DrMotility (http://twitter.com/@DrMotility)

Centre for Human Reproductive Science
School of Clinical and Experimental Medicine
College of Medical and Dental Sciences
University of Birmingham
Edgbaston
Birmingham
B15 2TT
UK

## About

Jackson is interested in, and excited about, the potential impact of research into andrology on both diagnosis and treatment of infertility. He strongly believes that research in the area can have a rapid and direct impact not only on care, and therefore birth of the next generation, but also quality of life for the patients involved.

Jackson's role as Science Lead at Birmingham Women's Fertility Centre has provided him with a number of amazing opportunities including coordinating one of the largest regional Preimplantation Genetic Diagnosis (PGD) services.

Jackson has also been privileged to be able to have the opportunity to setup, develop and create the laboratory techniques and services for Fertility Preservation in the event of catastrophic genital injury. This work was undertaken with the Royal Centre for Defence Medicine and recognised with him being conferred an MBE and most recently being named as the Chief Scientific Officer's Healthcare Scientist of 2014 by Professor Sue Hill.

## Biography

Jackson is a Deputy Coordinator of ESHRE-SIG Andrology and qualified to teach and assess the official ESHRE Basic Semen Analysis Training Course; the current Secretary of British Andrology Society; and currently also sits on the following committees: Human Fertilisation & Embryology Authority Professional Organisation Group; Association of Biomedical Andrologists and UK NEQAS for Semen Analysis. He is also a member of the Surgeon General's Military Genito-Urinary Working Group.

**Recent Invited Lectures:** *Society for the Study of Reproduction (SSR) 2013 President's Lecturer; Society for Reproduction & Fertility (SRF); Frontiers in Reproduction (MBL Wood's Hole); British Andrology Society (BAS); French Andrology Society (SALF).*

**Healthcare Scientist of the Year HCS#2014** *presented by Professor Sue Hill OBE, Chief Scientific Officer (you can read more about this at:* ***http://www.networks.nhs.uk/nhs-networks/healthcare-science/news/healthcare-science-awards-2014-1/jackson-kirkman-brown-wins-healthcare-scientist-of-the-year-2014 (http://www.networks.nhs.uk/nhs-networks/healthcare-science/news/healthcare-science-awards-2014-1/jackson-kirkman-brown-wins-healthcare-scientist-of-the-year-2014)*** *)*

**MBE – Queen's New Year's Honours 2013** *for services to Human Reproductive Science*

**Commander Joint Medical Command's Commendation 2012** for *"reasons of commitment, professionalism and personal dedication"* in my work on fertility preservation after genital injury.

**NHS Chief Executive's Special Recognition Award for Leadership (December 2010)** Award created by Sir David Nicholson especially for JKB and Major John Clark for development of the techniques and service to provide severely injured soldiers hope of a family in the future.

## Teaching

- BMedSci and MSc (Toxicology) student projects
- BMedSci – Reproduction and Development Course
- MbChB – RED – Reproduction Endocrinology and Metabolism; Bio140; Bio384
- PSIBS Course
- BSc – School of Biosciences courses with reproduction components

## Postgraduate supervision

Main Supervisor for two PhD students

Joint Supervisor / Co-Investigator for five PhD students

PhDs applications encouraged from potential students who can secure funding.

## Research

- How the human sperm interacts with the female reproductive tract. This encompasses calcium signalling in human sperm and its modulation by factors such as progesterone, nitric oxide exposure, and pharmacological ligands. Research in this area and other modulators of calcium signalling forms the basis of the majority of PhD studentships within our group.
- Research into egg-activation and glycoproteins of the egg and its vestments alongside Drs Sarah Conner & Linda Lefievre, who are major collaborators across all my work in Reproduction.
- Collaboration on fluid dynamics in the female reproductive tract led by Science City Research Fellow Dr David Smith; with Dr Eamonn Gaffney & Dr Heres Gadhela (Maths, Oxon); Dr Nikil Kapur (Engineering, Leeds). This involves various advanced imaging modalities available through our ongoing collaboration with Cairn Research.
- Research on chemotaxis in human sperm (they are attracted to the smell of Lily of the Valley!) and G-protein coupled receptors alongside the Group of Dr Marc Spehr in Germany. We also have strong local interactions with Dr Mark Wheatley (Biosciences, Birmingham) and Dr Graham Ladds (Warwick) on GPCRs in Reproduction studies.
- Novel modulators of human sperm function alongside Dr Liam Cox and John Snaith (Chemistry, Birmingham)

## Other activities

Adviser and on-screen specialist in human fertility science for Embarassing Bodies (Channel 4 / Maverick TV).

Adviser and participant in various documentaries and programmes including, BBC World Service – World Have your Say; BBC Asian Network – The Donor Sperm Crisis; Discovery Channel – The Great Sperm Race.

Person Responsible on two Human Fertilisation and Embryology Authority Research Licences.

Science, Research and Development Lead – Birmingham Women's Fertility Centre, Birmingham Women's Hospital.

Trainer around gamete banking and fertility preservation for Teenage Cancer Trust / Birmingham Children's Hospital / Birmingham City University

## Publications


Smith DJ, Gaffney EA, Gadêlha H, Kapur N, Kirkman-Brown JC. (2009) Bend propagation in the flagella of migrating human sperm, and its modulation by viscosity. **Cell Motil Cytoskeleton**. Apr;66(4):220-36. PMID: 19243024.

Machado-Oliveira G, Lefièvre L, Ford C, Herrero MB, Barratt C, Connolly TJ, Nash K, Morales-Garcia A, Kirkman-Brown J, Publicover S. (2008) Mobilisation of Ca2+ stores and flagellar regulation in human sperm by S-nitrosylation: a role for NO synthesised in the female reproductive tract. **Development.** Nov;135(22):3677-86. PMID: 18842814.

Kirkman-Brown J, Björndahl L. (2009) Evaluation of a disposable plastic Neubauer counting chamber for semen analysis. **Fertil Steril**. Feb;91(2):627-31. PMID: 18439603.

Bowdin S, Allen C, Kirby G, Brueton L, Afnan M, Barratt C, Kirkman-Brown J, Harrison R, Maher ER, Reardon W. (2007) A survey of assisted reproductive technology births and imprinting disorders. **Hum Reprod.** Dec;22(12):3237-40. PMID: 17921133.

Bedu-Addo K, Barratt CL, Kirkman-Brown JC, Publicover SJ. (2007) Patterns of [Ca2+](i) mobilization and cell response in human spermatozoa exposed to progesterone. **Dev Biol**. Feb 1;302(1):324-32. PubMed PMID: 17054937.

Correia JN, Conner SJ, Kirkman-Brown JC. (2007) Non-genomic steroid actions in human spermatozoa. "Persistent tickling from a laden environment". **Semin Reprod Med.** May;25(3):208-19. PubMed PMID: 17447210.

Harper CV, Barratt CL, Publicover SJ, Kirkman-Brown JC. (2006) Kinetics of the progesterone-induced acrosome reaction and its relation to intracellular calcium responses in individual human spermatozoa. **Biol Reprod.** Dec;75(6):933-9. PubMed PMID: 16957023

Björndahl L, Kirkman-Brown J, Hart G, Rattle S, Barratt CL. (2006) Development of a novel home sperm test. **Hum Reprod**. Jan;21(1):145-9. Epub 2005 Nov 2. PubMed PMID: 16267078


## Expertise

Sperm

Infertility

IVF / Assisted Conception

## Media experience

Adviser and on-screen specialist in human fertility / sperm / reproductive science for Embarassing Bodies (Channel 4 / Maverick TV).

Adviser and participant in various documentaries and programmes including, BBC World Service – World Have your Say; BBC Asian Network – The Donor Sperm Crisis; Discovery Channel – The Great Sperm Race.

Regular commentator for British Andrology Society on items related to fertility treatment and most commonly sperm in the news for print, national and local radio.




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