

Curriculum Vitae - Katharina Spath

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Language proficiency

English, German (native speaker)



University Education

- 10/2012-10/2017 DPhil Obstetrics & Gynaecology
Nuffield Department of Obstetrics & Gynaecology, University of Oxford, United Kingdom
Thesis: Molecular genetic approaches for the determination of embryo viability (supervised by Prof. Dr. Dagan Wells)
- 10/2010-09/2011 MSc Reproductive Biology (awarded with Distinction)
College of Medicine and Veterinary Medicine, University of Edinburgh, United Kingdom
Theses: Impact of steroids on vascular function within the human endometrium and myometrium (supervised by Prof. Dr. Philippa Saunders); The effect of maternal and paternal obesity on placental and fetal development (supervised by Dr. Amanda Drake); The effect of maternal androgenisation on fetal gluconeogenesis (supervised by Dr. Colin Duncan)
- 10/2006-11/2009 BSc Molecular and Cell Biology
Faculty of Biology, Chemistry & Earth Sciences, University of Bayreuth, Germany
Thesis: The influence of allatotropins on the fertility of *spodoptera frugiperda* (supervised by PD Dr. Meyering-Vos)

Professional Experience

- 10/2011-09/2012 Laboratory Technician at Reprogenetics UK¹
- 10/2012-07/2016 Technical Consultant at Reprogenetics UK¹
- 08/2016-present Senior Research Scientist at CooperGenomics²

¹Set-up, analysis and reporting of sperm aneuploidy testing (fluorescence in situ hybridization), sperm fragmentation testing (Halosperm), preimplantation genetic testing for aneuploidy (array comparative genomic hybridization, high-throughput sequencing and quantitative polymerase chain reaction) and preimplantation genetic testing of mitochondrial DNA disease (high-throughput sequencing)

²Development of novel techniques for clinical application (e.g. endometrial receptivity test); Supervision, analysis, reporting and data collection of preimplantation genetic testing procedures and results

Funding & Grants

- 10/2010-09/2011 Scholarship from the University of Edinburgh
- 10/2012-07/2016 Scholarship from the NIHR Oxford Biomedical Research Centre

Publications

- 2018 Kubikova N, Babariya D, Sarasa J, **Spath K**, Alfarawati S, Wells D. Clinical application of a protocol based on universal next-generation sequencing for the diagnosis of beta- thalassaemia and sickle cell anaemia in preimplantation embryos. Reproductive Biomedicine Online.
- 2017 Fragouli E, Alfarawati S, **Spath K**, Babariya D, Tarozzi N, Borini A, Wells D. Analysis of implantation and ongoing pregnancy rates following the transfer of mosaic diploid-aneuploid blastocysts. Human Genetics.
- Fragouli E, McCaffrey C, Ravichandran K, **Spath K**, Grifo J, Munne S, Wells D. Clinical implications of mitochondrial DNA quantification on pregnancy outcomes: a blinded prospective non-selection study. Human Reproduction.
- Babaryia D, Fragouli E, Alfarawati S, **Spath K**, Wells D. The incidence and origin of segmental aneuploidy in human oocytes and preimplantation embryos. Human Reproduction.
- 2015 **Spath K**, Wells D. Deep impact: sequencing embryo biopsy specimens at increasing depth. Reproductive Biomedicine Online.
- Poli M, Ori A, Child T, Jaroudi S, **Spath K**, Beck M, Wells D. Characterization and quantification of proteins secreted by single human embryos prior to implantation. EMBO Molecular Medicine.
- Fragouli E, **Spath K**, Alfarawati S, Kaper F, Craig A, Michel CE, Kokocinski F, Cohen J, Munne S, Wells D. Altered levels of mitochondrial DNA are associated with female age, aneuploidy, and provide an independent measure of embryonic implantation potential. PLoS Genetics.
- Connolly F, Rae MT, **Späth K**, Boswell L, McNeilly AS, Duncan WC. In an ovine model of polycystic ovary syndrome (PCOS) prenatal androgens suppress female fetal renal gluconeogenesis. PLoS One.
- 2014 Fragouli E, Alfarawati S, **Spath K**, Wells D. Morphological and cytogenetic assessment of cleavage and blastocyst stage embryos. Molecular Human Reproduction.
- 2013 Fragouli E, Alfarawati S, **Spath K**, Jaroudi S, Sarasa J, Enciso M, Wells D. The origin and impact of embryonic aneuploidy. Human Genetics.

Conference Abstracts (Oral Presentations)

- 2017 **Spath K**, Kubikova N, Whitney M, Vaid M, Rozis G, Couchman V, Glynn K, Batha S, Alfarawati S, Fragouli E, Wells D. Development, validation and first clinical application of a novel

ultra-rapid comprehensive chromosome screening technique utilising an array based nano scale quantitative DNA amplification technology. ESHRE Annual Meeting, Geneva.

Spath K, Sarasa J, Babariya D, Konstantinidis M, Griffiths T, Spencer J, Turner K, McCaffrey C, Gangrade B, Child T, Grifo J, Patel S, Munne S, Wells D. Healthy baby born after preimplantation genetic diagnosis of mitochondrial DNA disease utilising next-generation sequencing. Fertility 2017, Biannual Conference of UK Fertility Societies (ACE, BFS and SRF), Edinburgh.

Spath K, Kubikova N, Alfarawati S, Whitney M, Vaid M, Rozis G, Couchman V, Glynn K, Batha S, Wells D. First clinical application of a novel ultra-rapid comprehensive chromosome screening technique. Fertility 2017, Biannual Conference of UK Fertility Societies (ACE, BFS and SRF), Edinburgh.

2016 **Spath K, Sarasa J, Babariya D, Konstantinidis M, Griffiths T, Spencer J, Turner K, McCaffrey C, Gangrade B, Child T, Grifo J, Patel S, Munne S, Wells D.** Design, validation and clinical application of a novel next-generation sequencing protocol for detection of mitochondrial disease and simultaneous aneuploidy screening in preimplantation embryos. ESHRE Annual Meeting, Helsinki.

2015 **Spath K, Alfarawati S, Babariya D, Raberi A, Wells D, Fragouli E.** Do multiple IVF cycles increase the chance of having a euploid embryo in females of advanced age? ESHRE Annual Meeting, Lisbon.

Spath K, Alfarawati S, Babariya D, Wells D, Fragouli E. The effect of female age on the fidelity of chromosome segregation during preimplantation development. Fertility 2015, Biannual Conference of UK Fertility Societies (ACE, BFS and SRF), Birmingham.

Spath K, Fragouli E, Alfarawati S, Wells D. Preclinical validation of a next-generation sequencing based comprehensive chromosome screening method in cleavage- and blastocyst-stage embryos. Fertility 2015, Biannual Conference of UK Fertility Societies (ACE, BFS and SRF), Birmingham.

2013 **Spath K, Fragouli E, Konstantinidis M, Poli M, Wells D.** Development and validation of rapid and cost-effective blastocyst comprehensive chromosome analysis methods utilising quantitative real-time PCR and microbead-based technologies. ESHRE Annual Meeting, London.

Conference Abstracts (Poster Presentations)

2015 **Spath K, Fragouli E, Konstantinidis M, Poli M, Wells D.** Development and validation of ultra-rapid and cost-effective embryo chromosome analysis methods. Fertility 2015, Biannual Conference of UK Fertility Societies (ACE, BFS and SRF), Birmingham.

- Spath K, Alfarawati S, Fragouli E, Wells D.** Development and validation of an array-based nano-scale quantitative polymerase chain reaction technology for comprehensive chromosome screening of preimplantation embryos. *Fertility* 2015, Biannual Conference of UK Fertility Societies (ACE, BFS and SRF), Birmingham.
- 2013 **Spath K, Fragouli E, Konstantinidis M, Poli M, Wells D.** Development of a rapid blastocyst chromosome screening method using quantitative real-time PCR. *Fertility* 2013, Biannual Conference of UK Fertility Societies (ACE, BFS and SRF), Liverpool.

Awards & Nominations

- 2017 Co-author on the abstract titled 'Frequency and clinical relevance of mosaic segmental aneuploidy in blastocyst stage human embryos' which was nominated for the Clinical Science Award at the ESHRE Annual Meeting, Geneva.
- 2016 Co-author on the publication titled 'Characterization and quantification of proteins secreted by single human embryos prior to implantation' which won the Specialty Research Medal Award of the Royal College of Pathologists.
- 2014 Prize for best oral presentation titled 'Preclinical validation of a next-generation sequencing based comprehensive chromosome screening method in cleavage- and blastocyst-stage embryos' at the DPhil Day of the Nuffield Department of Obstetrics & Gynaecology.
- Second prize for best poster titled 'Validation of rapid and low-cost blastocyst comprehensive chromosome screening methods utilising quantitative real-time PCR and microbead-based technologies' at the Away Day of the Nuffield Department of Obstetrics & Gynaecology.
- 2013 Prize for best poster titled 'Development of a rapid blastocyst chromosome screening method using quantitative real-time PCR' at the Fertility Biannual Conference of UK Fertility Societies (ACE, BFS and SRF), Liverpool.