Dr Sarah McClelland

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Research Interests

We are interested in how cancer cells generate and tolerate the extensive chromosomal aberrations (chromosome gains, losses and structural defects – '*Chromosomal Instability*') observed across the majority of cancer types.

My research group focuses on:

- Mechanisms generating chromosomal instability, currently focussing on high grade serous ovarian cancer as a model.
- Characterisation of novel genes implicated in the initiation of chromosomal instability.
- Understanding mechanisms employed by normal cells to eliminate aneuploid cells, and how these mechanisms are deregulated in cancer to allow the propagation of chromosomally unstable cells.
- Optimising image analysis techniques to streamline the analysis of extensive live and fixed cell images used in our work.

Major Funders

- Cancer Research UK
- Barts and the London Charity Trust
- MRC

Contact Details

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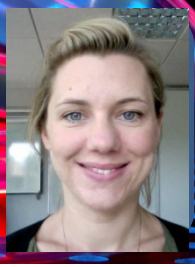

Recent Publications

- **Burrell RA*, McClelland SE***, Endesfelder D, Groth P, Weller MC, Shaikh N, Domingo E, Kanu N, Dewhurst SM, Gronroos E, Chew SK, Rowan AJ, Schenk A, Sheffer M, Howell M, Kschischo M, Behrens A, Helleday T, Bartek J, Tomlinson IP, Swanton C. Replication stress links structural and numerical chromosomal instability in colorectal cancer**.** ***Nature***. 2013 Feb 28, 494:492-6
- Birkbak NJ, Eklund AC, Li Q, **McClelland SE**, Endesfelder D, Tan P, Tan IB, Richardson AL, Szallasi Z, Swanton C. Paradoxical Relationship between Chromosomal Instability and Survival Outcome in Cancer. ***Cancer Res***., 2011
- Jaqaman K, King EM, Amaro AC, Winter JR, Dorn JF, Elliott HL, McHedlishvili N, **McClelland SE**, Porter IM, Posch M, Toso A, Danuser G, McAinsh AD, Meraldi P, Swedlow JR. Kinetochore alignment within the metaphase plate is regulated by centromere stiffness and microtubule depolymerases**.** ***J Cell Biol***., 2010 .
- **McClelland SE***, **Borusu S***, Amaro AC, Winter JR, Belwal M, McAinsh AD & Meraldi P. The CENP-A NAC/CAD kinetochore complex controls chromosome congression and spindle bipolarity. ***EMBO J***., 2007
- Porter IM, **McClelland SE**, Khoudoli GA, Hunter CJ, Andersen JS, McAinsh AD, Blow J & Swedlow, J.R. Bod1, a novel kinetochore protein required for chromosome biorientation**.** ***J. Cell Biol***., 2007
- **McClelland, S.E**., Dryden, D.T., Szczelkun, M.D. Continuous Assays for DNA Translocation using Fluorescent Triplex Dissociation: Application to Type I Restriction Endonucleases. ***J. Mol. Biol***. 2005