

**Job Description – Postdoctoral Research Scientist
(Genome Stability and Evolution)**

Department	Epigenetics
Grade	BI 6
Salary	£30,751 per annum
Length of appointment	Up to 1 year
Location	Babraham Institute
Working Hours	37

Job Profile Summary

The successful candidate will use replicatively aged cohorts of budding yeast to quantify copy number variation (CNV) events in different environments, analysing individual cells by PFGE-southern blot. Particular attention will be given to the development of assays allowing measurement of de novo CNV frequency from single copy loci. Genetic methods will then be used to elucidate the mechanisms by which gene expression alters recombination rate. The job will also involve a component of mammalian cell culture and analysis to aid ongoing work to translate our findings in yeast to humans

These studies lie at the interface of recombination, chromatin and gene expression, and will require a high level of proficiency in yeast handling and molecular biology.

Key areas of Responsibility

- Growth and isolation of replicatively aged yeast
- CNV analysis by southern blot
- Development of sensitive CNV detection assays
- Gene expression analysis by northern blot and RNAseq
- Culture, purification and qPCR analysis of mammalian cells

Background information

CNV is thought to occur at random, but we have recently demonstrated that copy number change of protein coding genes can be directly stimulated by cells in response to their environment.

Hull, R.M., Cruz, C., Jack, C.V., and Houseley, J. (2017). Environmental change drives accelerated adaptation through stimulated copy number variation. *PLoS Biol* 15, e2001333.

Jack, C.V., Cruz, C., Hull, R.M., Keller, M.A., Ralser, M., and Houseley, J. (2015). Regulation of ribosomal DNA amplification by the TOR pathway. *PNAS* 112, 9674-9679.

Person Specification

Criteria	Essential (✓)	Highly Desirable (✓)	Desirable (✓)	Shortlisting (please indicate the specific criterion that can be shortlisted) (✓)
Education & Qualifications				
PhD in molecular biology	✓			✓
Relevant Experience				
Budding yeast genetic manipulation and culture including purification and analysis of replicatively aged cells	✓			✓
Extensive experience of CNV analysis in budding yeast populations and single cells by southern blot including PFGE methods	✓			✓
Proficiency in northern blotting and RNAseq methods	✓			✓
Experience with mammalian cell culture including cell sorting by flow cytometry and CNV analysis by qPCR	✓			✓
Knowledge & Skills				
Experience in design and implementation of novel statistical methods	✓			✓
Able to comprehend and communicate in the English language to a level appropriate for the position	✓			
Excellent interpersonal skills with the ability to communicate with staff at all levels	✓			
Ability to work independently and as part of a team	✓			
Excellent accuracy and attention to detail	✓			
Excellent organisational skills, with good time management	✓			
Strong IT skills, including Microsoft Office	✓			
Personal Attributes & Characteristics				
Ability to make independent decisions and solve routine problems	✓			
Self-motivated and adaptable to change	✓			
Willing to work flexibly at times	✓			
Empathy with the life sciences work of the Institute	✓			
Additional Requirements				
Understanding of genetics and DNA molecular biology	✓			✓
Troubleshooting skills	✓			✓

The Babraham Institute

Postdoctoral Research Scientist (CNV-JH-LTC)

INFORMATION ON TERMS & BENEFITS

The following is for information only and is not contractual statement of terms and conditions.

Holiday Entitlement	25 days per annum
Bank Holidays	Applicable to England and Wales
Christmas Closure days	3 days
Pension Scheme	Babraham Institute is able to offer membership of a Group Personal Pension Scheme. We will provide you with details of this scheme once you commence work. Membership of the scheme is not compulsory but it is designated as Babraham Institute's Stakeholder exempt plan. The Institute does not make contributions to other personal pension schemes.
Restaurant Facilities	There are a number of facilities on site.
Onsite Accommodation	The Institute has a number of hostels, flats and houses which can be rented. (There is currently a waiting list for all types of accommodation.)
Social	Sports & Social Club
Nursery	Nursery and Holidays Playscheme on site. (Availability of places is dependent on demand.)
Car Parking	There is free car parking in the Institute Car Park.

The Institute is committed to the implementation of a commuting strategy to try and reduce the growth in numbers of cars used to travel to work.

Any offer of employment will be subject to security screening and may be subject to health screening. Any offer may also be subject to a general medical

