Job Description

Job title	**Post-Doctoral Research Associate in Crop Quantitative Genetics.**	**Location - base**	Park Farm, Histon, Cambridge
Team	Crop Quantitative Genetics	**Job group**	Specialist
Department	Plant Genetics	**Post ref.**	T428
Reports to	Group Leader in Crop Quantitative Genetics	**Line manages**	N/A

1. Team overview

The Crop Quantitative Genetics group at Niab explores the relationship between genetic diversity and crop traits, focusing on traits controlled by multiple genes. Our inclusive and innovative team applies collaborative approaches to solve real-world challenges in agriculture. We work on Niab's wheat and barley collections, advancing sustainable agricultural practices in changing climates through methods such as genetic mapping, genomic prediction, trial design, and bioinformatics.

We foster a supportive environment, where team members are encouraged to share ideas and contribute to collective success.

2. Role purpose

The role involves contributing to a range of research projects focused on crop quantitative genetics. Responsibilities include developing and managing data analysis workflows, conducting advanced statistical and bioinformatics analyses, and supporting experimental design.

The position will deliver research outcomes through detailed reports, publications, and presentations. The role also includes providing support to colleagues and students, contributing to a collaborative and inclusive research environment, and helping to advance the understanding of genetic diversity and complex crop traits.

Key Responsibilities

- **Develop Analysis Pipelines:** Collaborate on the creation and management of research pipelines for genetic mapping and data quality control, primarily using R software.
- **Data Processing and Analysis:** Use high-performance computing systems to process genetic and sequence data, with training and support available.
- **Deliver Research Outputs:** Achieve research goals and share findings through clear, engaging reports and presentations.
- **Provide Support and Training:** Offer analysis advice and support to colleagues and students, contributing to the delivery of training courses.

3. Financial authority/responsibility

None

4. Key relationships

Internal The post-holder will be line managed by Group Leader in Crop Quantitative Genetics, who will also provide/arrange appropriate training to enable the post-holder to undertake research tasks. The post-holder will also liaise on a day-to-day basis with internal collaborators (Niab Co-Investigators and other Niab staff) for project delivery activities.

External: The post-holder will regularly work with external collaborators across a range of projects and different institutes.

5. Key tasks/responsibilities

	Approx. % of time
Assist in developing open-source genomic tools for association mapping and data quality control (R programming).	20%
Process sequence data and complete genetic analyses for QTL mapping in an African orphan crop.	10%
Process and quality control genotype data and develop models for multivariate genetic mapping for a large international and interdisciplinary research project.	50%
Conduct SNP data analysis for NIAB wheat materials and populations	15%
Provide data analysis advice and help to colleagues.	5%

6. Working conditions

Mainly office based, with possible UK or overseas travel for project meetings. Occasional trips to field trials, glasshouses and seed stores.

Person Specification

Criteria	Essential	Desirable
Qualifications		
Relevant BSc or equivalent qualification.	x	
PhD in quantitative genetics, bioinformatics, population genetics, plant biology/genetics, or similar, with evidence of specialisation in data analysis.	x	
Knowledge and skills		
Proficiency in genetic mapping techniques.	x	
Strong knowledge of R programming.	x	
Understanding of bioinformatics tools and techniques.		x
Knowledge of plant breeding and crop science.		x
Additional programming skills (e.g., Python).		x
Experience		
Experience with statistical genetics (e.g., GWAS) using R.	x	
Familiarity with command line (e.g., Unix/bash) and sequence processing.		x
Handling large genetic datasets with attention to detail.	x	
Supporting or teaching others in genetic analysis methods.	x	
Attributes		
Accuracy, attention to detail, and a commitment to personal development.	x	
A collaborative and flexible attitude, ready to work independently or as part of a team.	x	
Proactive and self-motivated, with confidence in working without direct supervision.	x	