

Job title	Research Associate/Fellow	Job family and level	R&T Level 4 (RTA Training Grade as Research Associate)
School/ Department	Biosciences/ Plant Sciences	Location	Sutton Bonington Campus

Purpose of role

To contribute to multidisciplinary research addressing global agricultural challenges by investigating the root-soil interface to develop climate-smart pigeon pea cultivars with enhanced nitrogen fixation, heat resilience, and improved yields. Working as part of a collaborative team involving UK institutions (University of Nottingham and University of Warwick) and international partners (ICRISAT, CIMMYT, and their National Agriculture Research Systems), the role will focus on designing and executing experiments using advanced multidisciplinary techniques in root biology, soil science, microbial ecology and omics approaches. The research aims to deepen scientific understanding of the interactions between root traits, rhizobia, and soil properties to improve plant performance under heat stress. Additionally, the role involves preparing detailed reports and contributing to high-quality scientific publications to disseminate findings and drive impact in agricultural science.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	Research <ul style="list-style-type: none"> To independently design, plan, carry out and analyse plant physiology and molecular biology-based research, as well as undertake other duties, such as administration where appropriate. 	75%
2	Dissemination of research results <ul style="list-style-type: none"> To significantly contribute to the writing up of research papers, reports and presentation of research findings in group/project meetings and at high level national and international meetings to maintain Institute and University recognition. 	10%
3	Support junior members of the group <ul style="list-style-type: none"> To assist in the supervision and training of undergraduate or postgraduate students, and technical staff as appropriate. 	5%
4	Engage in Professional Development activities <ul style="list-style-type: none"> To continue developing professional research skills, keeping knowledge up to date through attendance at seminars and conferences, and initiate internal/external collaborations where appropriate. 	5%

5	<p>Adhere to H&S regulations</p> <ul style="list-style-type: none"> To contribute to the safe and well organised functioning of the laboratory. 	5%
---	---	----

Person specification

	Essential	Desirable
Skills	<ul style="list-style-type: none"> Demonstrable laboratory skills including plant physiology, soil science, microbial ecology and genetics. Demonstrable skills in advanced imaging techniques and image processing tools for high-resolution analysis. Ability to develop and apply innovative research approaches, models, techniques, and methods. Excellent oral and written communication skills. Ability to build relationships and collaborate with others, internally and externally. Good time management skills, ability to prioritise and meet deadlines 	<ul style="list-style-type: none"> Demonstrable ability to work with legume crops in laboratory, glasshouse and field conditions. Proficiency in analysing root architecture and anatomical traits under abiotic treatments using advanced imaging techniques. Demonstrable expertise in conducting root-soil interaction studies and measuring rhizosphere processes. Strong ability to analyze and interpret complex data, critically evaluate scientific literature, and derive novel insights. Omics data handling skills (RNA seq. and metabolomics data, genomic data, GWAS /QTL mapping analysis).
Knowledge and experience	<ul style="list-style-type: none"> Knowledge about root growth responses to abiotic stresses and underlying molecular mechanisms. Evidence of sufficient breadth or depth of research methodologies and techniques to work in root-soil interactions. Experience in rhizosphere processes, including microbial activities and their role in plant-soil interactions. A relevant publication record in the area of root biology and soil science. Experience in sampling root tissues for DNA and RNA extraction and gene expression, proteomics and metabolic profiling analysis and soil samples for microbial studies. 	<ul style="list-style-type: none"> Strong knowledge about legume physiology and with practical experience working with them. Familiarity with soil processes, including rhizosphere interactions, soil health, and the dynamic relationship between roots and soil structure, along with experience in microbial analysis (e.g., root exudates, microbial communities, and greenhouse gas emissions under abiotic stress). Ability to integrate data from multiple sources, such as genomic, phenotypic, environmental, and microbial datasets, to draw meaningful conclusions.

	<ul style="list-style-type: none"> • Experience in working in large-scale research projects, particularly those involving international collaboration. • Experience in scientific writing of reports and peer reviewed publications. 	<ul style="list-style-type: none"> • Experience in supervising technical staff and laboratory work of students.
Qualifications, certification and training (relevant to role)	<ul style="list-style-type: none"> • PhD in Plant biology/Crop Science/Soil Science/Molecular Ecology or related biological science (or near completion) 	



The University of Nottingham is focused on embedding equality, diversity and inclusion in all that we do. As part of this, we welcome a diverse population to join our work force and therefore encourage applicants from all communities, particularly those with protected characteristics under the Equality Act 2010.

Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

- Valuing people** Is always equitable and fair and works with integrity. Proactively looks for ways to develop the team and is comfortable providing clarity by explaining the rationale behind decisions.
- Taking ownership** Is highly self-aware, looking for ways to improve, both taking on board and offering constructive feedback. Inspires others to take accountability for their own areas.
- Forward thinking** Driven to question the status quo and explore new ideas, supporting the team to "lead the way" in terms of know-how and learning.
- Professional pride** Sets the bar high with quality systems and control measures in place. Demands high standards of others identifying and addressing any gaps to enhance the overall performance.
- Always inclusive** Ensures accessibility to the wider community, actively encouraging inclusion and seeking to involve others. Ensures others always consider the wider context when sharing information making full use of networks and connections.

Key relationships with others



