JOB DESCRIPTION

Job Title: Post Doctoral Research Associate in Molecular Plant Pathology

Grade: AC2

Department: NRI: Agriculture, Health and Environment Department

Responsible to: Associate Professor in Bioinformatics & Plant Pathology

Responsible for: N/A

Key Contacts: Professor in Molecular Biology, Head of Department - Agriculture, Health & Environment and Director of the Natural Resources Institute

Standard Occupational Classification (SoC code): TBC

Non-Contractual Nature of Role Profile: This role profile is non-contractual and provided for guidance. It will be updated and amended from time to time in accordance with the changing needs of the University and the requirements of the job.

PURPOSE OF ROLE

Study the fungal pathogen *Botrytis cinerea* with a focus on developing strategies to manage this important disease in strawberry cropping. Develop new molecular diagnostic tools for in-field disease identification, exploring the efficacy of biocontrol application to control disease and study the genetic basis of crop resistance.

Undertake research using a variety of molecular and microbiological approaches. These include microbial culturing, pathogenicity assays, molecular biology, genome sequencing and genomic analyses, while documenting and maintaining lab-records to a high standard.

Provide technical support to teaching activities and research projects across the Agriculture Health and Environment Department, facilitating the effective function of the molecular laboratories at NRI whilst adhering to correct procedures, including health and safety guidelines and plant-health licenses.

KEY ACCOUNTABILITIES

Role Specific:

- Use of molecular biology approaches to lead delivery of research projects, including DNA/RNA extraction, PCR/isothermal amplification, Sanger/illumina/nanopore Sequencing.
- Undertaking bioinformatic data analysis, including multi-locus phylogenetics, genomic and transcriptomic data analyses.
- Use of microbiological approaches to lead delivery upon research projects, including preparation of agar plates and liquid media, culture maintenance / propagation, spore preparation for pathogenicity assays.
- Undertaking pathogenicity assays, upon plant material (e.g. fruit, leaf, flower or whole-plant infection) by fungal spores under controlled lab conditions and greenhouse assays on-site and in polytunnels at grower sites.
- Presentation of research to internal and external audiences via verbal updates and presentations.

Team Specific:

- Ensure molecular labs function as required at all times and refer specific problems to Research Facilities Manager.
- Maintain protocols and procedures to ensure compliance with Health & Safety regulations.
- Ensure facilities and procedures conform to Animal and Plant Health Agency licence requirements, where relevant.
- Train and supervise undergraduate and postgraduate students in molecular biology techniques and pass on experience to enable them to conduct research and learn new skills.

Generic:

- Planning and working to deadlines.
- Working independently and as part of a team.
- Recording data clearly and accurately.
- Communication of progress and issues to team / management.

Managing Self:

- Keep abreast of developments within the field and seek continuous improvement of own professional practice.
- Actively participate in established professional development framework activities.
- Behave in a manner which reflects the University values and creates a positive environment for work and study.
- Maintain a high standard of student engagement and satisfaction.

- Seek to maximise the learning outcomes of students (as appropriate).

Core Requirements:

- Adhere to and promote the University's Equality and Diversity policies.
- Ensure compliance with Health & Safety regulations.
- Support and promote the University's Sustainability policies, including the Carbon Management Plan, and carry out duties in a resource efficient way, recognising the shared responsibility of minimising the university's negative environmental impacts wherever possible

Additional Requirements:

- Undertake any other duties as requested by the [e.g. PVC, FOO etc.] or their line manager, commensurate with the grade. This is a professional, demanding role within a complex organisation with an ambitious strategic plan and agenda for change. The role holder will be expected to show flexibility in working arrangements, including working hours, to ensure that NRI delivers the required level of service.).

KEY PERFORMANCE INDICATORS:

- Delivery of work-packages on funded research projects.
- Maintenance of detailed and accurate lab books.
- Reporting of issues and progress in a timely fashion.

KEY RELATIONSHIPS (Internal & External):

- Academic colleagues
- Head of Department
- Research group heads
- NRI administrative and technical staff
- NRI partners and collaborators
- University of Greenwich students
- Project Partners

PERSON SPECIFICATION

EXPERIENCE:

Essential Criteria

- Plant Pathology experience including microbial culturing and undertaking pathogenicity assays.
- Molecular biology experiments e.g. DNA/RNA extractions, PCR, gel electrophoresis and DNA (Sanger) sequencing.
- Bioinformatic experience including processing DNA (Sanger) sequencing data and undertaking Phylogenetic analyses.

Desirable Criteria

- Fungal plant pathology
- Use of microbial biocontrols
- Undertaken previous genome or transcriptome sequencing projects
- Use of isothermal DNA amplification approaches e.g. LAMP, RPA

SKILLS:

Essential Criteria

- Ability to work effectively within a team and under own initiative
- Excellent organisational skills
- Ability to multi-task and manage competing priorities to agreed deadlines
- Good analytical skills, problem solving and judgement
- Effective interpersonal and oral communication skills
- A high standard of written and spoken English

Desirable Criteria

- Programming languages e.g. BASH, Python, Perl, R
- Functional validation of gene candidates e.g. knockout or silencing
- UK driving license to facilitate field visits.

QUALIFICATIONS:

Essential Criteria

- PhD in the biological sciences

Desirable Criteria

- N/A

PERSONAL ATTRIBUTES:

Essential Criteria

- We are looking for people who can help us deliver the values of the University of Greenwich: Inclusive, Collaborative and Impactful.

Desirable Criteria

- Desire to expand skills base
- Track record in publication of research
- Available for immediate start