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| **JOB DESCRIPTION** |
| **SPECIFIC JOB TITLE** | Statistical Data Scientist |
| **GENERIC ROLE TITLE**  | SCIENTIFIC SPECIALIST |
| **LEVEL/GRADE** | D |
| **JOB FAMILY** | SCIENCE CAPABILITIES  |
| **CONTRACT TYPE** | Fixed-term |
| **HOURS** | Full time |
| **REPORTS TO** | Head of Statistics and Data Science |
| **DEPARTMENT** | Statistics and Data Science, Intelligent Data Ecosystems |
| **LOCATION** | Harpenden |
| **DATE**  | 16 January 2024 |
| **OVERVIEW OF ROLE/JOB PURPOSE** |
| Joining the Statistics and Data Science Section, this position offers the opportunity to work in a dynamic, interdisciplinary environment and for the creative application and integration of both existing and novel statistical and data science methods to address research challenges across the agricultural and environmental sciences. The post-holder will be a statistical data scientist, with training and experience in traditional statistical methods, modern data science approaches, or preferably both. They will be expected to collaborate with Rothamsted Research scientists across various disciplines to support externally funded research projects, and, with guidance from the Head of Statistics and Data Science, identify collaborative research opportunities and assist with the development of these as funding proposals. The post-holder will also provide advice to their designated research groups on the design of experiments and application of statistical and data science analysis and modelling methods, as well as contributing to training and knowledge transfer to improve the understanding and appreciation of statistical and data science methods across the institute. The post-holder is expected to carry out the duties listed below and any other duties reasonably required by the line manager or Institute, commensurate with the grade and level of responsibility for this post. |
| **MAIN DUTIES OF ROLE** |
| **Generic Outputs** | **Weighting**  | **Description of Outputs**  | **Description of Job Specific Outputs**  |
| **SCIENTIFIC SUPPORT TO PROJECTS/ RESEARCH GROUPS OR SERVICE USERS** | 50% | Design of methods /software /models /experiments, the collation and testing of data, and contribution to publications and research papers |

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| * Liaise with designated research leaders to establish statistical data science requirements and priorities for their groups
* **Provision of consultancy** to identified research groups (for all research staff and PhD students) and to external organisations under agreed contracts, with guidance from the Head of Statistics and Data Science or other senior members of the group: advising on the design of experiments, sampling and data collection strategies, the analysis and modelling of experimental and survey data, and the interpretation and presentation of the results obtained from these analyses
* **Contributing to collaborative research projects,** delivering the statistical data science elements of the research project, and developing or adapting appropriate approaches to address research challenges and provide innovative solutions, with guidance from the Head of Statistics and Data Science
* Provide input as ‘contributing author’ to publications in leading peer reviewed journals of at least national quality and, where appropriate, as ‘first author’ for publications regarding statistical data science methodology development.
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| **FINANCE AND RESOURCE MANAGEMENT** | 5% | Monitoring of allocated budgets, purchasing of equipment, maintenance of stock, and input into funding and grant applications | * Monitor and efficiently manage own time across multiple research areas/projects, and operate effectively within any budgetary constraints, with guidance from the Head of Statistics and Data Science
* Contribute technical expertise for the purposes of grant applications/ obtaining research funding and advising on resourcing for projects
* Working with the Head of Statistics and Data Science, collaborate with research leaders to develop and win support for innovative research proposals and funding bids from major competitive sources, identifying opportunities where substantial statistical data science contributions could be made, and contributing as a Co-I
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| **WORKING WITH OTHERS** | 25% | Provision of specialist / technical advice and assistance to employees and key stakeholders | * Act as primary point of contact **for provision of statistical data science consultancy** for identified research groups, providing guidance on the design of experiments, sampling and data collection strategies, the analysis and modelling of experimental and survey data, and the interpretation and presentation of the results obtained from these analyses
* Contribute to the development of concept notes for **potential collaborative research projects** with a significant statistical data science component, to the development of collaborative research proposals or PhD proposals based on these concept notes, and collaborate on interdisciplinary projects involving the modification and application of existing or new statistical data science methodology to solve novel biological problems
* Collaborate and share work with group colleagues to make best use of the institute statistical and data science resources
* Collaborate with colleagues in academic and other external organisations to develop novel statistical data science tools where needed to provide innovative solutions to research challenges
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| **LEADERSHIP AND MANAGEMENT OF STAFF AND/OR OF A SCIENTIFIC SERVICE OR FACILITY** | 5% | Accountability for the management and development of staff and/or quality of work within work unit / team /department | * Manage own time to deliver an efficient consultancy and research input
* Contribute to the supervision of PhD students working on collaborative projects.
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| **KNOWLEDGE EXCHANGE, COMMERCIAL-ISATION AND OUTREACH ACTIVITIES** | 10% | Building links with user community and/or delivery of professional training and consultancy services | * Participate in activities which promote the activities of the Statistics and Data Science Group within the institute, e.g. seminars, department meetings and research days
* Develop and review training materials (including eLearning resources) and contribute to training activities within Rothamsted.
* Present and promote own work/research at appropriate applied statistics, data science and agricultural/biological science conferences
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| **CONTINUING PROFESSIONAL DEVELOPMENT** | 5% | Proactive planning of development opportunities which serve to broaden existing knowledge base and lead to acquisition of new skills | * Formulate a clear idea on how career may develop and start to undertake appropriate development activities to acquire new skills
* Review own and colleagues’ learning points to ensure improvements are implemented
* Seek advice, guidance, coaching or mentoring from appropriate individuals
* Initiate and sustains networks and relationships that may present opportunities for development and/or future employment
* Seek appropriate opportunities to enhance employability, including positions outside job family and/or the Institute, and seek to gain broader experience
* Working towards achieving professional accreditation with the Royal Statistical Society or other appropriate qualifications relating to statistical data science consultancy, research and training
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| **Competencies** |  | Stage 2 | * See Appendix
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| **PERSON SPECIFICATION AND SHORTLISTING CRITERIA\*** |
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| **GENERIC ROLE TITLE** | SCIENTIFIC SPECIALIST |
| **LEVEL/GRADE** | D |
| **JOB FAMILY** | SCIENCE CAPABILITIES  |
| **CONTRACT TYPE** | Fixed-term |
| **HOURS** | Full time |
| **REPORTS TO** | Head of Statistics and Data Science |
| **DEPARTMENT** | Statistics and Data Science, Intelligent Data Ecosystems |
| **LOCATION** | Harpenden |
| **EDUCATION/QUALIFICATIONS** | Essential | Desirable | How Tested?\*\* |
| 1. | PhD in applied statistics/data science or MSc in applied statistics/data science and equivalent experience (candidates with an appropriate MSc and limited experience may be considered for appointment at a lower grade), preferably with a focus on biological sciences | ✓ |  | Cert/AF |
| **EXPERIENCE/KNOWLEDGE/SKILLS** | Essential | Desirable | How Tested?\*\* |
| 1. | Experience of applying statistical and data science methods to real biological data | ✓ |  | AF |
| 2. | Broad knowledge of a range of relevant statistical methods: design of experiments, analysis of designed experiments, regression modelling, linear mixed models, generalised linear models, multivariate analysis methods | ✓ |  | AF/IV |
| 3. | Knowledge of biologically-relevant modern statistical data science methods (e.g. Bayesian modelling approaches, “big data” and AI methods, statistical genetics/genomics/bioinformatics) | ✓ |  | AF/IV |
| 4. | Experience of providing statistical data science consultancy in plant or animal sciences |  | ✓ | AF |
| 5. | Experience of teaching statistical data science methods to biological scientists |  | ✓ | AF |
| 6. | Ability to communicate statistical data science concepts to non-statisticians in both one-to-one consultancy and small-class training courses | ✓ |  | AF/IV |
| 7. | Good general computing skills (in a Windows or Linux environment) including good knowledge of one or more statistical software packages (preferably to include GenStat or R) | ✓ |  | AF/IV |
| 8. | Expertise in the use of the GenStat and/or R statistical software packages |  | ✓ | AF |
| 9. | Logical approach and pragmatic attitude to solving problems and developing models | ✓ |  | IV |
| **BEHAVIOURS/COMPETENCIES** | How Tested?\*\* |
| 1. | **Drive for Quality**: Makes incremental improvements to processes | IV |
| 2. | **Strategic Thinking**: Draws on experience when undertaking duties of role | IV |
| 3. | **Creativity and Innovation**: Responds positively to change; identifies and tries out different approaches | IV |
| 4. | **Developing Self and Others**: Formalises development needs for self and participates in learning activities to enhance performance | AF/IV |
| 5. | **Professional Conduct**: Demonstrates an understanding of others’ perspectives | IV |
| 6. | **Productive Relationships**: Is a good team player | AF/IV |
| 7. | **Effective Communication**: Communicates to a wide audience, in an accurate and timely manner | IV |
| **GENUINE OCCUPATIONAL REQUIREMENTS** | Essential | Desirable | How Tested?\*\* |
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| 2. |  |  |  |  |