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| **JOB DESCRIPTION** |
| **SPECIFIC JOB TITLE** | MICROBIAL ENGINEERING TECHNICIAN |
| **GENERIC ROLE TITLE** | SCIENTIFIC TECHNICIAN |
| **LEVEL/GRADE** | C |
| **JOB FAMILY** | SCIENCE CAPABILITIES  |
| **CONTRACT TYPE** | Fixed-term (16 months) |
| **HOURS** | Full time |
| **REPORTS TO** | Dr Tigran Yuzbashev, Research Scientist - Molecular Biochemist |
| **DEPARTMENT** | Plant Sciences and the Bioeconomy |
| **LOCATION** | Harpenden |
| **DATE**  | 08/07/2024 |
| **OVERVIEW OF ROLE/JOB PURPOSE** |
| Overview:To provide superior technical assistance in a newly funded microbial engineering project in the primary area of method and tool development for synthetic biology. The post holder will also have a range of technical duties to support activities across genetic and genomic engineering. This will include preparation of solutions, buffers, media and assisting in a variety of genetic, biochemical, microbiology and molecular biology techniques including conjugational bacterial DNA transfer, CRISPR technology, recombineering, TAR cloning in yeast, Golden Gate and Gibson assemblies. The post holder will also be responsible for maintaining the group’s laboratories as effective workplaces, maintaining stock levels of consumables and resources as required.The role 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 Duties**  |
| **SCIENTIFIC SUPPORT TO PROJECTS/ RESEARCH GROUPS OR SERVICE USERS** | 70% | Design of methods / software / models / experiments and preparation and testing of data | * Using existing methods, carry out microbial engineering, including cultivation-testing microorganisms and in vitro manipulation with nucleic acids and proteins
* Using existing methods write, when required, lab protocols and ensure relevant protocols/standard operating procedures are followed and kept up to date
* Analyse DNA sequencing outputs, design primers and work with DNA sequence files using software and on-line resources
* Assist in the design of research experiments and assist with particular equipment as directed
* Deposit new DNA samples, plasmids, bacterial and yeast strains into the lab collections, keeping well-documented notes and maintaining best practice.
* Plan and prioritise work schedule in line with available instrument resources and demands
* Summarise experimental results and present findings accurately, maintain up-to-date lab book containing all experiment details
* Maintain supplies of consumables, chemicals, oligonucleotides and other components required for experimental work
* Maintain the facility’s laboratory space and resources as an effective, clean and well-stocked workplace
* Help prepare data for publication where applicable and receive acknowledgement where due as a contributor
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| **FINANCE AND RESOURCE MANAGEMENT** | 10% | Stock control and ordering within predetermined budgetary constraints | * Monitor level of required stocks and consumables requirements
* Liaise with line manager to ensure appropriate spend against existing cost centres
* Assist colleagues with routine maintenance of laboratory equipment
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| **WORKING WITH OTHERS** | 5% | Customer relations and interactions with others | * Communicate and liaise with colleagues in the group, regarding consumable requirements
* Maintain a professional working relationship with other members of the group
* Advise and assist colleagues, students and visitors when required
* Attend laboratory or other project/team meetings
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| **LEADERSHIP AND MANAGEMENT OF STAFF AND/OR OF A SCIENTIFIC SERVICE OR FACILITY**  | 5% | Supervising and developing more junior staff and taking responsibility for quality of work within the workshop/laboratory/ work environment | * Liaise with colleagues to ensure that experimental work meets expectations and take action to improve quality of work where required
* Assist visiting workers and work experience visitors
* Ensure the safe handling, storage and disposal of hazardous substances and carry out basic risk assessments as required
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| **KNOWLEDGE EXCHANGE, COMMERCIALISATION AND OUTREACH ACTIVITIES**  | 5% | Promoting the work of the Institute and/or that of the role-holder | * Assist with the presentation of research to end-users (where applicable)
* Participate in public engagement activities (e.g. open days, schools visits)
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| **CONTINUING PROFESSIONAL DEVELOPMENT** | 5% | Identification and actioning of learning objectives and the opportunities and resources available to achieve these | * Seek and request appropriate training courses to develop new skills appropriate to role.
* Attend seminars that are relevant to the wider work-area
* Share knowledge in a supportive way with less-experienced individuals
* Seek opportunities for self-development in normal day-to-day work as well as through agreed development objectives
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| **PERSON SPECIFICATION AND SHORTLISTING CRITERIA\*** |
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| **GENERIC ROLE TITLE** | SCIENTIFIC TECHNICIAN |
| **LEVEL/GRADE** | C |
| **JOB FAMILY** | SCIENCE CAPABILITIES  |
| **CONTRACT TYPE** | Fixed-term (17 months) |
| **HOURS** | Full time |
| **REPORTS TO** | Research Scientist - Molecular Biochemist, Dr Tigran Yuzbashev |
| **DEPARTMENT** | Plant Sciences and the Bioeconomy |
| **LOCATION** | Harpenden |
| **EDUCATION/QUALIFICATIONS** | Essential | Desirable | How Tested?\*\* |
| 1. | Degree in Biology or Chemistry | X |  | AF |
| 2. | A Level in Biology or Chemistry or equivalent NVQ (Level 3 +) qualification | X |  | AF |
| 3. | Appropriate qualifications for role | X |  | AF |
| **EXPERIENCE/KNOWLEDGE/SKILLS** | Essential | Desirable | How Tested?\*\* |
| 1. | Previous employment in a biological/microbiology laboratory environment | X |  | AF |
| 2. | Previous practical laboratory experience working with microorganisms (e.g. preparation of media and cultivation of microbes) |  | X | AF/IV |
| 3. | Previous practical laboratory experience in biochemistry or molecular biology |  | X | AF/IV |
| 4. | Experience in basic molecular cloning techniques (e.g., PCR, plasmid isolation, gel electrophoresis, genetic transformation of microorganisms) |  | X | AF/IV |
| 5. | Experience in advanced molecular biology and genetic techniques (including Gibson assembly, bacterial conjugation, recombineering, TAR cloning) |  | X | AF/IV |
| 6. | Experience in preparation of buffers, media or solutions with precise chemical composition and pH | X |  |  |
| 7. | Previous experience working to Standard Operating Procedures or defined protocols | X |  | AF/IV |
| 8. | Familiarity with basic statistical data/data analysis techniques  | X |  | AF/IV |
| 9. | Awareness of technical support role and provision of activities to support effective laboratory management | X |  | IV |
| 10. | Ability to commence work as soon as possible (e.g. 1-2 months maximum) | X |  | IV |
| **BEHAVIOURS/COMPETENCIES** | How Tested?\*\* |
| 1. | **Drive for Quality**: Is motivated and committed to doing their job to the best of their ability | IV |
| 2. | **Strategic Thinking**: Aligns actions with wider goals and models | IV |
| 3. | **Creativity and Innovation**: Accepts and adapts to change; makes connections and encourages a creative environment | IV/Ref |
| 4. | **Developing Self and Others**: Identifies learning and development needs | IV |
| 5. | **Professional Conduct**: Demonstrates honesty and respect | Ref |
| 6. | **Productive Relationships**: Cooperates with and supports colleagues | Ref |
| 7. | **Effective Communication**: Listens and communicates clearly to others | IV |
| **GENUINE OCCUPATIONAL REQUIREMENTS** | Essential | Desirable | How Tested?\*\* |
| 1. | Excellent record keeping | X |  | Ref |
| 2. | Excellent organisational skills | X |  | Ref |