



<b>Job title</b>	Research Fellow  Title will be 'Research Associate' where an appointment is made before PhD is completed	<b>Job family and level</b>	Research and Teaching Level 4  Appointment will be Level 4 Career Training Grade (CTG) where an appointment is made before PhD has been completed
<b>School/ Department</b>	School of Life Sciences	<b>Location</b>	Nottingham Engineering Biology Labs (NEBL), BioDiscovery Institute (BDI), University of Nottingham

## Purpose of role

The purpose of this role is to undertake the research and achieve the objectives of a research project associated with the new GlycoCell UKRI Engineering Biology Mission Hub. This post is based in the Nottingham Engineering Biology Labs (NEBL) research cluster at the University of Nottingham and involves collaboration with our academic and industrial partners in the GlycoCell consortium.

The person appointed will be expected to plan and conduct work using approaches, methodologies and techniques appropriate to the type of research, including both applying knowledge and approaches already established in the research group/cluster, as well as building on these with new developments for this project. They will also be responsible for preparing outputs including writing and revising manuscripts for journal publication, preparing oral and poster presentations, and other types of outputs such as patent applications.

The person appointed will have the opportunity to use their initiative and creativity to identify areas for research, develop research methods and extend their research portfolio.

	<b>Main responsibilities</b> (Primary accountabilities and responsibilities expected to fulfil the role)	<b>% time per year</b>
1	To plan and conduct research using suitable approaches, methodologies and techniques within the research area.  The research is expected to include: <ul style="list-style-type: none"> <li>• Identification of glycans/glycoproteins of applied interest to target for heterologous biosynthesis from the literature</li> <li>• Identification of sets of genes/candidate genes to encode heterologous biosynthesis of target glycans/ glycoproteins; from literature, databases and via bioinformatic approaches</li> <li>• Design of coding sequences including variants as necessary, and other genetic parts/elements as necessary, to allow construction of genetic clusters for heterologous biosynthesis of target glycans/ glycoproteins</li> </ul>	70

	<ul style="list-style-type: none"> <li>• Literature and bioinformatics approaches to inform design</li> <li>• Characterisation of candidate enzymes to inform design</li> <li>• Application of genetic tools and engineering biology/synthetic biology technologies</li> <li>• Assembly of genetic constructs and libraries including evaluation of library size and quality metrics</li> <li>• Transfer of constructs into cells of suitable organism(s)</li> <li>• Characterisation of relevant properties of modified strains and enzymes including: <ul style="list-style-type: none"> <li>○ Growth characteristics in cultures</li> <li>○ Production of target glycans / glycoproteins</li> <li>○ Enzymatic assays</li> <li>○ Using analytical methods (e.g. LC/GC/NMR/FID/MS/H-PAD) to detect and quantify precursor formation</li> </ul> </li> <li>• Refinement of designs in light of observed results and iterative cycles of strain development</li> </ul>	
2	<p>Research existing literature and monitor publication of new literature to develop and maintain a very good understanding of relevant research and its wider context as a firm basis for conducting the research project.</p> <p>Share learnings with the PI / other Investigator(s) and other research group/cluster members through digital platforms used by the group/cluster, discussions, and through research progress and 'journal club' style presentations at research group/cluster meetings.</p>	5
3	<p>Report experimental results to the PI / other Investigator(s), other group/cluster members, academic collaborators and industrial partner(s) to timeline and in the form requested, through written reports, oral presentations, and discussions. Participate in collaborative meetings and research with other members of the team.</p> <p>Maintain accurate and complete records of all findings, including keeping excellent written, electronic and biological records in line with the group/cluster's working practices.</p>	5
4	<p>Work with the PI / other Investigator(s) to review, develop and potentially revise the project aim and objectives in light of learnings from experimental results, scientific literature, and developments by collaborators and elsewhere.</p>	2.5
5	<p>Work with the PI / other Investigator(s) on dissemination and achieve successful research outputs by:</p> <ul style="list-style-type: none"> <li>• Preparing and revising manuscripts for publication of the research</li> <li>• Contributing to dissemination at national and/or international conferences, as suitable opportunities are identified and agreed with the PI / other Investigator(s)</li> <li>• Complying strictly and carefully with the group/cluster working practices on disclosure, confidentiality, IP and commercial sensitivity as directed by the PI / other Investigator(s)</li> <li>• As necessary, working with the PI / other Investigator(s), academic and/or industrial partner(s), IP lawyers/attorneys and university technology transfer and commercialisation specialists</li> </ul>	5

6	As requested by the PI / other Investigator(s), engage in a professional and constructive manner with industrial partners, and staff and students of other collaborators and partners as necessary.	2.5
7	All group/cluster members including this role holder are expected to contribute positively to the research group/cluster and to foster a positive, supportive, inclusive and respectful culture and environment. This includes providing support, guidance and supervision to other staff and students, especially more junior group/cluster members, and supporting some aspects of general day-to-day activities to ensure a smooth running of the group/cluster and its laboratories.  All group/cluster members including this role holder must contribute to keeping our workplace safe and healthy.	5
8	Assist in writing proposals for further research funding.	5

## Person specification

	Essential	Desirable
<b>Skills</b>	<ul style="list-style-type: none"> <li>▪ Microbiology expertise</li> <li>▪ Molecular biology expertise including molecular cloning / DNA assembly</li> <li>▪ Excellent oral and written communication skills</li> <li>▪ Excellent analytical and critical skills</li> <li>▪ Ability to organise and keep track of complex projects</li> <li>▪ Ability to build relationships and collaborate with others</li> </ul>	<ul style="list-style-type: none"> <li>▪ Glycobiology / glycobotechnology expertise</li> <li>▪ Familiarity with using bioinformatics approaches in biotechnology</li> <li>▪ Ability to foster a research culture and commitment to learn in others</li> </ul>
<b>Knowledge and experience</b>	<ul style="list-style-type: none"> <li>▪ Microbiology experience</li> <li>▪ Molecular biology experience including molecular cloning / DNA assembly</li> </ul>	<ul style="list-style-type: none"> <li>▪ Experience with construction and use of genetic libraries in microorganisms</li> <li>▪ Experience using bioinformatics approaches in biotechnology</li> <li>▪ Experience of scientific collaboration</li> </ul>
<b>Qualifications, certification and training (relevant to role)</b>	<ul style="list-style-type: none"> <li>▪ PhD or equivalent in Engineering Biology, Synthetic Biology, Microbiology, Molecular Biology or other closely related relevant subject area or the equivalent in professional qualifications and experience in research area.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>▪ Very near to completion of a PhD</li> </ul>	<ul style="list-style-type: none"> <li>▪ BSc or Masters degree in Microbiology, Molecular Biology, or closely related field.</li> </ul>



## 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 friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
- Taking ownership** Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
- Forward thinking** Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
- Professional pride** Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
- Always inclusive** Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

## Key relationships with others

