



<b>Job title</b>	Research Associate/Fellow	<b>Job family and level</b>	Research and Teaching Level 4 (Appointment will be Level 4 Career training grade where an appointment is made before PhD has been completed)
<b>School/ Department</b>	School of Life Sciences	<b>Location</b>	University of Nottingham BioDiscovery Institute (BDI)

## Purpose of role

The purpose of this role is to undertake the research and deliver the objectives of an exciting new proof-of-concept project aiming to validate a specific synthetic biology approach to overcoming product and feedstock inhibitions in industrial gas fermentation, which has recently been commercialised. This project brings together state of the art synthetic biology and this important new industrial biotechnology process, which has great potential to achieve large-scale decreases in greenhouse gas emissions and positive impacts on climate change. This externally-funded post is based in the research group of Dr John Heap at the University of Nottingham, and involves an industrial partner.

The person appointed will be expected to plan and conduct work using approaches, methodologies and techniques appropriate to the type of research, following an overall workflow already established in the group, but which will require tailoring to this project. They will also be responsible for writing up their work for publication.

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	The research is expected to include: <ul style="list-style-type: none"> <li>• Literature and bioinformatics searches to inform design</li> <li>• Design and assembly of genetic constructs and construct libraries</li> <li>• Evaluation of the size, quality and sampling of genetic construct libraries</li> <li>• Identification, validation and characterisation of genetic constructs causing improvements or modifications to the desired properties in the target industrial <i>Clostridium</i> strain</li> </ul>	70%
2	Research existing literature and monitor publication of new literature in order to develop and maintain a very good understanding of relevant research and its wider context as a firm basis for conducting the research project.  Analyse and illuminate data, interpret reports, evaluate and criticise texts and bring new insights to research area.	5%

	Share learning with the PI and other research group members through digital platforms used by the group, discussions, and as appropriate through 'journal club' presentations at research group meetings.	
3	Report experimental results to the PI, other group members, academic collaborators and industrial partner(s) to timeline and in the form requested by the PI, through written reports, oral presentations, and discussions. Participate in collaborative meetings and research with other members of the team.  Maintain accurate and complete records of all findings, including keeping excellent written, electronic and biological records in line with the group's working practices.	5%
4	Work with the PI to review, develop and potentially revise the project aim and objectives in light of learnings from experimental results, scientific literature, and developments at the industrial partner.	2.5%
5	Work with the PI on dissemination and achieve successful research outputs by: <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</li> <li>• As necessary, working with the PI, industrial partner, IP lawyers and university technology transfer and commercialisation specialists</li> </ul>	5%
6	As requested by the PI, engage in a professional and constructive manner with the project's industrial partner, and staff and students of other collaborators and partners as necessary.	2.5%
7	All group members including this role holder are expected to contribute positively to the research group 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 members, and supporting some aspects of general day-to-day activities to ensure a smooth running of the laboratory.  All group members including this role holder must contribute to keeping our workplace safe and healthy, including engaging fully with new and potentially changing measures associated with Covid-19.	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>▪ Expertise in microbiology</li> <li>▪ Expertise in microbial genetic modification</li> <li>▪ Molecular biology expertise including molecular cloning</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>▪ Expertise in anaerobic microbiology</li> <li>▪ Expertise in genetic modification of <i>Clostridium</i></li> <li>▪ Expertise in a modern multipart DNA assembly technique</li> <li>▪ Ability to foster a positive and supportive research culture and commitment to learn in others.</li> </ul>
<b>Knowledge and experience</b>	<ul style="list-style-type: none"> <li>▪ Experience of microbiology</li> <li>▪ Experience of microbial genetic modification</li> <li>▪ Molecular biology experience including molecular cloning</li> <li>▪ Experience of scientific collaboration</li> </ul>	<ul style="list-style-type: none"> <li>▪ Experience of anaerobic microbiology</li> <li>▪ Experience of genetic modification of <i>Clostridium</i></li> <li>▪ Experience with a modern multipart DNA assembly technique</li> <li>▪ Experience working with bioreactors</li> <li>▪ Experience with construction and use of genetic libraries in microorganisms</li> <li>▪ Knowledge of the molecular and genetic basis of stress and tolerance in microorganisms</li> <li>▪ Experience with network modelling</li> </ul>
<b>Qualifications, certification and training (relevant to role)</b>	<ul style="list-style-type: none"> <li>▪ Degree or equivalent in relevant subject area</li> <li>▪ PhD or equivalent in Microbiology, Molecular Biology or other closely linked relevant subject area (or close to completion).</li> </ul>	<ul style="list-style-type: none"> <li>▪ BSc or MSc in Microbiology, Molecular Biology, or closely related field.</li> </ul>



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 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



