Post Doctoral Research Associate
Department of Biology

Closing date: 29 July 2019
Interview date: To be confirmed
Vacancy reference: 7770
INTRODUCTION

The Mackinder Lab is looking to recruit a highly motivated, creative and talented postdoc to perform a pivotal role on a 3-year BBSRC/NSF funded project in the Department of Biology, University of York. The project is part of a BBSRC and NSF funded collaboration titled: "Engineering an algal pyrenoid into higher plants to enhance yields" and involves the University of York, University of Edinburgh, University of Cambridge and Princeton University. The work builds upon 8 years of collaboration between the lead PIs with a primary focus of engineering the algal pyrenoid into Arabidopsis to improve photosynthetic performance.

Photosynthesis drives life on Earth. However, the passive diffusion of CO2 from the surrounding environment to the active site of Rubisco can be limiting for photosynthesis. To overcome this nearly all algae have evolved CO2 concentrating mechanisms (CCMs) to concentrate CO2 in the proximity of Rubisco resulting in increased photosynthetic rates. The Mackinder lab (www.mackinderlab.com) focuses on the discovery and characterization of components of the CCM in a diverse range of algae. Recent discoveries in the model green algae, Chlamydomonas reinhardtii, is paving the way for plant engineering of algal based CCMs in plants (Mackinder et al. 2016, PNAS 113:5958–5963; Mackinder et al. 2017, Cell 171:133-147; Freeman Rosenzweig et al. 2017, Cell 171:148-162) with an ultimate goal to improve photosynthetic performance and yields in crops.

The successful candidate will be part of an international team working on understanding pyrenoid structure and function in Chlamydomonas and its engineering into plants. They will interact closely with plant engineers (University of Edinburgh) and have opportunities to visit Princeton University to develop new skills.
Main purpose of the role

- To conduct research under the supervision of senior colleagues and to contribute to the production of research
- To assist in the identification and development of potential areas of research and the development of proposals for independent or collaborative research projects

Key responsibilities

(Role holders will be required to undertake some or all of the duties below)

- To conduct individual and collaborative research projects, duties to include: analysis and interpretation of research data; use of appropriate research techniques and methods; writing up of research results and dissemination through publications, seminar and conference presentations and public engagement and outreach activities; contributing to the identification of possible new areas of research
- To contribute to the preparation of research proposals and applications to external bodies
- To undertake appropriate organisational and administrative activities connected to the research project, including conference organisation, and the development of promotional or educational material including website maintenance and development
- To develop and initiate collaborative working internally and externally, duties to include: the building of internal contacts and participation in internal networks; collaboration with colleagues on joint projects as required; participation in and identification of external networks in order to share information and identify potential opportunities for collaboration and possible sources of funding; attendance at and contribution to relevant meetings
- To provide guidance to other staff and students, as required, as well as coordinating the work of small research teams
- To assist with undergraduate teaching in own area of expertise.

JOB DESCRIPTION

At a glance

Salary £32,236—£39,609 a year

Hours of work Full time/37 hours a week

Contract type Fixed term/3 years

Based at Heslington Campus West
## PERSON SPECIFICATION

<table>
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<tr>
<th>Essential / Desirable</th>
<th>Qualifications</th>
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**First degree in Biological Sciences**

**PhD in molecular biology, cell biology, biochemistry or a related subject or equivalent experience**

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<tr>
<th>Essential / Desirable</th>
<th>Knowledge</th>
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**Knowledge in cell biology to engage in high quality research**

**Knowledge of a range of research techniques and methodologies**

**Has research expertise in an area that will complement and enhance the department’s research strategy and goals**

**Knowledge of photosynthesis**

**Knowledge of algal biology**

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<tr>
<th>Essential / Desirable</th>
<th>Skills, abilities and competencies</th>
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**Highly developed communication skills to engage effectively with a wide ranging audience, both orally and in writing, using a range of media**

**Ability to write up research work for publication in high profile journals and engage in public dissemination**

**Ability to develop research objectives, projects and proposals for own and joint research, with the assistance of a mentor if required**

**Competency to conduct individual and collaborative research projects**

**Excellent skills in molecular biology**

**Excellent skills in biochemistry**

**Highly organised with excellent documentation and communication skills/accurate record keeping**

**Ability and willingness to undertake supervision of postgraduate/undergraduate students and technical staff**
## PERSON SPECIFICATION

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<th>Experience</th>
<th>Essential / Desirable</th>
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<tr>
<td>Experience of carrying out both independent and collaborative research</td>
<td>Essential</td>
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<td>Experience of writing up research work for publication in high profile journals</td>
<td>Essential</td>
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<td>Ability to work as part of a team and also to work independently using own initiative</td>
<td>Essential</td>
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<tr>
<th>Personal attributes</th>
<th>Essential / Desirable</th>
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<tr>
<td>Attention to detail and commitment to high quality</td>
<td>Essential</td>
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<td>Collaborative ethos</td>
<td>Essential</td>
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<td>Interest in and enthusiasm for the subject matter of the project(s)</td>
<td>Essential</td>
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<td>Ability to plan and prioritise own work in order to meet deadlines, including using initiative to plan research programmes</td>
<td>Essential</td>
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<tr>
<td>Commitment to personal development and updating of knowledge and skills</td>
<td>Essential</td>
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THE DEPARTMENT

Our department welcomes staff and students from around the world. We celebrate excellence, breadth and diversity across the spectrum of modern biology.

Our research is focused around fundamental science research foci, which are Cell and Developmental Biology, Molecular and Cellular Medicine, Bioinformatics and Mathematical Biology, Infection and Immunity, Ecology and Evolution, Microbiology, Biochemistry and Biophysics, Cancer and Plant Biology. The Department has successfully continued to establish state-of-the-art laboratory space and a new teaching building opened in Autumn 2016. In the 2014 Research Excellence Framework (REF) exercise, the Department of Biology was again placed in the top 10 in the UK. We are ranked 1st for impact outside academia - our research has had major influence on environmental policy, industry and health. This demonstrates our strengths across the biological sciences: from ecology to biochemistry, biotechnology and biomedical sciences. The Department of Biology covers the spectrum of contemporary biological sciences with no internal barriers, and collaboration internally and externally is strongly encouraged. Our Department comprises >70 academic and teaching staff, >100 research associates, >140 professional support staff (technical and administrative), 180 graduate students, and approximately 860 undergraduates.

The Department places high value on its research-led undergraduate teaching which is reflected in our performance in university league tables and the National Student Survey (NSS). The University holds a Gold Teaching Excellence Framework (TEF) award and we are preparing for departmental TEF awards in 2020. Our staff are committed to delivering high-quality teaching and developing and applying innovative and appropriate teaching techniques using material which creates interest, understanding and enthusiasm amongst students. Staff carry out on-going curriculum review, the review of module content and materials and contribute to the development of teaching and learning strategies.

The department is strongly involved with two prestigious Doctoral Training Partnerships (DTP); the White Rose Doctoral Training Partnership in Mechanistic Biology (BBSRC) and Adapting to the Challenges of a Changing Environment (NERC). The former brings together the very best molecular, chemical and cellular bioscience research across the White Rose Consortium of Universities (Leeds, Sheffield and York), while the latter encompasses environmental, ecological and evolutionary research across the Universities of York, Sheffield and Liverpool, together with the Centre for Ecology and Hydrology. Students benefit from PhD training programmes with interdisciplinary collaboration at their core. This enables students to develop a range of research skills in biological, biochemical, ecological and environmental areas as well as equipping them with core mathematical, data analysis and generic professional skills that are necessary for
THE DEPARTMENT

bioscience research in the coming decades.

As befits a department of our size, we have extensive professional support services which underpin our teaching and research. This includes teams in operational services; horticulture; stores and logistics and teaching laboratory technicians. We provide excellent biological services facilities and mechanical and electronic workshops. We also have administration teams which cover; Health and Safety; Research support to assist with external funding proposals for research activities; a Student and Academic Services team in place to support academic staff and students; a core Department Management Team Hub who support a broad range of administrative processes in order to facilitate the smooth running of departmental activity.

We also have our Bioscience Technology Facility which is a unique resource providing a purpose-built facility for our world-class scientists and technologists working across six bioscience research capabilities. Collectively it brings together a unique range of expertise and equipment, and is recognised as a leading example of how to provide research support in the 21st Century. The focus is on six core areas: Bioinformatics, Genomics, Imaging & Cytometry, Molecular Interactions, Protein Production, and Proteomics. The Department has a dedicated bioinformatics support team within the Technology Facility who can provide help and assistance with a wide range of bioinformatics software.

The Department of Biology operates a set of family-friendly policies and welcomes applications that are made on a part-time and job share basis. We will do our best to accommodate such requests where possible. Staff working patterns are flexible and a formal flexitime system is also in operation and the University has a nursery on site. We are proud to foster a supportive culture that helps staff and students reach their full potential and we embrace equality, diversity and inclusion as well as the values of the Athena SWAN Charter in all our departmental activities. Our philosophy is that poor working practices discriminate disproportionately against women whereas good practices support all. We have a Gold Athena SWAN award in recognition of our culture, ethos and activity.
Founded on principles of excellence, equality and opportunity for all, the University of York opened in 1963 with just 230 students. In 2019 it is the home of more than 18,000 students across more than 30 academic departments and research centres. Since opening over fifty years ago, we have become one of the world's leading universities and a member of the prestigious Russell Group.

We are consistently recognised as one of the leading Higher Education Institutes and one of just six post-war universities to have appeared in the world top 100. We were rated 22nd in the 2019 Times & Sunday Times league table. The University of York has won six Times Higher Education (THE) Awards and five Queen’s Anniversary Prizes.

The University is proud of its association with Athena SWAN, holding multiple awards in support of gender equality, representation and success for all, with gold awards for Chemistry and Biology and a University-wide bronze award.

Of 154 universities that took part in the Research Excellence Framework (REF) in 2014, The University of York ranked 14th overall and 10th for the impact of our research. The University is consistently in the top ten UK research universities and attracts over £60m a year of funding from research alone.

Our vision is to make the University of York a world leader in the creation of knowledge through fundamental and applied research, the sharing of knowledge by teaching students from varied backgrounds and the application of knowledge for the health, prosperity and well-being of people and society.
Attractive workplace

Centred around the picturesque village of Heslington on the edge of the city of York, our colleges are set in an attractive landscaped campus. York enjoys a safe, friendly atmosphere with facilities including bars, shops, theatres and concert halls all within easy walking distance.

The University has undergone an unprecedented period of expansion and renewal since 2000. We have invested in twenty new buildings on the original campus and have completed the first and second phases of a £750m campus expansion. Our investment in new colleges, teaching and learning spaces, laboratories, research facilities and a new sports village mean there has never been a better time to join us.

During this period of change we’ve worked hard to retain our friendly, informal and collegiate atmosphere, which is important to our core values of inclusivity and interdisciplinarity.

We have a thriving international community and are committed to providing staff moving to York with as much support as possible through our Relocation Package and Welcome Officers.

The University is committed to promoting a diverse and inclusive community - a place where we can all be ourselves and succeed on merit. We offer a range of family friendly, inclusive employment policies, flexible working arrangements, staff engagement forums, campus facilities and services to support staff from different backgrounds.

For further information please visit our employee benefit pages.
THE CITY AND THE REGION

The City of York

Internationally acclaimed for its rich heritage and historic architecture, York's bustling streets are filled with visitors from all over the world. Within its medieval walls you will find the iconic gothic Minster, Clifford’s Tower and the Shambles - just a few of the many attractions.

But York isn’t just a great place to visit - it’s also a great place to live and work. While nourishing a vibrant cosmopolitan atmosphere, York still maintains the friendly sense of community unique to a small city. Visit www.visityork.org for more information on the city of York.

Shopping, culture and entertainment

York boasts specialist and unique boutiques but also all the high street stores on its busy shopping streets. Alongside them you will find cinemas, theatres, an opera house, art galleries, a vast range of restaurants, live music venues and clubs. York is particularly renowned for its multitude of pubs and bars, from the modern to the medieval.

Housing and schools

Whether you choose to live close to the city, in one of the surrounding villages or further afield, you will find a wide range of housing within comfortable distance of York and the University. For families, the area has a range of excellent schools both in the state and independent sector.

Great location

York is one of Britain’s best-connected cities. Halfway between London and Edinburgh on the East Coast mainline, on intercity trains you can reach London King’s Cross in less than two hours and Edinburgh in two and a half hours. York is also well served by road links, and it is easily accessible from the A1, M1 and the M62.

For those travelling from overseas, Manchester Airport is two hours away and Heathrow Airport just three and a half. Flights from nearby Leeds Bradford Airport provide easy access to mainland Europe. By Eurostar from London St Pancras, Paris is just over six hours away.

Yorkshire

The Lonely Planet guide recently declared Yorkshire the third best region in the world to visit. There is something to cater to every taste, whether it be the rugged landscapes of the Moors or the Dales, the picturesque seaside towns of Scarborough and Robin Hoods Bay, the gothic architecture of Whitby or the vibrancy of cosmopolitan Leeds.
Apply online

- Go to https://jobs.york.ac.uk
- Find this job using reference 7770
- Complete the online application form

You will need to submit your completed application by midnight (local UK time) on 29 July 2019

What will I need?

You will need to upload:
- your CV
- a letter describing how you meet the requirements of the job

You will also need details of 2 referees.

Help and assistance

Direct any informal queries to luke.mackinder@york.ac.uk or biol-dmthub@york.ac.uk

If you have any questions about your application, contact the HR Services team:

recruitment@york.ac.uk
+44 (0)1904 324835