Lecturer in Mathematical or Computational Biology

Department of Biology

Closing date: 16 December 2018
Interview date: To be confirmed
Vacancy reference: 7168
The Department of Biology at the University of York wishes to appoint a Lecturer in mathematical or computational biology. The appointment will fall within the Department of Biology’s “Bioinformatics and Mathematical Biology” Research Focus, and the successful candidate will join a thriving group of mathematical and computational researchers spanning the life sciences, with strong links to the Departments of Mathematics, Computer Science, Physics, Chemistry, Environment and Geography, and Hull York Medical School.

We seek an internationally-recognised scientist who will lead their own independent research, and bring opportunities for collaboration with existing members of staff in Biology, more widely in the University of York, and with industry. The volume of biological data has increased by several orders of magnitude over the last decade. This increase is matched by growth in computational power and in new mathematical and statistical techniques at the leading edge of biological research. Employers, and especially leaders in science and industry, increasingly demand quantitative, computational and interdisciplinary skills. The successful candidate will be committed to excellence in teaching in this area.
Main purpose of the role

- To develop research objectives, projects and proposals and carry out individual and/or collaborative research projects
- To lead on and/or contribute to the production of research outputs and research outcomes.
- To design, develop and deliver teaching across a wide range of modules and/or within a particular programme or subject area
- To undertake effectively a range of administrative and managerial responsibilities

Key responsibilities

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

Research and Scholarship

- To develop and promote the research activities of the department by developing a personal research plan independently and/or in collaboration with others as part of a larger research team
- To plan, manage and undertake research activities in accordance with a specific project plan, and to manage and guide the work of staff and research students on own specialist area
- To develop innovative research proposals, identify and obtain external sources of funding
- To publish original research in appropriate journals or other relevant media as appropriate and attend international conferences for the purpose of disseminating research results or for personal development

Teaching and Promotion of Learning

- To develop innovative teaching materials, techniques and module design and take responsibility for the quality of the provision
- To plan, deliver and critically review a range of teaching and assessment activities
- To undertake academic supervision of students (including research students) and act as a research supervisor within own specialist subject area
- To set and mark practical sessions, supervisions, fieldwork and examinations and provide constructive feedback to students
- To identify areas where current teaching provision is in need of revision or improvement and propose and implement improvements

Management and Administration

- To undertake the duties of a Programme Director and Module Co-ordinator and be responsible for the design, development and management of departmental teaching modules
- To contribute to the recruitment and selection of research and teaching staff
- To contribute to the administration and management of the department
- To advise, supervise and give guidance to other departmental staff as appropriate
- To develop and build internal and external contacts
# PERSON SPECIFICATION

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<tr>
<th>Qualifications</th>
<th>Essential / Desirable</th>
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<tr>
<td>PhD in mathematics or another strongly numerate discipline, or in quantitative, statistical or computational biology</td>
<td>Essential</td>
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<td>Appropriate academic professional and teaching qualifications or a willingness to complete the Postgraduate Certificate in Academic Practice</td>
<td>Essential</td>
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<th>Knowledge</th>
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<tr>
<td>Specialist knowledge in subject area</td>
<td>Essential</td>
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<td>Knowledge of a broad range of mathematical and computational approaches to bioscience research</td>
<td>Essential</td>
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<td>Research expertise in an area that will complement and enhance the department’s research strategy and goals</td>
<td>Essential</td>
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<td>Knowledge of a range of teaching techniques to enthuse and engage students</td>
<td>Desirable</td>
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<th>Skills, abilities and competencies</th>
<th>Essential / Desirable</th>
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<tr>
<td>Ability to develop research objectives, projects and proposals in mathematical or computational biology.</td>
<td>Essential</td>
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<td>Well-developed analytical skills and considerable experience of developing and/or using relevant software</td>
<td>Essential</td>
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<td>Highly developed oral and written communication skills, including ability to write and/or contribute to publications and/or to disseminate research findings using other appropriate media</td>
<td>Essential</td>
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<td>Ability to deliver presentations at conferences or exhibit work at other appropriate events internally and externally</td>
<td>Essential</td>
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<td>Ability to extend, transform, and apply knowledge from scholarship</td>
<td>Essential</td>
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<td>Ability to design undergraduate teaching material and deliver either across a range of modules or within a subject area including in silico data analysis.</td>
<td>Essential</td>
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<td>Ability to supervise the work of others, for example in research teams or projects or as an MSc PhD or postdoctoral supervisor</td>
<td>Essential</td>
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<th>Experience</th>
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<tr>
<td>An excellent scientific publication record in mathematical or computational biology in peer-reviewed journals (taking into account the applicant’s career status and personal circumstances)</td>
<td>Essential</td>
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<td>Proven ability to contribute to high quality research which is publicly evidenced</td>
<td>Essential</td>
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<td>Experience of taking responsibility for teaching and learning at undergraduate and ideally postgraduate level</td>
<td>Desirable</td>
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<td>Evidence of successful course planning, design and delivery across a range of modules, with exemplification of teaching materials</td>
<td>Desirable</td>
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<td>Experience of the supervision of undergraduate and/or Masters research projects.</td>
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<td>Experience of, and competence in, academic administration.</td>
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## Personal attributes

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<tr>
<td>Show attention to detail and commitment to high quality</td>
<td>Essential</td>
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<td>Display creativity, initiative and judgement in applying appropriate approaches to teaching, learning support and scholarly activities</td>
<td>Essential</td>
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<td>Positive attitude to colleagues and students</td>
<td>Essential</td>
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<td>Willingness to work proactively with colleagues in other work areas/institutions</td>
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<td>Ability to plan and prioritise own work in order to meet deadlines</td>
<td>Essential</td>
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<td>Commitment to personal development and updating of knowledge and skills</td>
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<td>Collaborative ethos</td>
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<td>Show commitment to the department/university outside of their chosen field, for example undertaking management and administration duties</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.

Of particular relevance to this role is the fact that quantitative skills are embedded in the curriculum from the outset, and are developed across all our degree programmes. Statistical theory is presented alongside practical data handling and analysis in R from year 1, and this foundation is built on by linking to mathematical models and bioinformatics in year 2. More specialist training is delivered through taught modules and research projects in the later years.

We currently offer the following degrees within the Department:

- BSc/MBiol Biology
- BSc/MBiol Ecology
- BSc/MBiol Genetics
- MSc Biodiversity, Ecology and Ecosystems
- BSc/MBiochem Biochemistry
- BSc/MBiol Molecular Cell Biology
- BSc/MBiol Biotechnology and Microbiology
- MSc Industrial Biotechnology
- BSc/MBimedSci Biomedical Science
- MSc Molecular Medicine
- MSc By Research
- MPhil
- PhD

The department is strongly involved with two prestigious
THE DEPARTMENT

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 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 to facilitate the smooth running of departmental activity.

Our Bioscience Technology Facility is a unique resource providing a purpose-built facility for our world-class scientists and technologists working across six bioscience research capabilities: Bioinformatics, Genomics, Imaging & Cytometry, Molecular Interactions, Protein Production, and Proteomics. 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 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, a formal flexitime system is 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.
THE UNIVERSITY

Founded on principles of excellence, equality and opportunity for all, the University of York opened in 1963 with just 230 students. In 2018 it is the home of more than 17,000 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 are ranked 16th in the Times & Sunday Times league table (2017). 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 12 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 7168
- Complete the online application form

You will need to upload your CV, a letter describing how you meet the requirements of the job, and you will also need details of 3 referees.

You will need to submit your completed application by midnight (local UK time) on 16 December 2018.

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 3 referees.

Help and assistance

Direct any informal queries to Professor Katherine Denby katherine.denby@york.ac.uk or Dr Jon Pitchford jon.pitchford@york.ac.uk

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

recruitment@york.ac.uk

+44 (0)1904 324835