Lecturer in Chemistry (Magnetic Resonance Imaging)
Department of Chemistry

Closing date: 26 May 2017
Interview date: 30 June 2017
Vacancy reference: 5643
INTRODUCTION

As part of its long-term research strategy, the Department of Chemistry is seeking to appoint a Lecturer in Chemistry within the York Centre for Hyperpolarisation in Magnetic Resonance (CHyM), to contribute to development of magnetic resonance imaging methods to assess disease or other biochemical function. The post is available from September 2017, or as soon as possible thereafter.

CHyM was established in 2012 following substantial investment from the Wellcome Trust and the Wolfson Foundation totalling £7.5M, predicated on the discovery of the SABRE protocol for transferring hyperpolarisation (Science, 2009, 323, 1708). It is housed in a bespoke building on the York Science Park – a short walk from Chemistry – and houses facilities for synthetic chemistry as well as extensive facilities for magnetic resonance.

The successful candidate will conduct research at the interface between chemistry and biochemistry. You will have a firm grasp of the principles and practicalities that underpin MRI, and will be experienced in applying it to solve problems of a biological nature. You will be expected to develop an internationally leading research programme in the area of biologically driven magnetic resonance imaging, but no experience of hyperpolarisation is required. You will, however, contribute effectively to the future development of hyperpolarisation, by developing active collaborations with researchers in CHyM. You will also teach in the Department of Chemistry.

The Department of Chemistry is renowned internationally for its research and combines this with high-quality teaching and outstanding student satisfaction. As part of its commitment to principles of equality, it has developed a series of family-friendly practices that are recognised by an Athena SWAN Gold Award.
Main purpose of the role

- To undertake independent research in biologically driven MRI, utilising facilities within the Centre for Hyperpolarisation (CHyM) at the University of York and the York Neuroimaging Centre (YNIC).

- To undertake research in the area of hyperpolarisation and collaborate actively with researchers in CHyM as they seek to expand into applications involving biochemical study, including the monitoring of disease.

- To develop research objectives, projects and proposals, and carry out individual or collaborative research projects in the area of biochemical study.

- 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 in own specialist area.

- To develop innovative research proposals, identifying and obtaining 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 and/or for personal development.

Teaching and Promotion of Learning

- To plan, deliver and review critically 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 and examinations, and provide constructive feedback to students.

Management and Administration

- 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.

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.
# PERSON SPECIFICATION

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<tr>
<th>Qualifications</th>
<th>Essential / Desirable</th>
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<tbody>
<tr>
<td>PhD in Chemistry or Biochemistry or equivalent experience</td>
<td>Essential</td>
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<tr>
<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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## Knowledge

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<th>Knowledge</th>
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<tr>
<td>Specialist knowledge of Chemistry and Biochemistry suitable for the study of disease or other biochemical function</td>
<td>Essential</td>
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<tr>
<td>High-level knowledge of MRI and its biochemical applications</td>
<td>Essential</td>
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<tr>
<td>Knowledge of a range of research techniques and methodologies</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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<tr>
<td>Research expertise in an area that relates to MRI and will complement and enhance the department’s research strategy and goals</td>
<td>Essential</td>
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<tr>
<td>Advanced and specialist IT knowledge</td>
<td>Desirable</td>
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## Skills, abilities and competencies

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<tr>
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<th>Essential / Desirable</th>
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<tr>
<td>Ability to develop research objectives, projects and proposals</td>
<td>Essential</td>
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<td>Well-developed analytical skills</td>
<td>Essential</td>
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<tr>
<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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<tr>
<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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<tr>
<td>Ability to extend, transform and apply knowledge from scholarship</td>
<td>Essential</td>
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<td>Ability to design teaching material and deliver either across a range of modules or within a subject area</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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<tr>
<td>Excellent IT skills</td>
<td>Essential</td>
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# PERSON SPECIFICATION

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<th>Experience</th>
<th>Essential / Desirable</th>
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<tr>
<td>Proven ability to contribute to high-quality research</td>
<td>Essential</td>
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<td>Experience of taking responsibility for teaching and learning at undergraduate level</td>
<td>Desirable</td>
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<tr>
<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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<tr>
<td>Evidence of dissemination of research findings which may include: the presentation of papers at conferences and workshops; participation in public engagement events to disseminate research; the publishing of chapters in text books; the publishing of papers; articles or reviews in academic journals or elsewhere; the construction of websites</td>
<td>Essential</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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<tr>
<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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<tr>
<td>Positive attitude to colleagues and students</td>
<td>Essential</td>
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<tr>
<td>Willingness to work proactively with colleagues in other work areas/institutions</td>
<td>Essential</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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<tr>
<td>Commitment to personal development and updating of knowledge and skills</td>
<td>Essential</td>
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<td>Collaborative ethos</td>
<td>Essential</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

CHyM is a University of York research centre led by Professor Simon Duckett (Director). The technical activities of CHyM are supported directly by two full-time Experimental Officers with expertise in NMR and MRI, and a Research Technician. In addition to these posts, there is additional administrative and laboratory support. CHyM houses four high-field NMR systems and a DNP Hypersense polariser in addition to providing both laboratory and office space. It has a preclinical MRI system in Biology and access to a human MRI scanner in the adjacent York Neuroimaging Centre.

CHyM seeks to develop hyperpolarisation technologies for both NMR and MRI that are focused on solving their inherent low sensitivity. Researchers in CHyM employ hyperpolarisation techniques such as those that transfer magnetisation from parahydrogen to molecules without the need for a formal chemical reaction. For this appointment, we are seeking to appoint a researcher with a proven track record in biochemically led MRI research, who will develop their own independent research programme in this area, while working more generally through collaboration to help CHyM undertake internationally leading research. This research is regarding the development and implementation of novel hyperpolarisation-based approaches spanning applications that probe chemical transformations, molecular and cellular, tissue and organ, system and whole-organism responses.

The post holder will be a member of the Department of Chemistry, and it is expected that they will carry out research in CHyM. These facilities include a preclinical 7T-30 BioSpec and a vertical-bore 9.4 T Bruker Avance III spectrometer equipped for microimaging. A Siemens 3 T Prisma is also available through collaboration with the York Neuroimaging Centre.

More information on CHyM is available

The Department of Chemistry

The Department of Chemistry is one of the largest and most successful academic departments at York. The Department was placed in the top ten UK universities for Research Power by the 2014 Research Excellence Framework exercise (REF). Amongst our academic staff we have five Fellows of the Royal Society and several national and international prize winners, contributing to a dynamic and thriving department. The excellence of Chemistry at York was recognised in the 2017 Complete University Guide, Times’ Good University Guide and Guardian League Table Guide where it achieved an outstanding 4th place in all three.

The Department has nearly 60 academic staff (including
THE DEPARTMENT

teaching only staff), more than 600 undergraduate students, approximately 160 graduate students (mainly studying for PhDs) and over 80 research associates and fellows. The Department has a group of recently extended and modernised laboratories, which provide an excellent environment for both teaching and research; £35M has been spent on new buildings and equipment in the last seven years.

Staff in the Department of Chemistry undertake research in a wide range of fields and there are particular strengths in analytical science, atmospheric chemistry, chemical and structural biology, green chemistry, materials chemistry, metalloproteins, organometallic and catalytic chemistry, synthetic organic chemistry and time-resolved spectroscopy.

We have nearly 30 administrative staff (including those funded externally), as well as over 50 technical staff who provide assistance in the teaching and research laboratories and maintain the workshops supporting these activities.

The undergraduate courses, which typically attract over 1200 applications for the ca 180 places, have a flexible modular structure with opportunities for specialisation in environmental, green and medicinal chemistry. There are three-year (BSc) and four-year (MChem) courses with opportunities for students to spend a year at one of a number of overseas universities or in industry. Students rated the Department with an overall satisfaction rating of 97% in the National Student Survey 2016.

The Gold award from Athena SWAN for promoting women in science was won by the Department of Chemistry in 2007 and renewed in 2010 and 2015. This was the first Gold award made in this scheme. The Athena SWAN Charter recognises and celebrates good employment practice for women working in science, engineering and technology (SET) in higher education and research. As a Department we strive to provide a working environment which allows all staff and students to contribute fully, to flourish, and to excel. We aim to ensure that there is a supportive and egalitarian culture at all levels and across all staff groups. We promote good practice and a strong culture of equality in higher education.

The case studies on our Equality and Diversity website illustrate the variety of working arrangements of staff which are supported by the Department.

The Department of Chemistry operates a set of family-friendly practices, including arrangements for part-time working, job shares, annualised hours and flexi-time. The Department has helpful maternity, paternity and adoption leave procedures to help provide support for staff with children and the University has a nursery and a Child Care voucher scheme.
The Department provides support for all categories of staff in their applications for promotion, role reviews, awards, prizes and rewarding excellence nominations. Staff are encouraged to attend training events and take up opportunities for professional development including those offered by the award-winning University Learning and Development Team. The Department strives to address diversity inequalities to ensure that there is a culture that supports equality and encourages better representation throughout the Department. Support for all staff at all stages of their career is recognised as being extremely important; individuals will be allocated a specific mentor to help support them in future career development. Social events are also held regularly for members of staff.

Opportunities for employment for partners exist across the University, Science City York or within the City of York. The Department recognises that employment for partners can be an issue for new employees and will be understanding if you raise this and will do its best to help.

The Department is committed to establishing a culture of environmental good practice and all staff are asked to go about their duties in a resource efficient way and minimise impacts to the environment wherever possible.

The University has recently invested heavily in Chemistry including a new research building, the Dorothy Hodgkin Building, which houses Analytical and Synthetic Chemistry, an NMR Centre, and the Centre of Excellence in Mass Spectrometry which opened in 2009. NMR facilities are housed in a purpose-built facility (2006) while construction of a building to house a new Centre for Hyperpolarisation in Magnetic Resonance was completed in October 2012. The second phase of the Dorothy Hodgkin building for materials, synthetic, catalytic and mechanistic chemistry was completed in summer 2012 and the construction of a two-storey building housing new teaching and research laboratories (to house Green Chemistry) and offices was completed in March 2014. The Wolfson Atmospheric Chemistry Laboratories were opened in 2013 and are being extended in 2017, in conjunction with the York Plasma Institute.
THE UNIVERSITY

Founded on principles of excellence, equality and opportunity for all, the University of York opened in 1963 with just 230 students. In 2016 it is the centre for almost 16,000 students across more than 30 academic departments and research centres. In over 50 years we have become one of the world’s leading universities and a member of the prestigious Russell Group.

The University has consistently been recognised as one of the leading Higher Education Institutes and is one of just six post-war universities which appear in the world top 100 (2013-14) and 15th in the Times & Sunday Times league table (2016). The University of York has won six Times Higher Education (THE) Awards and five Queen's Anniversary Prizes.

We are proud of our association with Athena SWAN, holding ten awards in support of women in science, with gold awards for Chemistry and Biology as well as 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 on 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. With a compact and easy to get around design, York enjoys a safe, friendly atmosphere. The campus offers a wealth of facilities, which includes 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 space, 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 all staff moving to York with as much support as possible through our Relocation Package and Welcome Officers.

The University aims to offer a nurturing and supportive environment as an employer. Flexible working hours, nursery facilities, childcare vouchers, cycle to work scheme, generous holidays and an attractive pension scheme all make the University of York one of the region's leading employers.

For further information please visit Rewards Extra.
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](http://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 5643
- Complete the online application form

You will need to submit your completed application by midnight (GMT) on 26 May 2017.

What will I need?

You will need to upload:

- your CV
- a letter that will detail how your interests and experience would allow you to establish your own, independent research programme, as well as collaborate fruitfully with the York hyperpolarisation group
- A 4-page research proposal
- You will also need details of three referees.

Help and assistance

Direct any informal queries to CHyM Director, Professor Simon Duckett (simon.duckett@york.ac.uk) or the Head of Department, Professor Duncan Bruce (chem-hod@york.ac.uk)

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

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