



UNIVERSITY  
*of York*



# Professor of Sustainable Chemistry & Director of Green Chemistry Centre of Excellence

Department of Chemistry

Closing date: 01 March 2020

Interview date: 28 April 2020

Vacancy reference: 8401





## INTRODUCTION



[Green chemistry](#) is recognised internationally as a strength of Chemistry at the University of York. We are seeking a successor to Professor James Clark as Director of the Green Chemistry Centre of Excellence (GCCE) to work with existing GCCE academics to provide the drive and vision needed to ensure that the GCCE maintains its global status and takes advantage of new national and international opportunities relating to areas including green chemistry, sustainable development and circular economies.

Current GCCE research interests include: utilising food supply chain waste as a chemical feedstock; carbon dioxide utilisation; design and development of sustainable solvents; development of sustainable materials; energy efficient processing including use of microwave reactors (batch and flow). This work is carried out in a highly collaborative environment with partners within Chemistry, other York departments and at other UK and overseas institutions. The successful candidate will have research interests that complement and have the potential to enhance and extend our existing research strengths. The appointee will be expected to secure substantial research funding from diverse funding sources including industry, to engage in collaborations within and external to the department and commit to the advancement and strategic development of the Department of Chemistry.

The successful applicant will also be expected to carry out teaching and administrative responsibilities to a high standard. GCCE contributes to undergraduate modules on green and sustainable chemistry and, in addition, delivers a taught MSc in Green Chemistry and Sustainable Industrial Technology which is attracting growing numbers of students from around the world.

The Department of Chemistry is one of the UK's leading Chemistry departments, renowned internationally for its research. This is combined with a commitment to outstanding teaching and student satisfaction, and we have been recognised consistently for our family-friendly policies and are proud of our [Athena SWAN Gold Award](#).

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. Further information can be found within this brief and on our website: [www.york.ac.uk/chemistry/](http://www.york.ac.uk/chemistry/)

**Professor Duncan Bruce**  
**Head of Department**

# JOB DESCRIPTION

## At a glance

**Salary** Minimum starting salary £64,986

**Hours of work** 37 per week (flexibility available)

**Contract type** Open

**Based at** Heslington Campus West

## Main purpose of the role

Professors at York are expected to advance their subject nationally and internationally, and to contribute to maintaining the University as an international centre of excellence for the relevant subject area through research and publication, teaching, networking and consultancy.

The role holder will be the new Director of the GCCE and will lead and manage the various activities within the Centre with support from other colleagues.

## Key responsibilities

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

### To support the research activities of the Department

- To carry out internationally outstanding research and scholarship in areas related to green chemistry, sustainable development and circular economies
- To disseminate this research through monographs, articles in journals of international standing, and other appropriate forms of dissemination, including national and international conference presentations
- To play a leading role in the Department in identifying and securing external funding through research grants and contracts, and in developing collaborative research income-generating activities
- To attract and supervise research students, and, as appropriate, post-doctoral researchers and other support staff
- To support, comply with, and contribute fully to research plans and policies of the Department and the University

- To support and mentor junior academic colleagues in order to promote quality of teaching and research and their career development

### To support the teaching objectives of the Department

- To design and be responsible for delivery of modules and teaching programmes for undergraduate and graduate students
- To play a leading role in departmental and interdepartmental curriculum development and quality enhancement
- To coordinate team teaching, as required, including liaison with other staff and with postgraduates who teach
- To design and mark assessments, and give feedback
- To supervise undergraduate and graduate projects and dissertations
- To carry out teaching in Continuing Professional Development
- To undertake pastoral support of students, as a personal supervisor or in another designated role
- To support and promote fully the University and Department teaching quality assurance standards and procedures

### To contribute to the efficient management and administration of the Department

- To make an important contribution to the leadership and management of the Department, including supporting early career staff and developing new collaborative initiatives
- To attend Departmental meetings, meetings of the Board of Studies, and other committees and working groups within the Department and University
- To carry out relevant professional duties, commensurate with the Professorial grade
- To undertake specific departmental roles and management functions as may be reasonably required by the Head of Department

# PERSON SPECIFICATION

	Essential / Desirable
<b>Qualifications</b>	
PhD in Chemistry or related area	Essential
Membership of professional societies	Desirable
<b>Knowledge</b>	
Outstanding and internationally recognised knowledge of green and sustainable chemistry and related areas	Essential
Knowledge of National and International funding schemes	Essential
<b>Skills, abilities and competencies</b>	
Ability to define, lead, manage and attract funds for internationally excellent research, operating across disciplinary boundaries	Essential
Proven leadership and managerial skills	Essential
Ability to manage and interact with staff and students at all levels and to contribute to broadening the strategic development of the Department	Essential
Evidence of international collaboration	Desirable
<b>Experience</b>	
International leader in a major research field relevant to green and sustainable chemistry, leadership of research group/theme	Essential
Substantial publication record relevant to green and sustainable chemistry in leading peer-reviewed journals	Essential
Attraction and effective supervision of postgraduate students	Essential
Significant and sustained success in accessing research grants and other external funding, including from industry	Essential
Invited presentations at major international conferences	Essential
Effective and sustained involvement in major administrative tasks or positions of responsibility within a department or research unit	Essential
Activity as an invited examiner at other institutions	Desirable
Experience of curriculum development, course design and teaching, learning and assessment methods at UG and PG levels and in encouraging student access and engagement	Desirable

# PERSON SPECIFICATION

Essential /  
Desirable

## Experience (continued)

Participation in national teaching initiatives or international equivalents

Desirable

## Personal Attributes

Demonstrable capacity for strategic thinking and planning

Essential

Ability to take a lead in key administration functions within the department

Essential

Self-motivated, pro-active and innovative

Essential

Demonstrate an awareness of, and commitment to, equality and diversity

Essential



## 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 six Fellows of the Royal Society and many national and [international prize winners](#), contributing to a dynamic and thriving [department](#). The excellence of Chemistry at York was [recognised by the outstanding 4th places in the 2020 Times University League Table](#) guides as well as the 2020 Complete University Guide and Guardian League Table.

The Department has nearly 60 academic staff (including 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 coherent laboratories, recently extended and modernised, which provide an excellent environment for both teaching and research; £35M has been spent on new buildings and equipment in the last seven years.

The University has invested heavily in Chemistry. The Dorothy Hodgkin Building was completed in two phases. The first, housing Analytical Science and Synthetic Chemistry, opened in 2005, while the second phase housing catalytic, materials and synthetic chemistry was completed in 2012. The department is exceptionally well equipped for NMR spectroscopy and departmental instruments are housed in a purpose-built building opened in 2006, while the Wellcome-Wolfson-funded Centre for Hyperpolarisation in Magnetic Resonance (CHyM) was completed in October 2012. The Wolfson Atmospheric

Chemistry Laboratories (WACL) were opened in 2013 and have recently been extended (2018). A two-storey building housing new teaching and research laboratories (to house Green Chemistry) and offices was completed in March 2014. The department, through YSBL, has recently secured funding from the Wellcome Trust, the Wolfson Foundation, a generous alumnus and the university to acquire a 200 kV cryo-electron microscope and a building in which to house it. Construction and installation are expected in 2019.

Staff in the Department of Chemistry undertake [research](#) in a wide range of fields and there are particular strengths in [analytical and archaeological 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 over 30 [administrative staff](#) (including those funded externally), as well as over 50 [technical staff](#) who provide in-laboratory support to teaching and research activities, as well as providing [analytical services](#) (e.g. nuclear magnetic resonance, mass spectrometry, chromatography, X-ray diffraction and elemental microanalysis) and deliver in-house mechanical, glass and electronics workshops services.

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 DEPARTMENT OF CHEMISTRY

## Undergraduate teaching

The degree programmes within the Department of Chemistry at the University of York are recognised nationally and internationally for the quality of their student experience, novel teaching methods and final outcomes. 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, industrial 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 94% in the [National Student Survey](#).

Central to York's teaching is the College system. All Chemistry students belong to one of the eight Teaching Colleges, which contain a number of tutors from different disciplines, one of whom is also the student's pastoral supervisor. The College system provides the majority of the Department's learning support through either tutorials (5 students per session) or workshops (whole College group, maximum 25 students). The core undergraduate Chemistry programme is delivered through lecture courses comprising between 5 and 9 lectures and while some core modules are themed, they are intended to be interdisciplinary and are not delivered as traditional sub-disciplines.

Student teaching laboratory work is undertaken in the recently built Chemistry F-block. In Years 1 and 2, students typically spend one whole day a week in the laboratory. MChem students in Year 3 undertake three advanced experiments in the Autumn Term and an open-ended group mini-project in the Spring Term, designed to act as preparation for final-year research projects. The Department offers a number of transferable skills courses throughout the programme covering topics such as ethics, presentation skills, team working, quantitative skills and mathematics.

## Green Chemistry Centre of Excellence

Established originally in 1998 as the [Centre for Clean Technology](#), the GCCE now occupies purpose-built and well-equipped accommodation over 1,400 m<sup>2</sup>, including an Industrial Engagement Facility that offers academia to business and business to business interactions in a fit-for-purpose environment. Today the GCCE is a world-leading academic facility for pioneering pure and applied green and sustainable chemical research.

In 2011, the GCCE, along with the Centre for Natural Agricultural Products (CNAP, part of the Department of Biology), secured funding to establish the [Biorenewables Development](#) Centre (BDC) offering staff and collaborators the opportunity to demonstrate technology on a multi-kg scale and hence to advance research carried out in the GCCE and/or CNAP to TRL level 5 or 6. The BDC, which houses a wide range of large-scale batch and flow instruments including bespoke microwave facilities in premises close to the university campus, operates as a University-owned not-for-profit company, facilitating the production of large quantities of novel green products for evaluation. The combined facilities of the GCCE and BDC allow us to work from grams to kilograms with a strong emphasis on waste valorisation and clean technologies.

The success of the GCCE has been largely due to the vision and efforts of Professor James Clark and, as a result of his decision to partially retire from September 2019, we are now seeking to appoint his successor.

With other exciting developments planned, our vision is to develop further the high-quality of provision of green and sustainable chemistry within the University of York and we aim to play a leading role in the global strategic step change to a low-carbon, bio-based economy. This will be achieved by pure and translational research, education, training, networking and partnerships embedded within a framework of sustainability.

The GCCE currently comprises four academic staff:

- Professor James Clark (Professor of Industrial and Applied Chemistry; Director of GCCE, 40% contract)
- Professor Michael North (Professor of Green Chemistry; Academic Group Leader for Green and Materials Chemistry)
- Dr Duncan Macquarrie (Reader)
- Dr Avtar Matharu (Senior Lecturer; Deputy Director of GCCE)



## THE DEPARTMENT OF CHEMISTRY - EQUALITY AND DIVERSITY

The [Gold Award from Athena SWAN](#) for promoting women in science was won by the Department of Chemistry in 2007, this was the first Gold Award made in this scheme and it was renewed in 2010 and 2015 with a new style Gold Award achieved in 2019. The Athena SWAN Charter recognises advancement of gender equality: representation, progression and success for all.

York is a founding signatory of the [Technician Commitment](#), which aims to ensure visibility, recognition, career development and sustainability for technicians working in higher education and research, across all disciplines. Chemistry is fully engaged with delivering York's commitment, and as such actively promotes networking (often through TechYork), career development opportunities and CPD activities for technicians.

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. Staff working patterns are flexible and a formal Flexitime system is also in operation. The Department has developed a maternity and paternity leave procedure to help provide support for staff and the University has a [nursery](#).

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 [People and Organisational 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 and individuals are 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.





A place where we can ALL be ourselves #EqualityatYork



## THE UNIVERSITY

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.



## THE UNIVERSITY

### **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](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 8401
- Complete the online application form

You will need to submit your completed application by midnight (local UK time) on 01 March 2020.

### What will I need?

- Your CV
- A letter (2 pages maximum) describing how you meet the requirements of the job and demonstrating your understanding of the department (Labelled as 'Cover Letter')
- A statement (2 pages maximum) of your teaching experience and philosophy (Labelled as 'Statement of your research and teaching intentions')
- A Research Proposal (4 pages maximum) outlining your plans for the first 2 year in the Department (Labelled as 'Academic Paper')
- Please do not upload any additional documents

You will also need to provide details of three academic referees (one International) and one Employment referee

### Help and assistance

Direct any informal queries to Professor Duncan Bruce  
Email: [chem-hod@york.ac.uk](mailto:chem-hod@york.ac.uk)  
Tel: +44 (0)1904 322500

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

[recruitment@york.ac.uk](mailto:recruitment@york.ac.uk)  
+44 (0)1904 324835