



**Faculty of Biological Sciences
School of Molecular and Cellular Biology**

Research Fellow in Structural Biology of Cilia

Fixed term for 2 years

Project Title: Structural Biology of Cilia

Applications are invited for a Research Fellow post to be based in the group of Dr Joe Cockburn at the Astbury Centre for Structural Molecular Biology, University of Leeds, to perform structure/function studies on ciliary proteins. Cilia are the “antennae” of eukaryotic cells, sensing and integrating a wide variety of environmental signals (e.g light, molecules, proteins, and fluid flow). The aim of this work is to obtain a molecular understanding of key regulators of ciliary function, and how defects in these proteins lead to disease.

The project will require extensive knowledge of protein production and purification, biophysical characterisation of proteins and their complexes, and protein structure determination by X-ray crystallography. You must have a PhD in structural biology or a closely allied subject (or have a date set for examination). In addition, experience of performing structural studies by cryo-electron microscopy would be an advantage. You must be motivated and enthusiastic, and demonstrate a high level of relevant laboratory experience and technical competence. The ability to manage your time effectively and work under pressure and as part of a team is essential, as well as having demonstrable expertise in protein X-ray crystallography as evidenced by publications, and have interests in structural cell biology.

The Astbury Centre for Structural Molecular Biology brings together over 60 research groups across the University of Leeds, from biological sciences, physics, chemistry, and mathematics, who share a common interest in understanding the molecular basis of living processes. The Centre is a major hub for structural biology research in the UK, with outstanding facilities and a vibrant, highly interdisciplinary research environment.

For further information please contact Dr Joe Cockburn or visit the group’s website: <http://www.astbury.leeds.ac.uk/people/staff/staffpage.php?StaffID=JJBC>

University Grade 7 (£32,004 – 38,183 p.a.) Due to finding limitations the starting salary for this post will be £32,004 p.a.

Informal enquiries may be made to Dr Joe Cockburn, tel +44 (0)113 3430758, email j.j.b.cockburn@leeds.ac.uk

Closing Date: 16 January 2017

Interviews are expected to be held in February 2017

Ref: FBSMB1092

Click here for further information about working at the University of Leeds
www.leeds.ac.uk/info/20025/university_jobs

Job Description

Responsible to: Head of School of Molecular and Cellular Biology

Reports to: Dr Joe Cockburn

Main duties and responsibilities

- To design and conduct research activity towards achieving the goals of the project, in consultation with the principal investigator as appropriate
- To evaluate methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to their own work
- To develop new experimental procedures and techniques, adapting and evolving them where necessary
- Generating original research output of a quality suitable for publication in peer-reviewed journals and presentation at national and international meetings
- Maintaining accurate and up-to-date records of work carried out
- The use of molecular and structural biology techniques, which will include:
 - Designing and cloning constructs for recombinant protein production in bacterial and insect cells
 - Recombinant protein production and purification
 - All aspects of protein structure determination by X-ray crystallography (crystallisation, collecting X-ray diffraction data using in-house and synchrotron sources, data processing, phasing, refinement and validation).
 - Protein structure determination by negative-strain and/or cryo-electron microscopy
 - Performing protein binding studies
 - Analysis and interpretation of protein structures and inferring biological function therefrom
- To communicate research results through publication, presentation at national and international meetings, or other recognised forms of output
- To understand broader issues relating to the management of research
- To take part in knowledge-transfer activities, where appropriate and feasible
- To contribute to the supervision of junior researchers, as appropriate
- To maintain own continuing professional development and act as a mentor to less experienced colleagues, as appropriate
- To maintain a safe work environment, including ensuring compliance with legislation and the undertaking of risk assessments
- To undertake any other duties commensurate with the post as requested by the Head of School or nominee

University Values

All staff are expected to operate in line with the university's values and standards, which work as an integral part of our strategy and set out the principles of how we work together. More information about the university's strategy and values is available at <http://www.leeds.ac.uk/comms/strategy/>

The University of Leeds' commitment to women in science has been recognised with a national accolade. The University has received the Athena SWAN Bronze Award and the Faculty of Biological Science holds the Athena SWAN Bronze Award in recognition of our success in recruiting, retaining and developing/promoting women in Science, Technology, Engineering, Maths and Medicine (STEMM). We are proud of our commitment to equality and inclusiveness.

Protected characteristics are under-represented in the Faculty in posts in this area. We would therefore particularly welcome applications from members of such groups, however, any appointment will be made entirely on merit.

Person Specification

Essential

- A PhD (or a date set for examination thereof) in structural biology or a closely allied discipline
- A developing publication record in high impact peer reviewed journals, which demonstrates expertise in protein structure determination by X-ray crystallography
- Extensive experience of designing and cloning constructs for recombinant protein production
- Extensive experience of protein production in E coli, and protein purification using Akta systems (or equivalent) to produce milligram-quantities of protein for crystallographic studies
- Extensive experience of all stages of protein structure determination by X-ray crystallography (from pure protein through to validated, refined structures)
- Demonstrable expertise in analysing and interpreting protein structures and inferring biological function therefrom
- Practical experience of investigating protein-protein interactions using at least one of the following techniques: pull downs, isothermal titration calorimetry, surface plasmon resonance, fluorescence anisotropy or microscale thermophoresis
- A demonstrable ability to work unsupervised, under direction from the Principle Investigator and as part of the wider research team
- Effective communication and interpersonal skills
- An understanding of health and safety issues within the laboratory setting
- Strong IT skills, including the use of Microsoft Office and Endnote
- A willingness to work flexibly, when necessary, to fulfil the needs of the research project

Desirable

- Demonstrable experience of solving X-ray crystal structures using experimental phasing techniques
- Demonstrable expertise in electron microscopy
- Demonstrable experience of recombinant protein production in insect cells using baculovirus-driven expression

Additional Information

The University offers generous terms and conditions of employment, a wide range of benefits, services, facilities and family friendly policies. Full details are available on the Human Resources web pages accessible at www.leeds.ac.uk/hr

The Partnership

The Partnership has been developed by students and staff and describes the mutual expectations of us all as members of the University of Leeds community. More information about the Partnership is available at <http://partnership.leeds.ac.uk>.

Criminal record information

A criminal record check is not required for this position, however, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our [Criminal Records policy](#). You can find out more about required checks and declarations in our [Criminal Records](#) information.

Disabled Applicants

The post is located in the Faculty of Biological Sciences. Disabled applicants wishing to review access to the building are invited to contact the department direct. Additional information may be sought from the Recruitment Officer, email disclosure@leeds.ac.uk or tel + 44 (0)113 343 1723.

Disabled applicants are not obliged to inform employers of their disability but will still be covered by the Equality Act once their disability becomes known.

Further information for applicants with disabilities, impairments or health conditions is available in the applicant guidance.

School of Molecular and Cellular Biology

The School, comprising 50 principal investigators, together with our sister Schools of Biomedical Sciences and Biology, was formed in September 2005. The aim of the school is to provide a stimulating environment for world-class research. We have a strong emphasis on inter-disciplinary activity, with the aim of developing the boundaries between traditional disciplines. To this end, collaborations between members of SMCB and our sister schools within FBS are strongly encouraged. Moreover, the Astbury Centre for Structural Molecular Biology is a cross-faculty centre that includes staff from the Faculty of Mathematics and Physical Sciences and the Faculty of Medicine and Health.

Biological Sciences

The Faculty of Biological Sciences is one of the leading groups of life-science researchers within the UK, offering superb facilities, providing a high quality research training environment and delivering an exceptional student education.

Our position amongst the UK elite for bioscience research was confirmed in the results of the recent Research Excellence Framework (REF) where we were ranked as 6th in the country for research impact. The assessment also identified that over 80% of biological science research at Leeds has a top quality rating of either "world leading" or "internationally excellent". In the most recent assessment of UK research quality (REF2014) we were ranked 1st in the UK for "World Leading" research in Cardiovascular and Sports Exercise.

In addition to 110 academic staff, the Faculty has over 400 postdoctoral fellows and postgraduate students supported by a current active research grant portfolio of some £53m derived from a range of sources including charities, research councils, the European Union and industry. In the global university rankings for life sciences we are currently ranked 52nd.

With around 2000 undergraduate students and 150 taught postgraduate students, we are one of the largest life sciences faculties in the UK. Our programmes cover the breadth of the biological sciences with undergraduate programmes in the areas of biology, biochemistry, microbiology, sport and exercise sciences and medical sciences including physiology and neuroscience.

Significant investments in our infrastructure contribute to our dynamic and vibrant research environment, offering excellent opportunities for leading edge research focused around key areas, including neuroscience, sports and exercise science, membrane biology, and structural molecular biology

The Faculty has 3 Schools:

- [School of Biomedical Sciences](#)
- [School of Molecular and Cellular Biology](#)
- [School of Biology](#)

Find out more about the Faculty [here](#)