



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Structural and Computational Biology, Faculty of Biological Sciences



Salary: Grade 7 (£32,548– £38,833 p.a.) Due to funding limitations an appointment cannot be made above £34,520 p.a.

Reference: FBSMB1122

Closing date: 2 January 2018

Fixed-term until 28 February 2020, potential to extend for further 24 months

Available from 20 January 2018

Research Fellow in Structural and Computational Biology, School of Molecular and Cellular Biology

Are you an ambitious researcher looking for your next challenge? Do you have an established background in structural and computational biology? Are you interested in disordered proteins, protein folding and protein-protein interactions? Do you want to further your career in one of the UKs leading research intensive Universities?

Many of the proteins that are critical for cancer development are intrinsically disordered or have large disordered regions. Moreover, the genetic alterations that promote cancer generate mutated forms of proteins that are destabilized. One example is the fusion protein formed from the microtubule binding protein EML4 and the tyrosine kinase ALK. The EML4-ALK fusion is the key driver in approximately 5% of non-small cell lung cancer (NSCLC) patients. Alternative breakpoints in the EML4 gene result in fusion proteins of different lengths and properties, and patients with longer forms respond better to treatment than those with shorter forms. We do not understand why this is the case, but we hypothesize that it is due to differences in protein stability and protein-protein interactions. The longer forms of EML4-ALK, found in two-thirds of patients, include only part of a tandem beta propeller (TAPE) domain. The broken TAPE domain does not impede the expression of the fusion protein, or inhibit the catalytic activity of the fused ALK kinase, and contributes directly to cancer signaling. This is remarkable because the folding of the broken TAPE domain should be severely compromised.

We are looking for a Research Fellow to explore the structural dynamics and interactions of disordered regions of proteins of relevance to cancer, starting with the broken TAPE domain of EML4-ALK. You will explore the structure and dynamics of the broken TAPE domain in the fusion protein, characterize its molecular interactions and decipher the molecular mechanisms that underpin cancer signaling. Approaches will include molecular simulation, biophysical characterization of protein folding and advanced mass spectrometry. We have a long-standing interest in intrinsically disordered proteins and their interactions, protein kinases and cancer signalling. The post is funded by a Programme Award from Cancer Research UK, which supports a thriving research group embedded in the [Astbury Centre](#) for Structural and Molecular Biology.



What does the role entail?

As a Research Fellow your main duties will include:

- Designing, planning and conducting a programme of investigation, in consultation with [Professor Richard Bayliss](#);
- Generating independent and original research ideas and methods in computational and structural biology with an aim to extend our research portfolio;
- Making a significant contribution to the dissemination of research results by publication in leading peer-reviewed journals, and by presentation at national and international meetings;
- Working independently and as part of a larger team of researchers, both internally and externally to develop new research links and collaborations and engage in knowledge transfer activities where appropriate;
- Contributing to the supervision of junior researchers and PhD students and acting as a mentor to less experienced colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and relating such evaluations to your own research;
- To contribute to, and to encourage, a safe working environment.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

What will you bring to the role?

As a Research Fellow you will have:

- A PhD (or close to completion) in structural or computational biology or a closely allied discipline;
- Experience in computational methods applied to structural biology, such as molecular simulation or mathematical modelling;
- Experience in recombinant protein expression and purification for structural biology studies;
- The ability to design, execute and write up research independently;
- A developing track record of peer reviewed publications in international journals;



- Excellent communication skills, both written and verbal and the ability to communicate your research at national and international conferences;
- Good time management and planning skills, with the ability to meet tight deadlines;
- A proven ability to work well both independently and as part of a team;
- The ability to work accurately and carefully;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience in the study of intrinsically disordered proteins, protein folding or protein-protein interactions using biophysical techniques;
- Experience of mass spectrometry applied to the study of protein conformation or protein complexes in their native state;
- Evidence of pursuing external funding to support research.

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised [closing date](#).

Your application should include:

- A supporting statement providing evidence to support each requirement listed on the 'What will you bring to the role' section of the Candidate Brief (no more than two sides of A4, minimum font size 11);
- An academic curriculum vitae, including a list of your publications.

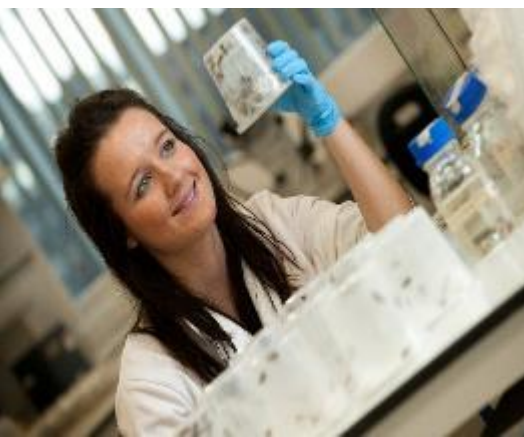
Contact information

To explore the post further or for any queries you may have, please contact:

[Richard Bayliss](#), Professor of Molecular Medicine

Tel: +44 (0)113 343 9919

Email: r.w.bayliss@leeds.ac.uk



Additional information

Find out more about the [Faculty of Biological Sciences](#) and the [School of Molecular and Cellular Biology](#)

Working at Leeds

Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our [Working at Leeds](#) information page.

A diverse workforce

The University of Leeds and the Faculty of Biological Sciences are committed to providing equal opportunities for all and offer a range of family friendly policies. The University is a charter member of Athena SWAN (the national body that promotes gender equality in higher education), and the Faculty of Biological Sciences gained a Bronze award in 2014 and submitted an application for a Silver award in April 2017. We are proud to be an inclusive Faculty that values all staff, and are happy to consider job share applications and requests for flexible working arrangements from our employees. Our Athena SWAN webpage provides more information. <http://www.fbs.leeds.ac.uk/equality-and-diversity/athena-swan/>

Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974

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 page.

