



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

**Research Fellow in Representation Theory,
Faculty of Engineering & Physical Sciences**



Salary: Grade 7 (£33,797 – £40,322 p.a.)

Reference: EPSMA1011

Closing date: Sunday 15 March 2020

Fixed-term for 3 years

We will consider flexible working arrangements

Research Fellow in Representation Theory, School of Mathematics.

Are you an ambitious researcher looking for your next challenge? Do you have an established background in at least one of the following areas: representation theory of quivers, cluster algebras, cluster categories, Postnikov diagrams and Grassmannian cluster structure, quivers with potentials? Do you want to further your career in one of the UK's leading Universities?

We are looking for a postdoctoral Research Fellow to work on Karin Baur's Royal Society Wolfson Fellowship '*Surface categories and mutation*'. The project is about the interplay between algebra, geometry and combinatorics. We take surfaces obtained from gluing polygons and use them to define and explore algebraic structures such as cluster categories. Diagonal flips in triangulations and their algebraic effect mutation are key notions in cluster categories.

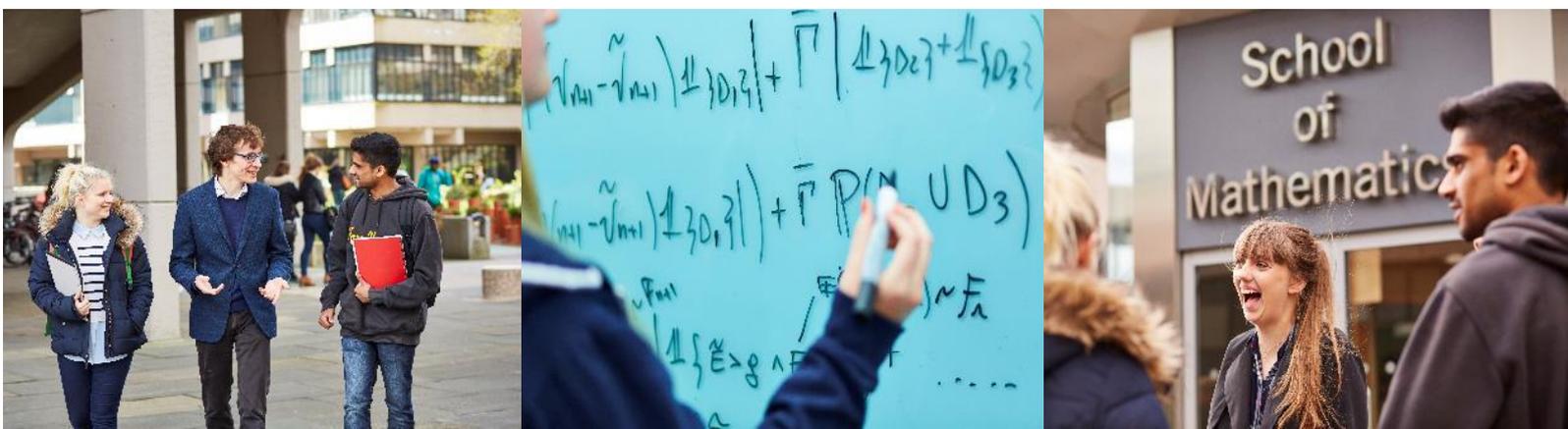
One of the aims of the project is to determine the mutation in the associated category. Another aim is to find categories associated to dimers which can be derived from Scott's work on the cluster algebra structure of the Grassmannian. You will contribute to the project aims by studying dimers on surfaces, or quivers with potentials and characterize associated categories of modules. You will be working with Professor Karin Baur.

You will have a PhD (or close to completion) in Mathematics with a strong background in cluster algebra, cluster categories or representation theory.

What does the role entail?

As a Research Fellow, your main duties will include:

- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;



- 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 both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

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 Mathematics;
- A strong background in cluster algebra, cluster categories, or representation theory;
- The ability to design, execute and write up research independently;
- Good time management and planning skills, with the ability to meet tight deadlines;
- 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;
- Proven ability to manage competing demands effectively, responsibly and without close support;
- A proven ability to work well both individually and in a team;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience of pursuing external funding to support research;
- Experience in mentoring early career researchers.



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](#).

Contact information

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

[Professor Karin Baur](#), School of Mathematics

Email: K.U.Baur@leeds.ac.uk

Additional information

Faculty and School Information

Further information is available on the research and teaching activities of the [School of Mathematics](#).

A diverse workforce

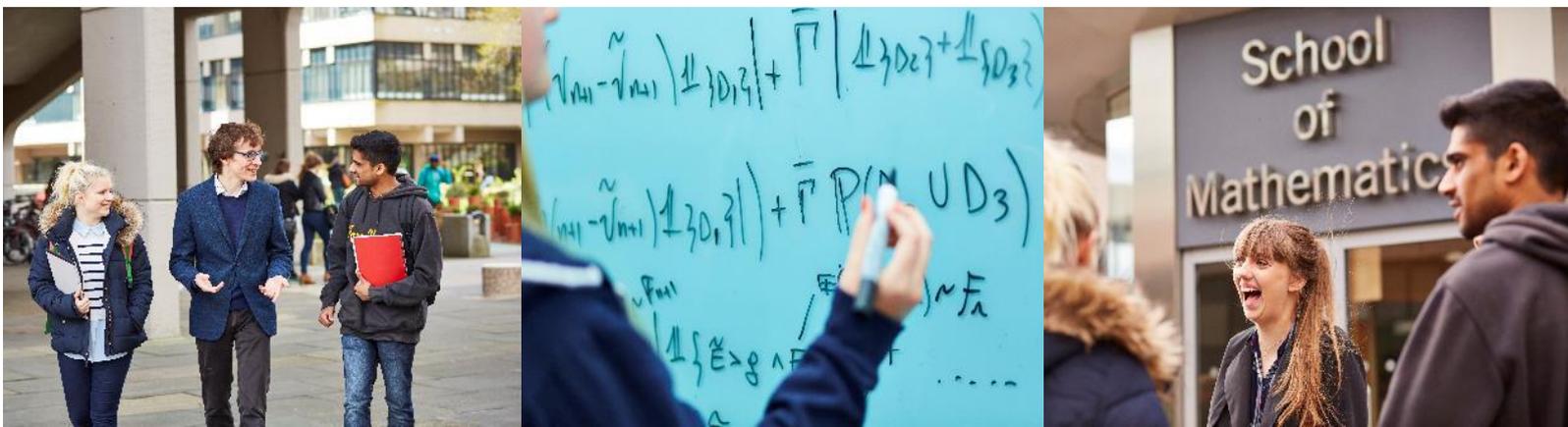
The Schools in the Faculty of Engineering & Physical Sciences are proud to have been awarded the Athena SWAN [Bronze](#) or [Silver](#) Award from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our [equality and inclusion webpage](#) provides more information.

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.

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.

