



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Early Stage Researcher in Adhesion Biology, Faculty of Maths & Physical Sciences and Faculty of Biological Sciences



Salary: In line with Marie Skłodowska-Curie Innovative Training Network requirements

Reference: FBSAS1020

Closing date: 4 January 2018

Interviews are expected to be held 15-16 February 2018

Fixed-term for 36 months

Early Stage Researcher in Adhesins and Infection Biology Marie Skłodowska-Curie Innovative Training Network, Faculty of Maths & Physical Sciences and Faculty of Biological Sciences

Are you a rising star in the field of Adhesins in pathogens, in the first four years of your research career and based outside the UK? Do you want to further your career and attain a PhD in one of the UK's leading research intensive universities?

ViBrANT is a Marie Skłodowska-Curie Innovative Training Network (MSCA-ITN-ETN). We offer an innovative multidisciplinary and intersectoral research training programme in adhesion biology, ranging from genomic analysis through structural biology to the development of diagnostics and of anti-adhesive materials. Nine academic institutions, one non-profit research institute, three SMEs, and one large enterprise form the core of [ViBrANT](#): students will translate fundamental research into technologies with a strong positive impact on European socio-economic development and the care of patients with infectious diseases, both during their PhDs and after.

As an Early Stage Researcher in Leeds, you will undertake research in statistical methodology, specifically in mixed models for categorical data and survival models for high dimensional data. You will interact and develop research collaborations with our [ViBrANT](#) academic and industrial partners, and in addition you'll participate in activities of the Innovative Training Network, including attending training courses and visiting other sites.

To meet the requirements of the Marie Skłodowska-Curie Innovative Training Network, you will be an early stage researcher within the first four years of your research career, have not yet been awarded a doctoral degree (PhD), and have not lived or carried out your main activity (work/study) in the UK for more than 12 months during the past three years.

As well as previous research experience, you will have a BSc in Biochemistry/Chemistry or a related discipline and ideally an associated Masters or an equivalent level of professional qualifications or experience.



Salary:

The Marie Skłodowska-Curie Early Stage Researcher living and mobility allowance is fixed at €45,785 p.a. (plus family allowance if applicable). This amount will be subject to tax and employee's National Insurance deductions, and will be paid in UK Sterling (£) using an appropriate conversion rate.

What does the role entail?

As an Early Stage Researcher your main duties will include:

- Contributing to the ViBrANT Innovative Training Network (ITN) under the supervision of Dr Sally Peyman and Professor Paul Millner;
- Undertaking ongoing research at doctoral degree level into adhesion research as indicated on the ViBrANT website;
- Participating in ViBrANT ITN activities to ensure a successful programme of investigation, including attending group meetings and seminars, training courses and site visits; as well as collaborating with academic and industrial partners;
- Contributing to the dissemination of research results in leading peer-reviewed journals and through presentation at meetings and conferences, with guidance as necessary;
- Ensuring good progress of your work and keeping up-to-date records;
- Providing support and advice to other members of the ITN;
- Working both independently and as part of a larger team of researchers and stakeholders;
- Continually updating your knowledge, understanding and skills in the research field in which you work.

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 an Early Stage Researcher you will have:

- A BSc in Biochemistry/Chemistry or a related discipline;



- The ability to meet all eligibility requirements for appointment in the UK as an Early Stage Researcher funded by the Marie Skłodowska-Curie Innovative Training Network:
 - You must be within the first four years (full-time equivalent) of your research career, and have not yet been awarded a doctoral degree (e.g. PhD), at the time of recruitment to this role;
 - You must not have resided or carried out your main activity (such as work or study) in the UK for more than 12 months during the three years prior to your recruitment to this role;
- The ability to meet the University's eligibility requirements to enrol on a PhD degree, including English language requirements if English is not your first language;
- Flexibility and willingness to engage in new fields ;
- Experience of undertaking academic research;
- Good interpersonal and communication skills, both written and verbal, and the ability to communicate effectively with a wide range of stakeholders;
- Good time management and planning skills, with the ability to meet tight deadlines and manage competing demands effectively;
- A proven ability to work well both independently and as part of a team;
- A strong commitment to your own continuous professional development.

You may also have:

- An associated Masters or an equivalent level of professional qualifications or experience;
- Knowledge and experience of fluidics;
- Evidence of contributing to papers in internationally recognised, peer-reviewed journals or evidence of publishable research in progress.

How to apply

You are required to apply online for this post through the [ViBrANT](#) website and applications should be submitted by **23.00** (UK time) on the advertised closing date.

Your application should include a 1 page summary of a previous research project and copies of certificates where appropriate. You will also have the opportunity to identify your favourite project and select up to two alternative projects within the [ViBrANT](#)



consortium. You will also be required to submit two letters of recommendation, using the [ViBrANT](#) template; which should be sent independently by your referees.

Contact information

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

[Dr Sally Peyman](#), University Academic Fellow

Tel: +44 (0)113 343 3747

Email: S.Peyman@leeds.ac.uk

[Professor Paul Millner](#), Professor in Bionanotechnology

Tel: +44 (0)113 343 3149

Email: p.a.millner@leeds.ac.uk

Additional information

ESR3 – Nanobiosensors for pathogen analysis

Background: Adhesion is the heart of virulence, playing the first and decisive role in infection. Bacteria and viruses adhere to organic or inorganic surfaces, to each other, to host molecules or to host cells. All these will be explored in the ViBrANT network. This PhD project is one of 15 in this training network. The PhD students in the network will work on measuring and understanding the binding modes of adhesins, on the structural biology and biophysics of adhesion, and on aspects of pathogen capture including biosensors, microfluidics and the development of new diagnostic platforms.

Aim of the project: This is a translational project that focuses on fabricating biosensors and accompanying microfluidic lab-on-a-chip devices in which the biosensors will be deployed. Construction of biosensors, both optical and electrochemical, will utilise host factor proteins or their fragments as bioreceptors to sense specific autotransporter adhesins (TAAs). The subsequent readout of the binding event will be by electrochemical impedance (e.g. Caygill et al., 2012; Biosens. Bioelectr. 32, 104-110) or lanthanide fluorescence from up-conversion nanoparticle (Guller et al., 2015; Nano Research 8, 1546-1562) or lanthanide tagged Affimers (Tiede et al., 2017; eLife 2017; 6:e24903) which are synthetic binding proteins. Design



of the bioreceptor proteins will be critically informed by the output from other ESR projects, e.g. ESR1. Biosensors developed in this project will be integrated into microfluidic devices for ease of control over small sample volumes, automation of fluid handling and integrated detection methods.

You will receive training in the design and fabrication of microfluidic devices for integration with biosensors to produce bespoke, adhesin-based diagnostic platforms. The project will involve secondments to our network partners Centre for Nanotechnology and smart materials (CeNTI) (Portugal) and the University of Hull (UK).

Find out more about the [University of Leeds](#), the, [Group for Molecular & Nanoscale Physics](#), [The Leeds Bionanotechnology Group](#) [Astbury Centre for Structural Molecular Biology](#) and the [Goldman laboratory](#).

Our project partners

[University of Oslo, Department of Biosciences](#)

[Goethe University Frankfurt am Main, Institute for Medical Microbiology and Infection Control](#)

[Centre for Nanotechnology and Smart Materials \(CeNTI\), Portugal](#)

[University of Minho, Department of Biological Engineering,](#)

[University of Helsinki, Faculty of Biological and Environmental Sciences,](#)

[University of Tübingen, Interfaculty Institute of Biochemistry](#)

[Lund University, Faculty of Medicine](#)

[Institut Pasteur, Structural Bioinformatics Unit](#)

[University of Hull, School of Mathematics and Physical Sciences](#)

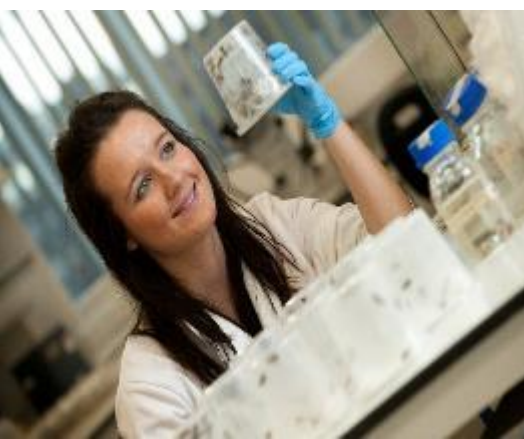
[BioMerieux corporation, Marcy L'Etoile, France](#)

Our other research

Find out more about the [Faculty of Mathematics and Physical Sciences](#), [Faculty of Biological Sciences](#) and the [School of Biomedical Sciences](#) and the [Marie Skłodowska-Curie](#) research and innovation scheme.

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 currently hold a Bronze award. 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.

