Job Related Information

This document includes information about the role for which you are applying and the information you will need to provide with your application.

1. Role Details

<table>
<thead>
<tr>
<th>Vacancy reference</th>
<th>14676</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job title:</td>
<td>Post Doctoral Research Associate</td>
</tr>
<tr>
<td>Reports to:</td>
<td>Lecturer, Mathematics and Statistics</td>
</tr>
<tr>
<td>Salary:</td>
<td>£32,548 – £38,833</td>
</tr>
<tr>
<td>Terms and conditions:</td>
<td>Research Staff</td>
</tr>
<tr>
<td>Grade</td>
<td>AC2</td>
</tr>
<tr>
<td>Duration of post:</td>
<td>24 months starting 1 October 2018</td>
</tr>
<tr>
<td>Working hours:</td>
<td>Full Time</td>
</tr>
<tr>
<td>Location:</td>
<td>Milton Keynes</td>
</tr>
<tr>
<td>Closing date:</td>
<td>Noon, 29 June 2018</td>
</tr>
<tr>
<td>Type of application form accepted:</td>
<td>Short Application Form CV Covering letter detailing how you meet the person specification</td>
</tr>
<tr>
<td>Number of referees required:</td>
<td>3</td>
</tr>
<tr>
<td>Unit recruitment contact:</td>
<td>Janie Barker</td>
</tr>
</tbody>
</table>
2. Summary of duties

Applications are invited by talented researchers for a Research Associate position funded by the EPSRC Grant ‘Droplets with dynamics size on smooth surfaces’, under the supervision of Dr Marc Pradas, in the Applied Mathematics section of the School of Mathematics and Statistics at The Open University.

This project concerns the theoretical/computational modelling of sessile droplets that have a time-dependent volume, either because there is mass exchange through the droplet interface (evaporation/condensation) or because the droplet sits on a porous material. The main goal is to investigate how the dynamics of the droplet is affected by smooth variations (either chemical or topographical) on the solid surface.

The RA will join a vibrant research group with several academic collaborators, both national and international, working on related problems. The successful candidate will also be supported in their career development with a range of different courses from the Staff Development programme at the OU.

Main Duties

1. To investigate how the dynamics of 3D sessile droplets that have a time-dependent volume is affected by simple smooth variations on the solid surface.
2. To understand the equilibrium states of droplets with dynamic size by means of bifurcation theory.
3. To develop low-dimensional models to characterize the dynamics of the droplets.
4. To develop/adapt appropriate diffuse-interface models to study this particular problem.
5. To apply the theoretical findings to study application-driven problems such as directed droplet motion and multidroplet systems.
6. To write papers on the research and publish them in peer-reviewed journals, and to present findings at international conferences and workshops.

All Staff are expected:

7. To undertake any other duties that may be reasonable required.
8. To demonstrate a strong commitment to the principles and practice of equality and diversity.

3. Person specification

Requirements  (E = Essential/ D = Desirable)

Education, qualifications and training

A PhD in Applied Mathematics, Physics, or a closely related field.

Knowledge, work and other relevant experience

Essential:

- Strong foundation on general mathematical modelling and mathematical techniques (analytical and numerical).
- Basic knowledge of fluid mechanics.
- Programming skills.
4. Role specific requirements e.g. Shift working

The candidate must be able to travel to occasional project meetings in other UK institutions.

5. About the unit/department

**Faculty of Science, Technology, Engineering & Mathematics**
The Faculty of Science, Technology, Engineering and Mathematics (STEM) is comprised:

- School of Computing & Communications
- School of Environment, Earth & Ecosystem Sciences
- School of Engineering & Innovation
- School of Life, Health & Chemical Sciences
- School of Mathematics & Statistics
- School of Physical Sciences
- Knowledge Media Institute
- Deanery including teams supporting Curriculum, Research and Enterprise, Laboratory Infrastructure and Faculty Administration

“We aspire to be world leaders in inclusive, innovative and high impact STEM teaching and research, equipping learners, employers and society with the capabilities to meet tomorrow’s challenges”

The Faculty of STEM consists of 700 staff and 1,800 Associate Lecturers. The Faculty delivers over 185 modules across undergraduate and postgraduate curriculum, supporting nearly 19,000 students (full time equivalents) which is 29% of the OU total.
The Faculty generates more research income (circa £17M) than any other Faculty in the University, supported by a comprehensive laboratory infrastructure.

We are proud of our distinctive values and capabilities underpinning our aspiration:

**We are inclusive:**
- We transform people’s lives, ensuring STEM education is openly accessible to many thousands of students from diverse backgrounds – our students express high satisfaction with their study experience
- We engage the public in exciting citizen science and engineering, including through free open educational resources, multi-platform broadcasting, outreach to inspire the next generation and with programmes to encourage more women into STEM

**We are highly innovative:**
- We are at the forefront of innovative developments in teaching practical science and engineering at a distance, through simulated and remote access laboratories and practical experimentation
- Our high quality teaching and curriculum are informed by world-leading research, strong links with professional bodies and communities of practitioners, as well as by scholarship focused on continuously improving our STEM pedagogy

**We deliver significant social and economic impact:**
- We provide STEM higher education at a scale and reach unsurpassed in the UK, with a sizeable international reach and further growth potential
- We inject transferable STEM skills and knowledge direct into the workplace for immediate employee and employer benefit, as students combine study while working
- The employability value of our courses is underpinned by accreditation from leading STEM Professional Bodies and Learned Societies, as well as partnerships and sponsorships with leading employers
- Our high quality, applied and academically relevant teaching and research addresses real-world issues, delivering impact for industry and society, including addressing pressing STEM skill-shortages across the UK

**School of Mathematics and Statistics**

The School is the largest UK provider of higher education mathematics and statistics teaching, with well over 15,000 student registrations each year. Many of our courses are also taught outside the UK and this is an expanding part of our profile. The School’s research and teaching covers a broad range of topics in mathematical sciences, across Applied Mathematics, History of Mathematics, Mathematics Education, Pure Mathematics, Statistics and Theoretical Physics.

Within the School there is a vibrant research environment, with about 50 academic members of staff together with postdoctoral researchers and PhD students. The staff include two LMS Whitehead Prize winners, an IoP Maxwell Medallist, an AMS Whiteman Prize winner, a RSS Bradford Hill Medallist, and one of the twenty-five most highly cited mathematicians/statisticians worldwide. In the 2014 Research Excellence Framework, 75% of our research outputs were rated as world leading or internationally excellent.

The Research Associate would join the complex analysis group which, in addition to Professors Stallard and Rippon, includes Dr Ian Short, three full-time PhD students and one part-time PhD student. The group has a weekly lunchtime meeting including an informal talk, usually given by a member of the group. There are also regular visitors giving talks in the weekly Mathematics seminar. The group has joined together with the groups at the University of Liverpool and Imperial College to form the LMS Scheme 3 group in holomorphic dynamics, holding regular joint research meetings.
The School provides a friendly and flexible working environment and is actively striving to achieve gender equality in terms of opportunity and success for all, both within the School and for our students. The School holds an Athena SWAN bronze award and is currently working towards a silver award. Further information about the School of Mathematics and Statistics is available at [http://www.mathematics.open.ac.uk/](http://www.mathematics.open.ac.uk/).

6. How to obtain more information about the role or application process

If you would like to discuss the particulars of this role before making an application please contact Dr Marc Pradas on 01908332566 or email: marc.pradas@open.ac.uk.

If you have any questions regarding the application process please contact Janie Barker on +44 (0)1908 653665 or email: STEM-Recruitment@open.ac.uk.

7. The application process and where to send completed applications

| Your application should contain: | Short Application Form  
| CV  
| Cover letter |
| Please ensure that your application reaches the University by: | Noon, 29 June 2018 |
| E-mail your application to: | STEM-Recruitment@open.ac.uk |
| Or post it to Name/Job title: | Janie Barker, Staffing Adviser |
| Department/Unit: | Deanery, Faculty of Science, Technology, Engineering & Mathematics |
| Address: | The Open University, Walton Hall, Milton Keynes, MK7 6AA |

8. Selection process and date of interview

| The interview panel will be chaired by: | Marc Pradas, Lecturer, School of Mathematics and Statistics |
| The other members of the interview panel will be: | TBC |
| The interviews will take place on: | TBC |
| The selection process for this post will include | Interview |
We will let you know as soon as possible after the closing date whether you have been shortlisted for interview. Further details on the selection process will also be sent to shortlisted candidates.

Applications received after the closing date will not be accepted.