



## THE POST

<b>College:</b>	<b>College of Engineering, Mathematics and Physical Sciences</b>
<b>Post:</b>	<b>Postdoctoral Research Fellow</b>
<b>Reference No:</b>	<b>P64020</b>
<b>Grade:</b>	<b>F</b>
<b>Reporting To:</b>	<b>Dr. Prakash Kripakaran</b>

### **Job Description**

#### **Main purpose of the job:**

*The role involves working with Devon County Council to improve their procedures for managing debris and the risks it poses to bridges through analytical and field studies, and then disseminating findings to the wider bridge engineering community. The role will also require engagement with Highways England to update existing guidance documents on bridge scour according to research findings and field trials. The work undertaken will build on knowledge accumulated through an EPSRC-funded project on debris-induced scour at bridge structures. For further information on the EPSRC project, refer to <http://blogs.exeter.ac.uk/ramb>.*

#### **Main duties and accountabilities:**

1. To lead on the following with support from Devon County Council:
  - Undertaking detailed scour assessments for bridges susceptible to debris accumulation using hydraulic modelling and available results from numerical and laboratory investigations;
  - Investigating and devising suitable debris mitigation strategies for field trials at full-scale bridges;
  - Performing laboratory investigations on debris mitigation strategies through physical modelling in a flume;
  - Evaluating debris mitigation strategies through field trials on selected bridges;
  - Performing hydrodynamic assessments of full-scale masonry arch bridges under inundation;
  - Developing procedures for effectively managing debris and its risks based on findings;
  - Organising a workshop at the end of the project to disseminate findings from work.
2. To undertake research as appropriate to the field of study. The responsibilities may include all or some of the following:
  - Developing research objectives, projects and proposals;
  - Conducting individual or collaborative research projects;
  - Identifying sources of funding and contributing to the process of securing funds;
  - Extending, transforming and applying knowledge acquired from scholarship to research and appropriate external activities;
  - Writing or contributing to publications or disseminating research findings using media appropriate to the discipline;
  - Making presentations at conferences or exhibiting work in other appropriate events;
  - Assessing, interpreting and evaluating outcomes of research;
  - Developing new concepts and ideas to extend intellectual understanding;
  - Resolving problems of meeting research objectives and deadlines;
  - Developing ideas for generating income and promoting research area;
  - Developing ideas for application of research outcomes;

3. To contribute to teaching and learning programmes in the School and to supervise postgraduate research students.
4. To act as research team leader including:
  - Mentoring colleagues with less experience and advising on their professional development;
  - Coaching and supporting colleagues in developing their research techniques;
  - Supervising the work of others, for example in research teams or projects;
  - Developing productive working relationships with other members of staff;
  - Co-ordinating the work of colleagues to ensure equitable access to resources and facilities;
  - Dealing with standard problems and help colleagues to resolve their concerns about progress in research.
5. To routinely communicate complex and conceptual ideas to those with limited knowledge as well as to peers using high level skills and a range of media and to present the results of scientific research to sponsors and at conferences.
6. As determined by the nature of the project and at the direction of the PI, to plan, co-ordinate and implement research programme activity including:
  - Managing the use of research resources and ensuring that effective use is made of them;
  - Monitoring and reporting on the use of research budgets;
  - Helping to plan and implement commercial and consultancy activities;
  - Where appropriate, to plan and manage own consultancy assignments.

This job description summarises the main duties and accountabilities of the post and is not comprehensive: the post-holder may be required to undertake other duties of similar level and responsibility. Please visit the Human Resources website to view the Research Fellow role profiles.

### **Person Specification**

<b>Competency</b>	<b>Essential</b>	<b>Desirable</b>
Attainments/Qualifications	PhD in civil engineering or related discipline	Be a nationally recognised authority in the subject area. Industry experience in bridge management
Skills and Understanding	Possess sufficient specialist knowledge in the discipline to develop/follow research programmes and methodologies. Record of research output in high quality publications. Knowledge and understanding of hydraulics and sediment transport concepts.	Knowledge of current scour assessment methods in practice Understanding of bridge management procedures in the UK Understanding of computational fluid dynamics modelling
Prior Experience	Experience of managing research projects. Experience with analytical, numerical or experimental studies in hydraulics and/or scour.	Experience of undergraduate /postgraduate teaching and supervision. Experience conducting laboratory studies on physical modelling of erosion
Behavioural Characteristics	Excellent written and verbal communication skills. Able to communicate complex and conceptual ideas to a range of groups. Evidence of the ability to collaborate actively within the Institution and externally to complete research projects and advance thinking.	Able to identify sources of funding, generate income, obtain consultancy projects, or build relationships for future activities.

	Able to participate in and develop external networks. Able to balance the pressures of research, administrative demands and competing deadlines.	
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**Informal Enquiries**

Before submitting an application you may wish to discuss the post further by contacting Dr. Prakash Kripakaran, Senior Lecturer, telephone (01392726581) or email [p.kripakaran@exeter.ac.uk](mailto:p.kripakaran@exeter.ac.uk).

**Terms & Conditions**

Our Terms and Conditions of Employment can be viewed [here](#).

**Further Information**

Please see our [website](#) for further information on working at the University of Exeter.