



THE POST

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| College: | College of Engineering, Mathematics and Physical Sciences |
| Post: | Postdoctoral Research Associate |
| Reference No: | P64020 |
| Grade: | E |
| Reporting To: | Dr. Prakash Kripakaran |

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 including:
 - Writing up research work for publication;
 - Developing research objectives and proposals for own or joint research;
 - Making presentations at national and international conferences and similar events;
 - Dealing with problems which may affect the achievement of research objectives and deadlines;
 - Analysing and interpreting the results of own research and generating original ideas based on outcomes;
 - Using new research techniques and methods;
 - Using initiative and creativity to identify areas for research, developing new research methods and extending the research portfolio;
 - Using creativity to analyse and interpret research data and draw conclusions on the outcomes.
3. To contribute to teaching and to be involved in the assessment of student knowledge including assisting in the supervision of student projects and in the development of student research skills.
4. To work in collaboration with colleagues as appropriate to the field of study including:

- Contributing to collaborative decision making within the research group;
 - Contributing to the production of collaborative research reports and publications.
 - Preparing papers and presenting information on research progress and outcomes to bodies supervising research, e.g. steering groups.
5. To communicate complex information, orally, in writing and electronically.
 6. To prepare proposals and applications to external bodies, e.g. for funding and contractual purposes
 7. To contribute to the planning of research projects.
 8. To use research resources, laboratories and workshops as appropriate and to take responsibility for reducing hazards and for the health and safety of others. Where appropriate, will also be responsible for conducting risk assessments.
 9. To monitor research budgets as appropriate.
 10. To engage in continuous professional development and to be responsible for continually updating knowledge and understanding in field of study or specialism and for developing skills.

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

| Competency | Essential | Desirable |
|-----------------------------|---|---|
| Attainments/Qualifications | PhD or equivalent qualification/experience in bridge scour or related field. | |
| Skills and Understanding | Sufficient knowledge in the discipline and of research methods and techniques to work within established research programmes. Knowledge and understanding of hydraulics and sediment transport concepts. | Evidence of research activity and published research. Knowledge of current scour assessment methods in practice. Understanding of bridge management procedures in the UK. |
| Prior Experience | Understanding of health and safety legislation Experience with analytical, numerical or experimental studies in hydraulics and/or scour. | Experience of undergraduate teaching Experience conducting laboratory studies on physical modelling of erosion |
| Behavioural Characteristics | Excellent written and verbal communication skills. Able to communicate material of a specialist or highly technical nature. Able to manage research and administrative activities and to balance the competing pressures of research and administrative demands and deadlines. Able to liaise with colleagues and students. Able to build contacts and participate in internal and external networks for the exchange of information and collaboration. Actively participate as a member of a research team Engage in continuous professional | Able to identify sources of funding |

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| | development. Understand equal opportunity issues as they may impact on areas of research content Where appropriate to the role, willingness to undergo training in order to conduct risk assessments | |
| Circumstances | Willing to work flexibly to achieve project demands | |

Informal Enquiries

Before submitting an application you may wish to discuss the post further by contacting Dr. Prakash Kripakaran, S, telephone (01392 726581) or email 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.