

# Research Associate in Geotechnical Engineering

Department	Civil & Environmental Engineering ( <a href="http://www.strath.ac.uk/civeng/">www.strath.ac.uk/civeng/</a> )		
Faculty	Faculty of Engineering ( <a href="http://www.strath.ac.uk/engineering/">www.strath.ac.uk/engineering/</a> )		
Staff Category	Research	Reference No	447441
Reports To	Dr Grainne El Mountassir	Grade:	7
Salary Range:	£33,309 – £40,927	Contract Type:	Fixed term (44 months)
FTE	1 (35 hours/week)	Closing Date	22/05/2022

## Job Advert

The Department of Civil and Environmental Engineering seeks to recruit a talented researcher to a 44 month Research Associate position to work on nature-based solutions to mitigate landslides. This position is funded by the UKRI Future Leaders Fellowship project: 'Soil-mycelia systems for slope stabilisation' led by Dr Grainne El Mountassir.

The aim of the project is to develop novel low-cost, low-carbon fungal-based biogeotechnologies for landslide mitigation. The project will focus on characterising the hydraulic and mechanical behaviour of fungal treated soils over time and in response to varying environmental conditions (e.g. temperature and wetting-drying cycles). Experiments will be conducted at bench scale (cms) and at large-scale (several metres) in the laboratory. Experimental data gathered will be used to inform numerical models to investigate the influence of fungal treatment on slope stability for real case studies.

The successful researcher will be based in the Department of Civil and Environmental Engineering at the University of Strathclyde in Glasgow, UK and will have the opportunity to undertake an industrial secondment with BAM Ritchies. The Department has over £4.5 million of current research projects in ground and subsurface engineering and the researcher will join an enthusiastic and friendly team of postgraduate and postdoctoral researchers that research a range of bio- and bio-chemical ground improvement and grouting technologies.

The University is seeking an excellent and enthusiastic candidate that can contribute to laboratory-based research on the hydraulic and mechanical testing of soils (e.g. oedometer, shear box, triaxial, permeability, water retention behaviour, suction control/monitoring methods) and investigation of soil microstructure (e.g. Scanning Electron Microscope, X-ray microtomography, Optical microscopy). The project will also work towards developing a constitutive model for the hydro-mechanical behaviour of fungal treated soils and numerical modelling will be conducted to assess the influence of fungal treatment on slope stability. It is not necessary that you have expertise in all of these areas as training will be given, but you should have experience in at least some of these areas. To be considered for the role, you should have a relevant undergraduate degree (e.g. Civil Engineering) and have successfully completed a PhD in a relevant field (e.g. geotechnical engineering, ecological engineering). You should be creative, with the ability to apply initiative and problem solve and have excellent communication skills.

## Job Description

### Brief Outline of Job:

You will play an important role in supporting delivery of the UKRI Future Leaders Fellowship project: 'Soil-mycelia systems for slope stabilisation'. You will undertake research in the geotechnical laboratories in the Department of Civil & Environmental Engineering at the University of Strathclyde. You will conduct an experimental campaign to characterise the hydraulic and

mechanical behaviour of fungal treated soils over time and in response to varying environmental conditions. You will investigate the micro-mechanisms responsible for the modification of soil behaviour. You will use the experimental data collected to inform numerical models to evaluate the influence of fungal treatment on slope stability.

**Main Activities/Responsibilities:**

1.	Characterise the microstructure and hydraulic and mechanical behaviour of fungal treated soils using a range of different techniques.
2.	Conduct individual and/or collaborative research, including determining appropriate experimental methods and contribute to the development of new experimental methods.
3.	Conduct slope stability analyses using numerical methods.
4.	As part of the research group on fungal biogeotechnologies, play a major role in the delivery of the FLF project: 'Soil-mycelia systems for slope stabilisation', with guidance from senior colleagues as required.
5.	Write up research work for publication, individually or in collaboration with colleagues, and disseminate results at project meetings, via peer reviewed journal publications and via presentation at international & national conferences and workshops.
6.	Identify sources of funding and contribute to the securing of funds for research, including drafting grant proposals and planning for future proposals for follow-on funding.
7.	Join external networks to share information and ideas, inform the development of research objectives and to identify potential sources of funding.
8.	Collaborate with colleagues on the development of knowledge exchange activities by, for example, participating in initiatives which establish research links with industry.
9.	Contribute to supervision of postgraduate students within the research group.
10.	Liase with colleagues and students in the research group and report to external project partners (both from academia and industry)
11.	Plan and manage own workload, with guidance from colleagues as required.
12.	Contribute to teaching in the department as required by, for example, running tutorials and supervising practical work.
13.	Continually update knowledge and understanding in the field to inform research activity.

**Person Specification**

**Educational and/or Professional Qualifications**

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E1 Good honours undergraduate degree or Masters Degree in a relevant science or engineering discipline (e.g. Civil Engineering)

E2 PhD (or equivalent professional experience) in an appropriate discipline (e.g. Geotechnical Engineering, Ecological Engineering).

**Experience**

E3 Experience of relevant laboratory-based research (e.g. experience in soils testing, imaging techniques)

D1 Experience in constitutive and/or numerical modelling of geomaterials

E4 Sufficient breadth or depth of knowledge in the relevant discipline/s to contribute to research programmes and to the development of research activities.

D2 Experience of multi-disciplinary research

D3 Experience of student supervision

**Job Related Skills and Achievements**

E5 Developing ability to conduct individual research work and to disseminate results

E6 Ability to use initiative, creativity and judgment in applying and developing research methods

E7 Ability to plan and organise own workload effectively

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D4 Ability to write high quality journal papers

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D5 Developing ability to prepare research proposals

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### Personal Attributes

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E8 Ability to work both independently and within a multi-disciplinary team.

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E9 Excellent interpersonal and communication skills, with the ability to listen, engage and persuade and to present complex information in an accessible way to a range of audiences

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## Application Procedure

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Applicants are required to complete an application form including the name of three referees who will be contacted before interview without further permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.

## Other Information

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Further information on the application process and working at Strathclyde can be found on our website (<http://www.strath.ac.uk/hr/workforus>).

Informal enquiries about the post can be directed to Dr Grainne El Mountassir, Senior Lecturer in Geotechnical Engineering, ([grainne.elmountassir@strath.ac.uk](mailto:grainne.elmountassir@strath.ac.uk)).

### Conditions of Employment

Conditions of employment relating to the Research staff category can be found at: [Conditions of Employment](#).

### Rewards and Benefits

Our staff have access to a wide range of outstanding benefits that include financial rewards, family friendly and wellbeing benefits and career development opportunities, details of which can be found [here](#).

### Probation

Where applicable, the successful applicant will be required to serve a 9 month probationary period.

### Pension

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from [Payroll and Pensions](#).

### Relocation

Where applicable, the University offers a relocation package to support new employees who meet the eligibility criteria. The relocation package is offered as a contribution towards costs incurred, and is designed to be flexible, allowing staff to use the financial support available in the way that will be most helpful to them. Further details are outlined in the Relocation Policy.

### Interviews

Formal interviews for this post will be held on (to be confirmed).

### Equality and Diversity

We value diversity and welcome applications from all sections of the community.

The University currently holds a Bronze Athena SWAN award, recognising our commitment to advancing gender equality in academia across all academic disciplines and professional and support functions.

### University Values

The University's Values capture what we're all about: who we are, what we believe in and what we stand for. [Our Values](#) have been derived from how we act and how we expect to be treated as part of Strathclyde.

