

## RSO PhD bursary call: Guidance for submission and assessment criteria

The Nuclear Waste Services Research Support Office (RSO) is requesting applications to the 2023 PhD bursary call. The scheme will provide funding to UK academic institutions for PhD projects. The aim of the NWS RSO PhD bursary call is to develop a portfolio of PhD projects focused on key NWS research priorities. This scheme will train the next generation of geological disposal scientists, engineers, social scientists and other researchers, and expand all aspects of the geological disposal academic research community throughout the UK.

The specific aims of the programme are to:

- Develop key skills required for NWS's research mission over the coming decades, and to help deliver the next generation of geological disposal scientists, engineers and social scientists
- Develop fundamental understanding of technologies and processes related to the geological disposal of radioactive waste, including the societal implications of hosting a GDF
- Encourage collaboration and communication between NWS and the academic community

The NWS RSO PhD studentship scheme runs annually with the expectation that approximately 8-10 new projects may be supported each year. Students funded by NWS through the RSO have access to a growing geological disposal research community, training, and networking opportunities. The maximum project proposal total cost to NWS should not exceed £145,000. Projects that can offer added value will be viewed favourably, for example by identifying co-funding from universities or third parties (either anticipated or confirmed) and/or in-kind contributions. Universities and research groups that have not previously received funding from NWS are particularly encouraged to apply.

### Call structure

Request for proposal sent on:	27/09/2022
Clarifications period closes on:	17/10/2022
Request for proposal closes on:	21/11/2022

The contractual arrangements for the PhD studentships will be administered by NWS. A copy of the NWS PhD contract can be found on the RSO website. All investigators/Universities submitting a proposal must confirm that they will accept the NWS terms and conditions outlined in the contract if they are awarded funding. If you have any clarification questions (including commercial, technical, requests for flexibility in the deadline and regarding the contract) they should be sent to the RSO via [rso-gdf@manchester.ac.uk](mailto:rso-gdf@manchester.ac.uk) before the **clarification period** closes on 17<sup>th</sup> October 2022.

Any clarification questions or proposed changes to the scope of the project and/or grant agreement terms will be addressed by NWS and will only be considered during the Clarification period stated above and will not be accepted after proposal submission. All clarification questions must come through the RSO. Please do not approach NWS staff directly. Questions and answers will be posted openly on the RSO website after the clarification period has closed so that all applicants have access to the same information. Please consider this when asking clarification questions to the RSO.

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Proposals will be accepted until 12:00 on 21/11/2022 as Word documents and supporting materials emailed to the RSO inbox: rso-gdf@manchester.ac.uk. Applications will be assessed by NWS.

### **NWS RSO PhD students**

Students will become part of the 2023 cohort of NWS RSO PhD students. They will have access to additional training and networking opportunities and be asked to present their research at the annual RSO conference. Proposals should factor in attendance at RSO events, and at bi-annual meetings with NWS and with other NWS-sponsored PhD students working in similar fields. These events will facilitate knowledge exchange between the PhD students and NWS, and build up a long-term support network between the students.

### **PhD research projects**

Applications are welcome to any of the PhD research projects listed below, or to the open topic area. Full briefs for the PhD research projects can be found in the supporting documentation.

1. Welding and inspection technologies for the closure of high integrity disposal containers
2. Investigating potential impacts of CCGP (Cold Climate, Glaciation and Permafrost) processes on a Geological Disposal Facility
3. Evaluating the Transformative Potential of Major Public Infrastructure Projects
4. Techniques of social mapping for the shaping of environmental concerns
5. Investigating the impacts of saline groundwater on hydro-mechanical behaviour of bentonite
6. Gas migration through GDF interfaces
7. Developing a framework to estimate chemical toxicity to wildlife in the context of geological disposal of higher activity radioactive waste
8. Investigating diffusive transport in heterogeneous UK mudrocks
9. Evaluation of effect of Excavation Disturbed Zone (EDZ) and its evolution on properties governing groundwater and gas movement in clay and mudstone rocks
10. Behaviour of Reactive Metals under Geological Disposal Facility Conditions
11. The development of cementitious backfills for high heat generating waste
12. Can the co-mobility of actinides and neutron poisons be better understood to support criticality safety?
13. Understanding the impact of groundwater salinity on radionuclide containment in a deep geological disposal facility

### **Open topic**

The open topic category is available for research projects related to the geological disposal of radioactive waste that are not associated with any of the other topic areas and is a way for the academic community to propose PhD research ideas to NWS. This would include any research that supports the NWS science and technology plan as well as new and innovative areas with the potential to bring understanding and confidence to the GDF programme, including in the Applied Social Sciences discipline.

When developing a proposal please ensure you explain how the project brings value to the GDF programme.

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**Costings**

Up to a maximum of £145,000 is available per project. Whilst a maximum grant of £145k is available, proposals supported by co-funding will receive a more favourable score. Proposals from universities new to the RSO and those requesting less than the maximum funding available will be prioritised in cases where the best proposals to a project brief receive the same technical score.

*Student Stipend* - Student Stipend rates should be costed at UKRI rates at least. Stipend enhancements can be included to help attract the top graduates.

*Fees* - For UK students these should be costed at home rates. If you wish to recruit a non-UK student, please provide details on how the international fees will be covered.

*Travel and Subsistence* - Costs should be itemised to the nearest £1k and could include, for example, fieldwork, site visits, conferences, and travel to meetings with NWS.

*Consumables* - Costs should be itemised to the nearest £1k.

*Other* - Any additional costs required for fulfilment of the PhD project should be included here. Costs should be itemised to the nearest £1k.

Please refer to the grant agreement template for a list of excluded costs.

**Evaluation**

**The proposal will be assessed based on the answers to the following:**

**1) Confirm that the PhD project would start October 2023 and complete in 4 years**

Applicants are requested to confirm the project will be able to start in October 2023 and be completed within 4 years. If you are unable to recruit a student for October 2023, typically the funding may be carried over for 1 year, subject to agreement and any co-funding being maintained.

**PASS/FAIL**

**2) Acceptance of the attached terms and conditions of the bursary is mandatory:**

- Contractual arrangements for the grant are between the host University and RWM Ltd trading as Nuclear Waste Services. Contractual documents therefore refer to RWM and not NWS.
- Acceptance of the attached RWM terms and conditions is mandatory. A completed grant agreement is not needed with the application, but will be required if funding is awarded.
- If the grant agreement is not signed on award, then funding will not be issued.
- If after the grant award the grant agreement is not signed within 30 days, then NWS reserves the right to withdraw the award of the grant.

<b>PASS/FAIL</b>	See "NWS grant agreement template PhD 2023"
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## 3) Evaluation criteria:

<b>Scoring criteria</b>	<b>Score</b>	<b>Weighting (out of 100%)</b>	<b>Description and guidance notes</b>
<p><b>Alignment to brief and technical understanding</b> If applying to a specific project, please provide a clear proposal demonstrating alignment to the brief, or in the case of fulfilment of partial scope, please outline clearly the aspects of the brief to be fulfilled. If you are applying to the open call, please clearly identify where the research aligns with the NWS science and technology plan.</p>	/4	30%	<p>Responses should include:</p> <ul style="list-style-type: none"> <li>- A demonstrable understanding of the challenge area and complexities within that, referring to the research brief;</li> <li>- A demonstrable understanding of the technical and research background of the challenge area</li> </ul>
<p><b>Project management</b> Please define the necessary timescales, including a project work plan and/or Gantt chart. If experimental work will be undertaken, a clear strategy for delivering, analysing and synthesising appropriate data should be detailed.</p>	/4	20%	<ul style="list-style-type: none"> <li>- A project plan / Gantt chart showing key phases of work, milestones and deliverables including completing within required period of time;</li> <li>- Clearly define any input / time / resources that would be required from NWS, excluding industrial supervision, to support or enable the project, such as security clearance, sample access or site visit to a licensed site;</li> <li>- Identify any major risks to the research and mitigation that can be considered against these risks, including any risks of the research to be extended past agreed period of time;</li> <li>- Identify any use of external facilities, such as NNUF or other national / international infrastructure and demonstrate that proposed activity has been discussed in advance with the relevant facility owners and is feasible within the bounds of the proposal.</li> </ul>
<p><b>Supervisory Team</b> Please show how the supervisory team has the required expertise in the relevant areas.</p>	/4	10%	<p>Expertise required in an appropriate field for the proposed research, evidenced by e.g. journal papers, reports. This section will be assessed</p>

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			in relation to career stage and experience. The inclusion of early career researchers, and / or researchers new to radioactive waste disposal, in the supervisory team is encouraged.
<b>Training</b> Skills and capability generation.	/4	10%	Identify the researcher skills that will be developed by the proposed project and why they are relevant to the future of NWS. Show how skills will be developed within the wider supervisory team.
<b>Budget</b> Please provide a costed proposal, identifying additional 'in-kind' contributions that you can bring to the PhD project.	/4	30%	Identify cost breakdown between Tuition Fees, Stipend and Research & Training Grant, providing details of the estimates. Provide detailed information on any secured or applied for sources of co-funding or in-kind contributions that enhance the PhD. Eligible and ineligible costs are outlined in clauses 8.2 and 8.3 of the grant agreement. Any costs that would be reasonably expected for a PhD project and not specified as ineligible in the grant agreement would be eligible.

**Scoring criteria:**

- 0= No response or response does not meet any requirements
- 1= Marginal response with significant drawbacks or omissions
- 2= Acceptable response, meeting most criteria with only minor drawbacks or omissions
- 3= Good response which meets all requirements
- 4= Excellent response which meets and exceeds requirements