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**ExaGEO NERC Doctoral Landscape Award in Exascale Computing for Earth, Environmental, and Sustainability Solutions**

**ExaGEO Application Statement 2025/26 Entry**

Please submit a copy of this completed form as a PDF document via the University of Glasgow online application system, specifically where it says, “Please provide your research proposal”.

This form will be reviewed independently from your **Application CV** by the ExaGEO Review Panel. To allow for anonymous reviewing and to reduce unconscious bias, please do not include any personally identifiable information, such as your name or names of institutions where you have trained or worked, as well as details of supervisors. This information is provided elsewhere in your application and will not be reviewed by the ExaGEO Review Panel.

It is important that you follow the word limit noted for all five questions, as any text beyond the stated word limit will be removed before assessment by the ExaGEO Review Panel.

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| **Application Number**This is the 8-digit number which is generated when you start an application via the University of Glasgow online application system | (type here) |

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| **Question 1. What is exciting about the prospect of undertaking a PhD?**With this question, we wish to understand your motivations and how these will drive your research. You may wish to demonstrate your willingness to engage fully in your chosen area and contribute to conversations and advances in that field. The response to this question provides us with valuable insights into your motivations, aspirations, overall readiness for doctoral-level research, and communication skills. Your answer will be assessed in terms of purpose, long-term goals, enthusiasm, motivation, and communication skills.Your answer should be between 150 -200 words. |
| (type answer here) |
| **Q1 Score**  | (for office use only) |

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| **Question 2. Describe a challenge you have faced and tell us how you overcame it.**A PhD is paved with challenges, obstacles, and problems to solve. With this question, we would like to assess your problem-solving abilities, resilience, and capacity for learning from challenges. You may wish to demonstrate your abilities to adjust approaches and responses when faced with change or setbacks, your willingness to admit to errors and seek appropriate support or demonstrate the courage to engage with complex ideas and viewpoints.Your answer will be assessed in terms of identification of challenge(s), problem-solving skills, resilience, learning and growth, and communication skills.Your answer should be between 200 and 250 words. |
| (type answer here) |
| **Q2 Score**  | (for office use only) |

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| **Question 3. Discuss your favourite scientific topic, your own engagement and experience with it, and what you think are the next big questions to investigate.**With this question we invite you to demonstrate your excitement and interest in a particular scientific area, your willingness to think deeply about complex ideas and theories in the context of that topic, and your preparedness to deepen your investigation to shed new light on that research field.Your answer will be assessed in terms of relevance and quality of the response, scientific understanding, enthusiasm, and communication skills.Your answer should be between 200 and 250 words. |
| (type answer here) |
| **Q3 Score** | (for office use only) |

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| **Question 4. How do you see your participation in a programme such as ExaGEO helping to fill your skills gaps? What opportunities do you see for collaboration with other students in the programme?**This question prompts you to reflect on the unique aspects of ExaGEO and how those align with your academic and career objectives. It also encourages you to consider the specialised training, resources, and opportunities offered by the programme.Your answer will be assessed in terms of your level of understanding of ExaGEO’s goals, alignment of the programme with personal and professional development values, alignment with specific features of ExaGEO, and overcoming barriers to application and communication skills.Your answer should be between 150 and 200 words. |
| (type answer here) |
| **Q4 Score** | (for office use only) |

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| **Question 5. Exercise: Analysing the Penguin Dataset**The [dataset provided](https://www.exageo.org/wp-content/uploads/2024/12/ExaGEO-Application-Exercise.zip) contains measurements from three species of penguins: Adélie, Gentoo, and Chinstrap. For each penguin, the following features were recorded: culmen length, culmen depth, flipper length, body mass, and sex. The data also includes the island where each penguin was observed.Please note that applicants invited for an interview might be asked, during their interview, how they would construct a program to analyse the data in this exercise in alternative ways. **Instructions:**1. **Visualising Culmen Length Across Species**

Create a figure that displays the mean and variance of the culmen length (the length of the penguin’s bill) for each species (Adélie, Gentoo, Chinstrap). Use appropriate visual tools (e.g., bar plots with error bars or box plots) to clearly represent the data for each species.1. **Correlation Analysis**

Produce a second figure (a single figure or composite of multiple graphs) that explores the relationships between culmen length and the other numerical features (culmen depth, flipper length, body mass) across the species. Your figure should help identify any significant correlations or patterns between these features.1. **Figure Placement and Annotations**

Place both figures in the box below with descriptive captions. In <50 words, describe your methods for creating the figures, including the tools or libraries used (e.g., Microsoft Excel (or open-source equivalent), Python, R, MATLAB, etc., and any large language models used such as ChatGPT, Claude etc. In another <100 words, briefly interpret the results of your visualisations. |
| (type answers here) |
| **Q5 Scores** | (for office use only) |