The Geological Society

Royal Astronomical Society

Graeme Dey MSP
Minister for Higher and Further Education; and Minister for Veterans

Copies to: Professor George Boyne FAcSS FRSE, Professor Sir Peter William Mathieson FRCP FMedSci FRSE, Professor Francesca Osowska OBE FRSE

9 May 2025

Dear Minister,

Closure of geophysics degrees in UK universities and the strategic importance of geophysics expertise

We are writing to you as the presidents of two of the learned societies that represent geophysicists in the UK, the Royal Astronomical Society, and the Geological Society of London, to urge you to take action to prevent any further closure of geophysics and geophysics-related degrees at Scottish universities. The survival of this subject is central to our national interest. We are also in close contact with the Institute of Physics, who strongly endorse our concerns.

As you know, financial difficulties experienced at a number of UK universities, including those in Scotland, have become very apparent in recent years, with one consequence being the closure of courses with low numbers of students and redundancies of staff teaching on those programmes[1,2].

Undergraduate geophysics degrees are particularly vulnerable due to the relatively low number of students applying for these programmes. For example, in 2022 UCAS data[3] indicated that only 120 places were accepted on these courses UK-wide, with only 65 of those from people domiciled in the UK. We believe that

[1] Job losses across UK higher education continue to rise, Research Professional, 1 April 2025 https://www.researchprofessionalnews.com/rr-news-uk-universities-2025-4-job-losses-across-uk-higher-education-continue-to-rise/

[2]Politics Home: Universities Watchdog Braces For Cold Spots As Courses Get Cut to Save Money https://www.politicshome.com/news/article/universities-watchdog-looking-at-cold-spots-as-courses-face-the-axe

[3] UCAS, data purchased by the RAS, 2022

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this problem of student awareness and demand can be addressed, and that it is of strategic importance for the UK, including Scotland, to maintain expertise in this vital field.

Of the approximately ten geophysics degrees in the UK in 2020, the simplistic approach of closing those with student numbers below a threshold has resulted in courses closing at an alarming rate, including the BSc honours programme in Aberdeen. Those currently vulnerable now include the BSc programme in Edinburgh and the MSc programme in Aberdeen.

The low number of applications from school leavers appears to have a variety of explanations, and can be found in previous reports from the British Geophysical Association spanning decades[4]. In contrast, the role of geophysicist is recognised as one of vital importance to the economy as a whole, and is included in the UK government's skilled worker visa list[5], covering job opportunities in industry where there is an insufficient supply of graduates. The data demonstrating that insufficiency are stark: there are around 2.5 times as many job openings in geophysics each year as there are graduating students[6].

Geophysics is a discipline of enormous importance for Scotland. Geophysicists have and will continue to play a critical role in securing energy security, delivery of Net Zero targets for CO_2 emissions, and for discovery and exploitation of new energy and mineral resources. For example, the Natural Environment Research Council report on skills priorities from as far back as 2012 included a requirement for geophysics in around half of the identified key challenges[7].

The dearth of geophysics graduates will inevitably mean a continued reliance on recruiting them from overseas to meet these challenges. This is also a challenge to

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[4] Geophysics Education in the UK (2006) - https://geophysics.org.uk/outreach/khan-report/

[5] Skilled worker visa list: https://www.gov.uk/government/publications/skilled-worker-visa-eligible-occupations/skilled-worker-visa-eligible-occupations-and-codes

[6] Jenkins, J., Gillighan, A. Bie, L., 2024. Who wants to be a geophysicist? Astronomy & Geophysics, Volume 65, Issue 5, pp. 5.28–5.30. https://academic.oup.com/astrogeo/article/65/5/5.28/7794768

[7] 2012 Review of Skills Needs in the Environment Sector https://webarchive.nationalarchives.gov.uk/ukgwa/20220214165229/https://nerc.ukri.org/skills/postgrad/policy/skillsreview/2012/

our national resilience, and will undermine the ambitions for a long term industrial strategy to boost economic growth.

At a global level the World Economic Forum Global Risks Register sets out that four of the top sixteen short term risks, and all of the top four long term risks, are environmental in nature[8]. Geophysics is required to address and mitigate all of them.

The likely redundancy of academic staff resulting from the closure of geophysics courses will lead to a major loss of concomitant research expertise in the university sector. Geophysicists in higher education work closely with their peers in commercial industry and other areas of the public sector, with high profile case studies in the 2021 Research Excellence Framework covering examples including managing the risk to society from natural and induced earthquakes, collaboration with the energy sector, and on climate change mitigation[9]. It is also a discipline with high profile examples of 'soft power', such as the work between UK geophysicists and their counterparts in North Korea on Mount Paektu[10].

In the light of the overwhelming evidence of its importance, we urge the Scottish Government, relevant agencies, and higher education providers to do everything possible to preserve the teaching of geophysics, a discipline now facing an existential crisis. We specifically call for an immediate halt to the planned closure of courses and for the retention of associated academic staff within the Scottish university sector.

Our partners at the IOP alerted us to precedents for such action, in the 1990s and 2000s, when UK universities closed around a third of undergraduate physics courses[11]. In response funding bodies introduced two measures.

First, the Strategically Important and Vulnerable Subjects (SIVS) programme, which promoted student demand for these courses, secured the supply of teaching and research provision, and promoted the flow of graduates into employment[12]. These

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[8] Global Risks Report 2025
https://reports.weforum.org/docs/WEF_Global_Risks_Report_2025.pdf
[9] https://results2021.ref.ac.uk/impact?page=1#34b5b08a-bcda-4d0f-8448-b235183d9f79
[10] The Mount Paektu Research Centre https://themprc.org/
[11] https://www.cam.ac.uk/news/physics-flourishing-at-cambridge
[12] Strategically Important and Vulnerable Subjects: The HEFCE advisory group's 2010-11 report https://dera.ioe.ac.uk/id/eprint/10338/1/11_24.pdf

measures threw a lifeline to the sector when it was greatly needed and helped to stabilise STEM provision in the UK HE sector.

Alongside this, the Joint Infrastructure Fund (JIF – later the Science Research Investment Fund or SRIF), was established in June 1999 to assist science and engineering departments with the building of new and the refurbishment of existing laboratory or research-related space. It began as a three-year programme with a minimum bid level of £750,000 but went on to run for several rounds[13].

Given the scale and urgency of the crisis, similarly powerful actions need to be taken by the Scottish Government today, before the irrevocable loss of a cornerstone of STEM education and training.

We would of course be delighted to meet you to discuss our concerns in more detail.

Yours sincerely,

Professor Michael Lockwood
President, Royal Astronomical Society

Professor Jon Gluyas
President, Geological Society of London

[13] https://www.admin.cam.ac.uk/reporter/1998-99/weekly/5780/3.html