



UNIVERSITY OF EDINBURGH JOURNAL

Celebrating our Academic and Cultural Legacy



ISSUE 1, 2025



Established in 1925, the *University of Edinburgh Journal* is an editorially independent, scholarly, and multi-disciplinary journal with two main aims. First, to publish academic and creative writing by students, staff, alumni, and friends of the University of Edinburgh. Second, to continue to build a detailed archive on the history and heritage of the University and of its people. Topics covered relate to any relevant aspect of University life – past, present, and future – and are of interest to diverse specialist branches of the academic community, at home and abroad.

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Front Cover: The cover artwork of this issue of the *University of Edinburgh Journal* shows a view of Arthur's Seat from the south. Photography by Prof. Steve Hillier.

University of Edinburgh Journal

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The *University of Edinburgh Journal* is published twice a year and is sent to all members of the University of Edinburgh Graduates' Association, and subscribers to the *Journal*. We are grateful for the continued support and generosity of our members and subscribers, which allows us to continue to publish the *Journal*, and to hold occasional events in Edinburgh.

For more information on becoming a member of UEGA, to subscribe to the *Journal*, or to submit material for consideration in a future issue, please write to:

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Discover, the National Library of Scotland Magazine
EDUCT News, the Edinburgh University Club of Toronto Newsletter

From the Interim Editor

Welcome to this centennial issue of the *University of Edinburgh Journal*. Published annually since 1925, the *Journal* enters a second century as an editorially independent, scholarly periodical that encourages cross-disciplinary writing by students, staff, alumni, and friends of the University.

And we begin by gratefully acknowledging the kind and encouraging words of ongoing support for the *Journal*, received from our Patron, HRH The Princess Royal. You can see a copy of the letter in full on page 7.

The *Journal* has always been a work in progress. The editorial notes to the first issue, which appeared during the Autumn term of 1925, inform us that the original purpose of the *Journal* was '[...] to find a means through the medium of the printed word, of keeping the graduates and former students of the University in closer touch with their Alma Mater than has hitherto been possible [...]' It was also hoped that '[...] individual members of the University will keep us informed of interesting events—personal, professional, or academic—in whatever part of the world their lot may be cast [...]'

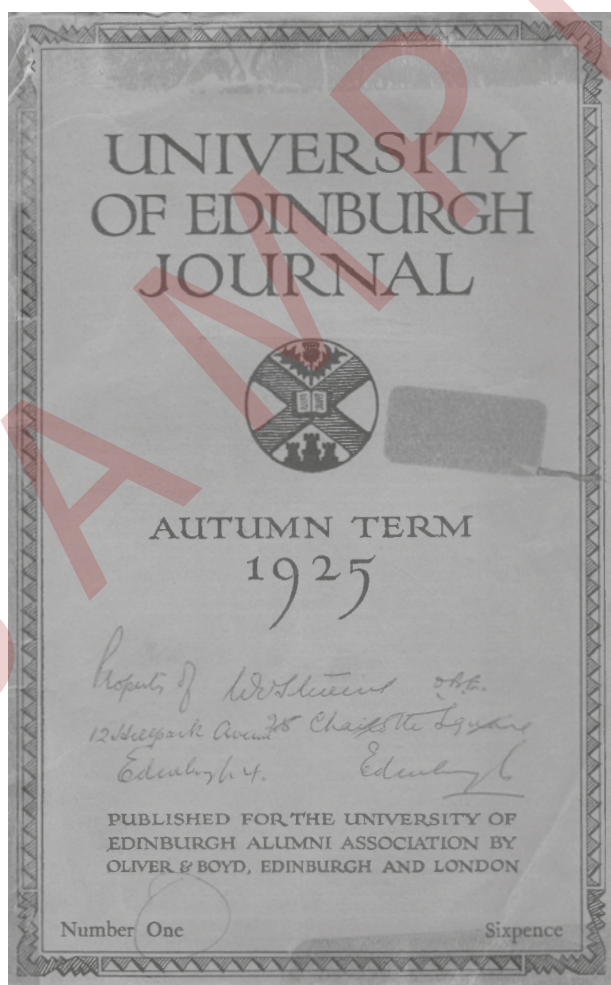
These ambitions remain, enabled by the academic and cultural resource that the *Journal's* century-long existence provides in the form of an extensive archive of the history and heritage of the University of Edinburgh and of its people.

This jubilee issue of the *Journal* is no exception, and we are delighted to offer a variety of articles covering subjects as diverse as volcanic eruptions, machine learning, and engaging students in political debate.

Your input is vital. To support ongoing operation of the *Journal* into a second century, the UEGA executive has agreed to establish an Editorial Panel, which will advise on editorial affairs and provide ambassadors for the *Journal*: students, staff, and associates are all potential Panel members.

We are particularly keen to build a cross-disciplinary research culture that is based on the creation and curation of the *Journal* archive, and its promotion as a unique Edinburgh resource. If you are in any way attracted by this proposition or feel you have relevant feedback to offer, please contact the Interim Editor.

Prof. Stephen G. Hillier
Interim Editor



A copy of the front cover of the first issue of the Journal, published in 1925.

Machine Intelligence is Different

Legacy Extract by Donald Michie
Reflective Article by Michael Rovatsos

Editorial Note: Artificial Intelligence (AI) is widely seen as a major Edinburgh research strength, dating back to 1963 with the creation of the Experimental Programming Unit of the Department of Surgical Science, led by Professor Donald Michie. Over 60 years later, Edinburgh is still a global player in AI research, and the relentless flood of AI research outputs continually impacts student and staff activity (www.ed.ac.uk/ai). Considering the universal implications of AI research, it is of interest that the *University of Edinburgh Journal* contains an intriguing article by Michie in the 1964 edition, asking 'What is "Machine Intelligence"?' We invited one of our current Professors of Artificial Intelligence, Michael Rovatsos, to read the Michie paper and provide the answer, from a 2025 perspective. But first, we invite our readers to enjoy a brief extract from Michie's article. Readers can view the full version on our website at <https://www.uega.co.uk/michie>

Legacy Extract from 'Machine Intelligence' by Donald Michie, first published in the *University of Edinburgh Journal*, 21(3), 1964, pp. 210-217.

[...] The most important learning process of all is still untouched; no current program can generate test features of its own. The effectiveness of

all of them is forever restricted by the ingenuity or arbitrariness of their programmers. (Selfridge and Neisser, 1960).

Not so long ago one might hear the question debated in scientific circles as to whether a machine could be designed (or, what comes logically to the same thing, whether a computer could be programmed) so as to ‘think’. Today, however, we hear less of this, although interest in the question seems still to be alive among our colleagues in Faculties other than Science, such as Divinity or Arts. The scientists themselves have meanwhile become too deeply engrossed in isolating and defining the properties of thought-processes, and engineering their mechanisation, to be able to spend much time ruminating on the possibility or otherwise of what they are trying to do.

Turing’s Criterion

Yet it is of some interest to turn back a decade to a period when this philosophical question was a live one. In a famous definition, a great pioneer of the theory of digital computing, A. M. Turing (1953), posed the question ‘Could one make a machine which would answer questions put to it, in such a way that it would not be possible to distinguish its answers from those of a man?’ He added ‘[...] the phrase “could one make a machine [...]” might equally well be replaced by “could one program an electronic computer [...]” Clearly the electronic computer so programmed would itself constitute a machine.’ Turing used to emphasise that if one is going to use such words as ‘think’ in a purely objective fashion one should be prepared to apply to a machine the same criterion as one applies if one wishes to discover whether or not a human is capable of thinking.

Turing added the further question: ‘Could one make a machine to have feelings as you and I have?’ and supplied the answer ‘I shall never know, any more than I shall ever be quite certain that *you* feel as I do.’

[...] It is clear that an unlimited amount of harmless amusement can be got by thinking up strategies for particular problems, and testing out their performance by means of appropriate computer programs. If no more than this were involved, then such an activity would be quite pointless, and would contribute little or nothing towards the automation of intelligent behaviour.

The goal in artificial intelligence work is *not* the automation of this or that strategy for solving this or that problem, however gratifying an exercise this may provide for human ingenuity. It is the automation of the ingenuity itself. Devising or mechanising individual strategies must be seen simply as a means of feeling one’s way along a path, at the other end of which lie computer programs capable not only of testing problem-solving strategies but of devising them *de novo*.

[...] We already have some fairly definite ideas of the lines which promise progress, and we have received a most powerful stimulus and aid from collateral

researches, conducted by Mr P. Schofield of the University's Computer Unit, into the minimal-path structure of the Eight-puzzle. The extent to which any success which we gain will yield general principles of wide application to problem-solving is something which only time will tell.



Professor Donald Michie (1923–2007)

Machine Intelligence is Different

by Michael Rovatsos

Reading Michie's article against the background of recent advances in AI, contemporary readers might be easily led to marvel at the progress the field has made in the intervening sixty years. A different, more critical reading, however, suggests that little progress has actually been made in terms of how much AI has advanced our *understanding* of human intelligence. One might argue that, instead of learning more about how we think, we ended up building machines whose 'intelligence' is nothing like ours.

To re-trace how this happened, it is important to look at the mindset of the first generation of AI researchers to which Michie belonged. Many of whom came from different disciplines—including mathematics, medicine, economics, and physics—and had witnessed major scientific crises, world wars, and enormous changes in society. Inspired by the emergence of digital computing machinery, they imagined that automated information processing would open up opportunities to unify the *quantitative* dimensions of knowledge that dominated 'positivist'¹ thinking

Devastation and Restoration Revisited

by Andrew J. Dugmore

Editorial Note: Edinburgh is quintessentially a geologist's city, dominated by an extinct volcano: Arthur's Seat. It has been said that an excursion to Arthur's Seat must always be at the beginning of an Edinburgh geological degree; and it still is. But Arthur's Seat is old and extinct and tells nothing of the transformation and trauma caused by a live volcano in action. The *University of Edinburgh Journal* archive does, however, contain an evocative article describing the aftermath of a volcano by the late Edinburgh Geology Graduate, Dr Daphne Pochin Mould (BSc1943, PhD 1946). Published in 1975, Dr Pochin Mould's article provides a fascinating glimpse of events associated with the Eldfell eruption on the island of Heimaey in 1973. Prompted by news of the recent Fagradalsfjall eruptions in Iceland, we invited our Professor of Geosciences, Andrew J. Dugmore, to read Dr Pochin Mould's article and re-interpret it from a 2025 perspective.

In the early hours of 23 January 1973, a volcanic eruption began to devastate the town of Heimaey which stands on the small island of the same name, some 10 km off the south coast of Iceland. In 1975, Dr Daphne Pochin Mould wrote a wonderful account for the *Journal*¹ of both the devastation caused by lava and volcanic ash, and the Icelanders' resilient response. Fifty years later, this endures as a remarkable story of both fortitude and imagination—how the islanders saved

their harbour from the encroaching lava, excavated and rebuilt their town, and even took advantage of the heat locked in the cooling lava to warm their houses.

Heimaey 1973 and Sundhnúksgrígar 2023

Pöchin Mould's account provides both a fascinating first-hand account of a spectacular natural hazard and an intriguing contrast to the recent and continuing volcanic activity of the Sundhnúksíggar (Sundhnúkur crater row) fissures in south-west Iceland, which has lasted on and off for over a year, and shows no sign of ending. This volcanic activity, characterised by repeated outpourings of lava flowing from long fissures in the ground, is quite different to that on Heimaey half a century ago—which, although it started from a 2 km long fissure, soon became focussed to form a new volcanic cone called Eldfell (Fire Mountain), which rose to just over 200 m above sea level. This is about the same height as Arthur's Seat stands above the City of Edinburgh. In contrast, the recent volcanic activity of Sundhnúksíggar has continued as lavas welling up from long fissures in the ground and cracks that suddenly open to release floods of molten rock. Whilst they have not generated any significant ash fall, these lava flows threaten the small town of Grindavík, the vital geothermal power plant of Svartsengi, and the neighbouring Bláa Lónið (the Blue Lagoon). The lagoon is a vital part of the island's tourist industry, catering to over one million visitors a year.

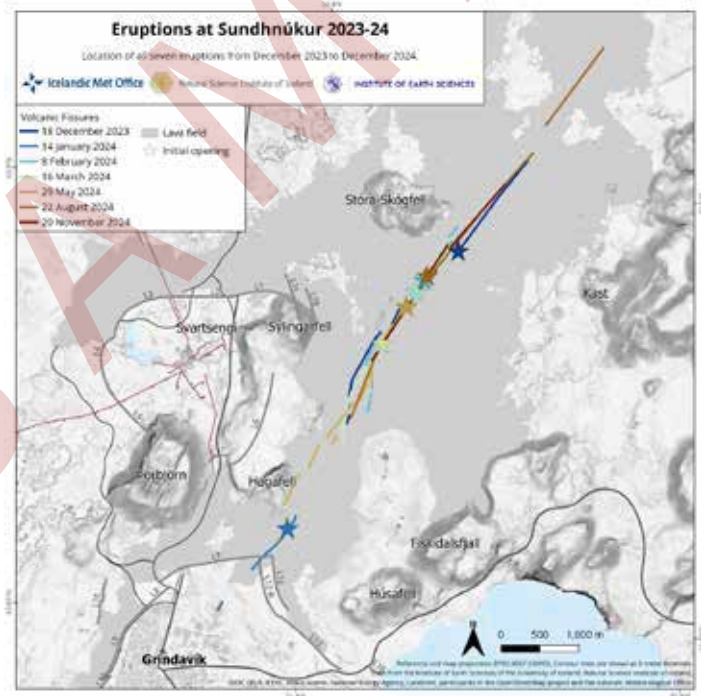


Figure 1: Lava flows from the Sundhnúkur crater row in Iceland shown in grey. Artificial embankments labelled 'L' have so far saved Grinavík town and the Svartsengi power plant from destruction. A full description and legend is given in the Notes.

Grindavík, the Svartsengi power plant, and the Blue Lagoon have been protected from the lava flows by hurriedly constructed embankments which have been remarkably successful, and have, so far, suffered only a minor breach when a fissure spread a short way inside the protective barrier around the town of Grindavík. The unpredictable spread of the fissures, coupled with the damage caused by earth movements, is why Grindavík has been evacuated and, despite some limited re-opening, it is still effectively abandoned and its future uncertain. Just over 3,600 people lived in the town before the evacuation, and whilst their displacement may seem comparatively minor by international standards, it does represent nearly a tenth of the whole population of Iceland. Crucially, the Icelanders had made plans for how to cope with this type of emergency.

A further contrast between the devastation of Heimaey observed by Pochin Mould 50 years ago and the present-day threats looming over Grindavík is that, while over 200 houses in Heimaey were destroyed by the lava flow, as many again were buried by volcanic ash. Fortunately, Sundhnúksgrígar is not, as yet, producing any significant ash fall, but that could change if the fissures extend below the sea, and water flows to meet molten rock with explosive consequences.

Wider volcanic impacts

Historically, it has been falls of volcanic ash (also known as tephra) that have created the most widespread hazards in Iceland, and, 15 years ago, it was the ash plumes from the eruption of Eyjafjallajökull that closed European air space, leading to the cancellation of over 100,000 flights. The threats posed by volcanic ash both close to, and far away from, the site of a volcanic eruption can be acute, even if the fallout is light but associated with poisonous gases. The greatest volcanic disaster to affect Iceland happened in 1783–4 when a truly enormous outpouring of lava and limited generation of volcanic ash also produced gas clouds that included fluorine, which in this circumstance is highly toxic. The fallout poisoned livestock across the island, led to famine, and the deaths of thousands of people; thousands more also died far away in England as a result of air pollution which notably struck down labourers working in the fields during the hot anticyclonic conditions of the summer. In that case, the weather played a key role in concentrating the pollution at ground level and intensifying the volcanic hazards, just as different weather conditions did in 2010, when the winds blew the ash clouds towards Europe and the air lanes, rather than north into the Arctic Ocean.

Fortunately, the events of 1783–4 were extreme, and as far as we know, unique. Indeed, most of the 2–300 volcanic eruptions that have occurred since people first arrived in Iceland have passed without killing people. This raises the intriguing question: what enables people to cope with events that occur decades or even centuries apart?

The Centenary of the Founding of the Elsie Inglis Maternity Hospital

by Richard A. Anderson

Editorial Note: It is not widely appreciated that the centenary of the founding of *University of Edinburgh Journal* in 2025 is coincident with the centenary of the founding of the Elsie Inglis Memorial Maternity Hospital, in Edinburgh. Elsie Inglis (1864–1917) was one of Scotland's most famous feminists and one of the first women to graduate from the University of Edinburgh. Considering the impact that Inglis had on women's healthcare, we invited the current holder of the Elsie Inglis Chair of Reproductive Medicine, Professor Richard A. Anderson, to re-appraise her achievements and their significance from a modern medical perspective.

The changes involved in the development of modern hospital-based health services always attract a lot of attention and emotion, never less than when concerning places of birth. Recent decades have seen the closure of a number of maternity units across Edinburgh with increased centralisation. This has also involved the relocation of the Royal Infirmary and the attached Simpson Memorial Maternity Pavilion to the Little France campus on the south side of the city from its previous iconic location on Lauriston Place, overlooking the Meadows and with views from the upper floors over the rooftops of Marchmont to the Pentland Hills beyond.

The importance of recognising and remembering our history and the achievements of those who pioneered these services remains strong and perhaps increasingly so in these times of uncertainty and global change. 2025 is the centenary of the opening of one very prominent maternity hospital in the history of Edinburgh, named in honour of Elsie Inglis, pioneer and champion of women's healthcare, for and by women. The contribution by Elsie Inglis to the development of Edinburgh's gynaecology and maternity services can be traced back to the Edinburgh Provident Dispensary for Women and Children, on Grove Street, opened by Dr Sophia Jex-Blake in 1878. Jex-Blake retired in 1899 and her former home, Brunstfield Lodge, was acquired and,



Elsie Inglis

after redevelopment, opened as the Bruntsfield Hospital for Women. It had 18 beds and provided medical, surgical, and gynaecological services and training for female doctors. That same year, the George Square Nursing Home was opened at 11 George Square by the Medical Women's Club, which Elsie Inglis led, providing a 7-bed hospital and a nursing home for women. This moved to the Royal Mile in 1904, being renamed 'The Hospice', and was located at 219 High Street. Despite its perhaps misleading name to modern ears, it was a maternity hospital, serving the poorest families in the Old Town during pregnancy and confinement. There were always very close links between the Hospice and the Bruntsfield Hospital, with shared staff, and they formally merged in 1910 while retaining their own identities and the division of medical services for women. Elsie Inglis herself was appointed to the Consultant staff of the Bruntsfield Hospital in 1905.

The new 20-bed Elsie Inglis Maternity Hospital was built with funds from the disbanded Scottish Women's Hospitals, opening in July 1925. It was located on the edge of Holyrood Park with a fine view over the Salisbury Crags, and indeed photographs from the 1930s show sheep in the foreground. It was subsequently incorporated into the NHS in 1948 and, over time, it grew to 82 beds. However, in the late 1980s, it was closed as a maternity hospital as part of a reconfiguration of maternity and gynaecology services across the city, which also included the closure of the Bruntsfield Hospital (which by then had expanded to house 72 beds) and of maternity services at the Western General and Eastern General hospitals.

Civil Society Engagement in Scotland with the Mission, Vision, Values, and Goals of the United Nations

by Gari Donn, Yuemiao Ma & Hana Shono

Editorial Note: The alarming geopolitical issues of our times prompt anxieties concerning the general education and future of the next generation. In that spirit, the *Journal* is pleased to present the work of Gari Donn and her colleagues (including student volunteers), who have been working tirelessly to engage with primary and secondary school students and universities to educate our young people on political discourse and engagement.

Background

When, in 2011, the City of Edinburgh Council offered United Nations House Scotland (UNHS) a top-floor office at Hunter Square, it changed the perspective and prospects of this charitable organisation. Immediately, we had space to invite other charities and like-minded organisations to take desks and collaborate on widening knowledge of the work of the United Nations (UN) and its relevance for local and national communities in Scotland.

In 2012, UN House Scotland was formally opened by the then Minister of International Development, Humza Yousaf. Over 2012–25, more than 550 young people, many students of the University of Edinburgh, have volunteered at UNHS, contributing to many project-based teams, all dedicated to taking forward

the mission, vision, values, and goals of the UN at civil society levels.

Being part of the UN Association Scotland (UNAS), a charity registered in Scotland, the focus of UNHS is committed to developing knowledge about and implementing the principles of the UN into civil society practice. We do this in a variety of ways: between 2014 and 2022, Invitational Seminars to a country house on issues related to Iran and the Middle East, Russia and Ukraine, and Syria and Afghanistan brought together those who had opposing views. This was in the footsteps of Prof. John Erikson, University of Edinburgh Professor of Politics in the 1980s, who created the Edinburgh Conversations. Our hope at UNHS is to continue the momentum of similar work and our aim is to encourage engagement.

Engagement is Key

At UNHS, our engagement is team-based, and each team is led by volunteer interns. These volunteer interns are mostly students from universities in Scotland and some choose to stay with UNHS as they move away and take their first career steps. The number of interns has continued to grow as teams and projects expand and more university students show an interest in working with civil society organisations. Indeed, there has been an astonishing interest in advocacy and international relations, and this can be seen not just at UNHS but also in the number of NGOs started by young thinkers; an increase in youth steering committees and programmes in UN agencies; an emphasis in encouraging young people to join the government; and, most prominently, the growing youth voice in the fight against climate change.

At any one time, there may be 5–10 volunteer interns in a team, all collaborating on the production of activities dedicated to raising awareness of the UN in our civil society and academic communities. With an ebb and flow of interns moving into and onward from UNHS, new teams emerge; interests change and new approaches are developed. The Research Papers team is a case in point. It started with a working paper series project to publish research related to the UN Sustainable Development Goals (SDGs) in an effort to raise awareness. It also gave students an opportunity to produce a 3,000-word article on the basis of their much lengthier dissertations and theses. The interns on the team take the time to edit, compile, and present the research papers in one thematic series that gets published every couple of months.

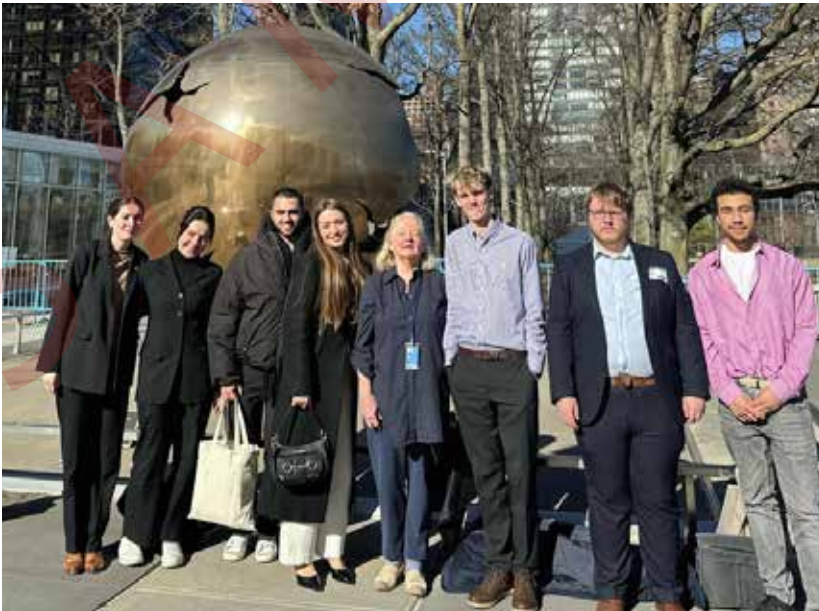
Other team-based activities involve organising roundtables, seminars, conferences, and writing reports from these meetings; acting as the secretariat of the Scottish Parliament Cross Party Group on Human Trafficking; organising Model UNs; bringing climate ambassadors for youth engagement to Scotland (our Beyond COP team); and attending treaty negotiations at the UN and subsequently attending meetings of State Parties to take forward civil society engagement. For further information on what we do, please visit our website.¹

Engagement with the UN: The UN Relationship

UNHS—as part of UNAS—is able to apply for site passes for the various meetings of the UN. Interns at UNHS have attended meetings, committees, assemblies, and treaty negotiations at the UN in Geneva, Paris, Nairobi, and New York. In September 2024, one intern attended the Summit of the Future and the resulting article is now on the UNHS website.²

Our interns gather knowledge of what it means to be involved in treaty negotiations, with a number of them speaking at the UN on behalf of civil society organisations attending these meetings. In 2017, when there were lively discussions about the formation of a Treaty on the Prohibition of Nuclear Weapons (TPNW), UNHS interns in attendance were vocal, eloquently speaking on behalf of civil society engagement. Each year, the TPNW—now a formally signed, ratified, and legally-binding treaty—continues to engage youthful voices at the meetings of State Parties.

In March 2025, the 12-person delegation from UNHS to the third Meeting of State Parties (3MSP) to the TPNW drew attention to the importance of Scotland being represented. Each delegate attended the 3MSP political diplomatic meetings as well as those organised by civil society. The resulting booklet is on our UNHS website.³ For most of those in the delegation, there was a steep learning curve about nuclear weapons and ‘security’. We took on board the mantra ‘we must reject the illusion of security that nuclear weapons provide and instead embrace the collective responsibility to ensure a world free from the threat of nuclear war’.



Group in front of one of the Sphere Within Sphere bronze sculptures at the UN Plaza in New York City, USA, on 10 March 2025.



Contributions to the *Journal*

The Interim Editor of the *University of Edinburgh Journal* welcomes and encourages submissions from all corners of the University community, including students, alumni, staff, and friends of Edinburgh. Submissions can be scholarly in nature, dealing with a personal experience, a particular interest, or a piece of research, or they can be comprised of creative prose or poetry.

Contributors are also welcome to write reviews of books, films, theatre productions, or other media for inclusion in our reviews section. Our Editorial Team can normally secure review copies from publishers which the reviewer would be welcome to keep after publication.

There is no cost for submitting a piece of writing to the *Journal*, and all contributions will be seriously considered. Our Editorial Team will provide support and advice on the preparation of material and accompanying illustrations, and each author will receive a complimentary hard copy and PDF file of the issue which includes their published work.

For more information on making a submission to the Interim Editor of the *Journal*, copy deadlines, and style guidance, please contact our Editorial Team at:

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The cover artwork of this issue of the *University of Edinburgh Journal*
shows a view of Arthur's Seat from the south.

An ancient and extinct volcano, Arthur's Seat exhibits the varied and fascinating
geological history of Edinburgh.

In this issue of the *Journal*, Prof. Andrew Dugmore reflects on the writing of
Dr Daphne Pochin Mould and volcanism in Iceland on pages 34–41.



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